

04-16-562147

**State of Wisconsin - Department of Natural Resources
Substance Release Notification Report (SERTS)
Report created on 06/12/2014**

SPILL ID# 20131226NO16-1

Incident Date & Time: 12/26/2013 11:50	Reported Date & Time: 12/26/2013 12:39	BRRTS No:	Spill ID: 20131226NO16-1
DATCP Reported? No DATCP Transferred? No	NFA Letter Sent? No	ERP Transferred? No	Incident Closed? Yes : 06/12/2014

Location			
Region: NO	County: Douglas	Municipality: SUPERIOR, CITY OF	
Facility/Property Name and Street Address: CALUMET SUPERIOR 2400 STINSON AVE		Description: EAST OF COOLING TOWER #2	
Facility Type: Bulk Petroleum Storage (Tank Farm/Terminal/Refinery)			
Lat/Long:		PLSS:	WTM: X 361711 Y 692928
Weather Conditions:			

Responsible Parties			
Name/Address (1): CALUMET SUPERIOR LLC 2400 STINSON AVE SUPERIOR, WI -	Contact: DAVID BEATTIE ENVIRONMENTAL ENGINEER (715) 398-3533 x primary	Other Contact:	Spill Packet:

Cause
CORRODED LINE.

Cause Type: Equipment Failure

Substances						
Name	Other / Comments	Amt Released	Amt Recovered	Type	Color	Odor
Fuel Oil	NUMBER 6	100.0 Gal	100.0 Gal	LIQUID		

Environmental Impacts / Damages			
Environmental Impacts: SOIL	Resource Damages: No	Injuries: No	Evacuation: No

Cleanup Actions	
Method	Description
Excavation	

Cleanup Action Comments

Contractors Hired	
Name	Description

Waste Destinations	
Location	Description

Agencies Notified / On Scene		
Agency	Notified	On Scene
DNR	X	

Additional Comments

**State of Wisconsin - Department of Natural Resources
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 Report created on 06/12/2014**

SPILL ID# 20131226NO16-1

SAGER RECEIVED A TELEPHONE CALL FROM DAVE BEATTIE, CALUMET AT APPROXIMATELY 1500HRS ON 12/26/13. REPAIRS WERE MADE AND CLEANUP OF CONTAMINATED SOIL WILL BEGIN ON 12/27/13. SAGER SENT PETER FREDMAN A REQUEST FOR AN UPDATE VIA EMAIL ON 1/9/14. SAGER RECEIVE EMAIL RESPONSE FROM FEDMAN AT 1019HRS ON 1/9/14. SAGER SPOKE TO PETER FEDMAN AT APPROXIMATELY 1330HRS ON 1/29/14. CALUMET HAS EXCAVATED TO THE EXTENT POSSIBLE CONSIDEREING THE WEATHER. CALUMET WANTS TO WAIT UNTIL SPRING TO FINISH THE CLEANUP. SAGER VISITED THE SITE ON 1/30/14. VERY SMALL AMOUNTS OF FREE PRODUCT VISIBLE UNDER PIPE RACK. CALUMET RECOVERED ALL THE OIL THAT IS PRACTICAL TO RECOVER NOW. ADDITIONAL CONTAMIANATED SOIL WILL BE REMOVED WHEN WEATHER CONDITIONS IMPROVE. SAGER RECEIVED AN IMEDIATE ACTION REPORT FROM CALUMET ON FEBRUARY 7, 2014. CALUMET WILL SEND IN A FINAL REPORT UPON COMPLETION OF IMMEDIATE ACTIONS. SAGER RECEIVED AN EMAIL STATUS UPDATE FROM CALUMET ON APRIL 29, 2014. ADDITIONAL FREE PRODUCT WAS COLLECTED AND CONTAMINATED SOIL WAS EXCAVATED ON 4/22-23/14. SAGER REQUESTED CONFIRMATION SAMPLES FROM THE SPILL AREA ON 4/29/14. SAGER RECEIVED ADDITIONAL INFORMATION FROM CALUMET ON JUNE 5, 2014. TRANSFERRED TO ERP 01-16-562123 PENDING.

Enforcement Action/Citation

Enforcement Action/Citation? No

Case Activity Reports:

Person Reporting

Name	Representing / Address	Primary Phone	Secondary Phone
DAVID BEATTIE	CALUMET SUPERIOR LLC	(715) 398-3533 x	

Contractors Hired

Name / Address	Zone Contractor Hired by DNR?
	No

Contacts

Role	Name	Office Phone	Date	Time
Prepared By:	JOHN SAGER	(715) 365-8959 x	12/26/2013	
Person Notified:	NOR SPILL COORDINATOR JOHN SAGER	(715) 365-8959 x	12/26/2013	
Investigated By:	JOHN SAGER		12/26/2013	
Incident Commander:				
Spill Coordinator:	JOHN SAGER, NO Region	(715) 365-8959 x	06/12/2014	

Electronic Attachments (list)

Name	Type
20131226NO16-1_RP_Documentation_Immeidate_Action_Report.pdf	Portable Document Format

Sager, John E - DNR

From: Sager, John E - DNR
Sent: Thursday, June 12, 2014 13:30
To: Peter Fredman (Peter.Fredman@calumetspecialty.com)
Cc: Endsley, Erin A - DNR
Subject: December 26 2013 spill east of cooling tower #2 SERTS ID 20131226NO16-1

Peter,

Attached is the DNR's spill report for the spill near cooling tower # 2. I transferred this spill to a pending ERP site until the negotiated agreement is finalized. At that time the spill will be transferred to the facility-wide ERP site BRRS ID 02-16-559511. When the transfer occurs and a facility-wide GIS package is submitted the required GIS Registry information concerning this spill will need to be submitted for addition to the Registry. Please contact me if you have any questions.



20131226NO16-....



Emergency Response Coordinator / Hydrogeologist
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
1701 North 4th Street
Superior, WI 54880

(☎) phone: (715) 365-8959

(☎) fax: (715) 392-7990

(✉) e-mail: john.sager@wi.gov

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Sager, John E - DNR

From: Peter Fredman <Peter.Fredman@calumetspecialty.com>
Sent: Thursday, January 09, 2014 10:20
To: Sager, John E - DNR
Subject: RE: December 26th spill
Attachments: 122613 6 Oil Spill Map.pdf

Hi John,

Attached is a map with the location of the spill. As of Thursday 1/2/14, we had excavated all soil that could be reached with our mini excavator. We were able to excavate some soil by hand under the pipe racks at that time as well. Since Friday 1/3/14, the temperatures have been very cold and the #6 oil has solidified to the point it cannot be excavated by hand. We have tried warming the area with insulation; however, temperatures have been so low, the insulation has not been effective. We could put steam hoses under the insulation but are concerned it will melt the frost and allow the spill to absorb into the soil. Our current plan is to try hand excavation again tomorrow afternoon when temperatures have increased 50+ degrees from last week to see if the remaining free product (about 5-10 gallons) is able to be excavated. Current totals are 10 yards of snow and 10 yards of soil have been excavated from the area.

Let me know if you have any further questions.

Thanks,
Peter

From: Sager, John E - DNR [<mailto:John.Sager@wisconsin.gov>]
Sent: Thursday, January 09, 2014 9:19 AM
To: Peter Fredman
Subject: December 26th spill

Hi Peter,

Can you please send me an update of the spill response for the spill on 12/26? I exchanged voice mail messages with Dave at the time it seemed like everything was under control. With your update can you please also send a location of the spill. Thanks.



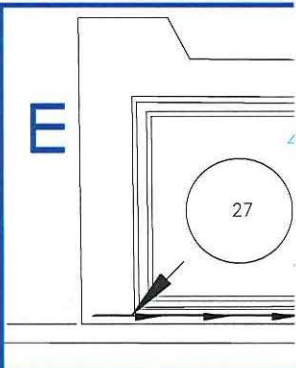
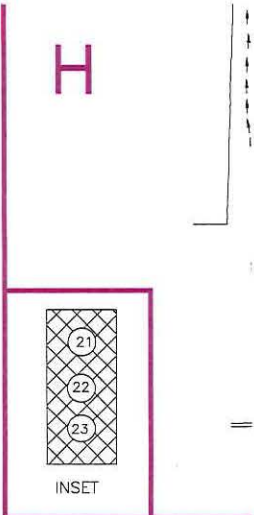
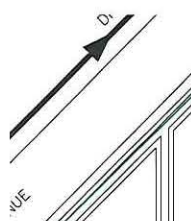
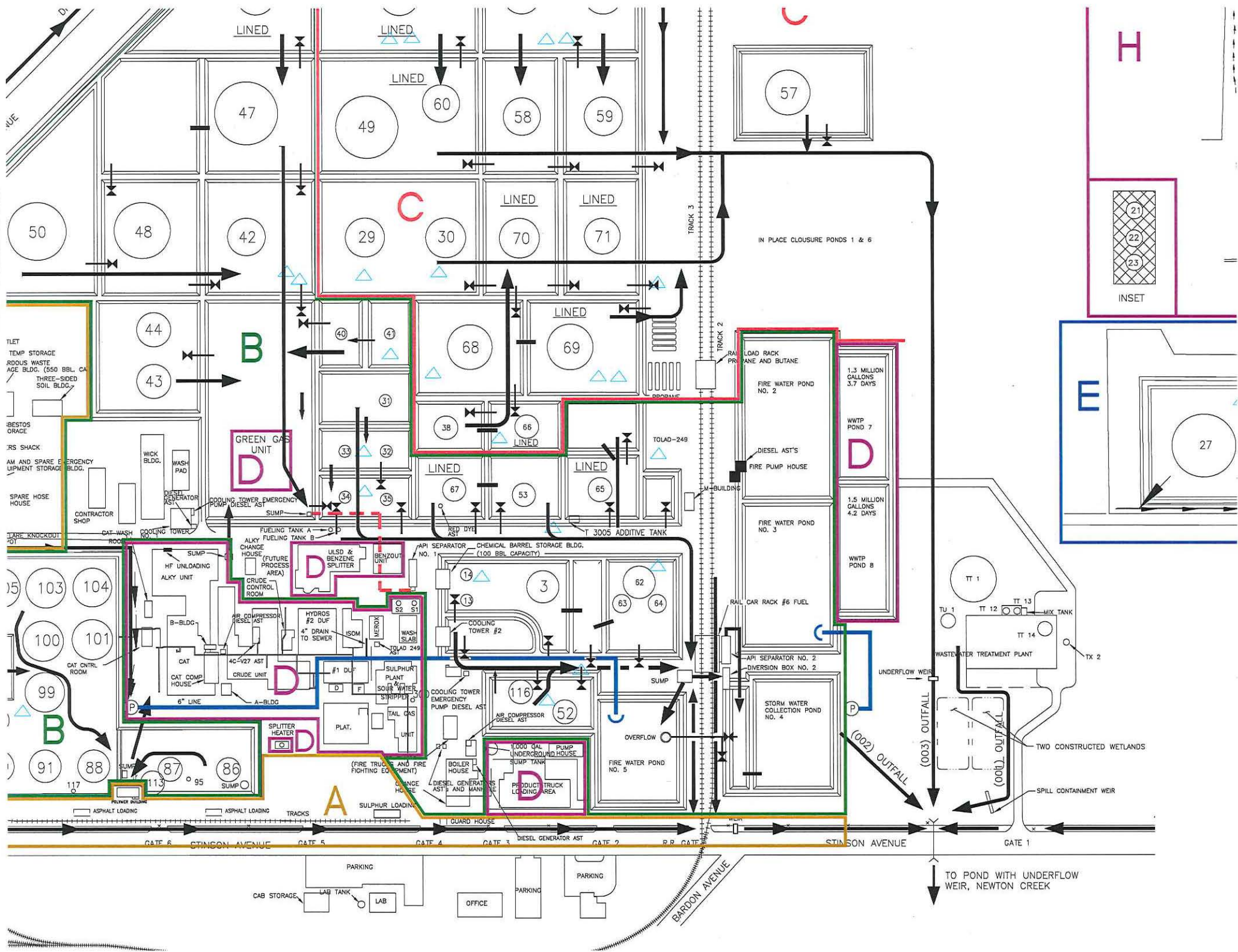
Emergency Response Coordinator / Hydrogeologist
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
107 Sutliff Avenue
Rhineland, WI 54501

(☎) phone: (715) 365-8959

(☎) fax: (715) 365-8932

(✉) e-mail: john.sager@wi.gov

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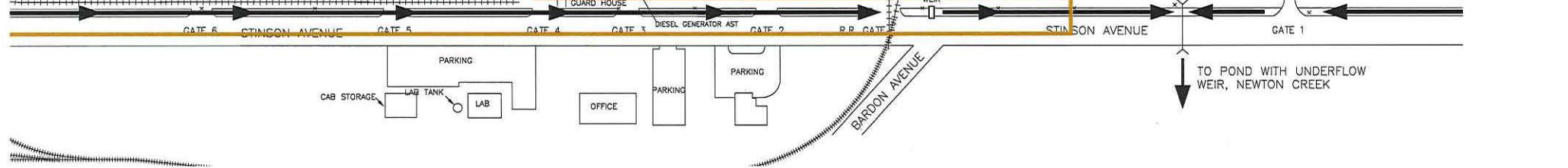


INLET
TEMP STORAGE
RODDUS WASTE
AGE BLDG. (550 BBL. CA
THREE-SIDED
SOIL BLDG.

BESTOS STORAGE
IRS SHACK
AM AND SPARE EQUIPMENT STORAGE BLDG.
SPARE HOSE HOUSE

WICK BLDG.
WASH PAD
DIESEL GENERATOR
CONTRACTOR SHOP
CAT WASH ROOM
COOLING TOWER

105
103
104
100
101
99
91
88
87
86
117
118
113
95
SUMP



Sager, John E - DNR

From: Peter Fredman <Peter.Fredman@calumetspecialty.com>
Sent: Friday, February 07, 2014 13:55
To: Sager, John E - DNR
Subject: SERTS ID 20131226NO16-1
Attachments: 122613 NR708 Immediate Action Report (final).pdf

John,

Attached is the Immediate Action Report required under NR708.05.

I will submit the final report required under NR708.09 once the final cleanup is completed this spring.

Thanks,

Peter Fredman

Environmental Engineer

Phone: 715-398-8434

Fax: 715-398-8209





2407 Stinson Avenue Superior, WI 54880
Phone: 715-398-3533 Fax: 715-398-8209 www.calumetspecialty.com

February 7, 2014

John Sager
Emergency Response Coordinator / Hydrogeologist
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
107 Sutliff Avenue
Rhinelander, WI 54501

Re: #6 Fuel Oil Release SERTS ID 20131226NO16-1

Dear Mr. Sager,

Please find the attached report regarding the immediate action taken in response to the #6 fuel oil release reported to the WDNR on December 26, 2013 as required under NR 708.05(6)(a).

It should be noted that Calumet is not requesting no further action at this time. It is Calumet's intention to complete additional clean-up activities as weather/site conditions permit in 2014.

If you have any additional questions, please feel free to contact me at (715) 398-8434.

Thank you,

Peter Fredman

Environmental Engineer

NR708.05(6)(a) Immediate Action Report

708.05(6)(a) Unless par. (b) is applicable or unless otherwise directed by the department, responsible parties shall prepare and submit written documentation to the department describing the immediate actions taken at their site or facility and the outcome of those actions, within 45 days after the initial hazardous substance discharge notification is given to the department in accordance with the requirements of ch. NR 706.

1. 708.05(6)(c)1 A statement expressing the purpose of the submittal and the desired department action or response.

The purpose of this submittal is to comply with the written documentation requirements under NR 708.05(6) describing the immediate action taken following a hazardous substance discharge. Calumet requests that the department deem this report acceptable to fulfill the requirements of NR 708.05(6).

Due to the current weather/site conditions at and subsequent to the time of discharge, including the depth of frost at the site, it has been impracticable to eliminate all visual traces of #6 fuel oil at the site of the spill. Calumet is requesting the WDNR allow the spill to remain open until weather/site conditions allow excavation to be completed in areas where structural impediments prohibit the use of heavy equipment. Once the immediate response action is completed, Calumet will submit the required report under NR 708.09.

2. 708.05(6)(c)2 Name, address and telephone number of the responsible parties.

Name: Calumet Superior, LLC

Address: 2407 Stinson Ave., Superior, WI 54880

Phone: (715) 398-3533

3. 708.05(6)(c)3 Location of the site or facility, or discharge incident, including street address; quarter-quarter section, township, range, and county; and the location information specified in s. NR 716.15 (5) (d); latitude and longitude, and legal description of lot, if located in platted area.

Street Address: 2407 Stinson Ave., Superior, WI 54880

Coordinates: NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 36, Township 49 North, Range 14 West, Superior Township of Douglas County.

WTM Coordinates: X:361,711
Y:692,928

4. 708.05(6)(c)4 Any information required under ch. NR 706 that has not been provided to the department previously.

Information required under NR 706 was supplied to the Division of Emergency Management with the Initial Discharge Notification required under NR 706.05(1)(b). To ensure all information is provided, please see attachment A for a summary of the information initially reported.

5. 708.05(6)(c)5 The type of engineering controls, treatment or both and the effluent quality of any permitted or licensed discharge.

The discharge was controlled utilizing an earthen berm required by the Spill Prevention, Control, and Countermeasure (SPCC) regulation as required by Title 40 of the Code of Federal Regulation Part 112.

Effluent stormwater is regulated under the Department of Natural Resources general permit for Tier 1 industrial Facilities (WPDES Permit No. WI-S067849-3) and under the facilities WWTP (Permit No. 0003085-07-0).

Any deviations from permitted conditions and/or limits under either permit are reported as required by the respective permit.

6. 708.05(6)(c)6 The type, total volume and final disposition of the discharged hazardous substance and contaminated materials generated as part of the immediate action, including legible copies of manifests, receipts and other relevant documents.

Type of Material Spilled:

#6 Fuel Oil

Total Volume:

100 Gallons

Final Disposition:

Due to the weather/site conditions at and subsequent to the time of discharge, there are still trace amounts of #6 fuel of remaining at the site of the discharge.

All excavated material is stockpiled at Calumets' Solid Waste Storage Facility (License No. 4062). It is stored there until adequate quantities are reached to schedule shipment.

All recovered product is re-inserted into the refining process.

All recovered water is treated on-site at the facilities WWTP (Permit No. 0003085-07-0).

Attachment A

NR 706.05 Hazardous Substance Discharge Notification Form

NR 706.05 Hazardous Substance Discharge Notification Form

(c)(1) Person Reporting

Name: David Beattie
Address 2407 Stinson Ave, Superior, WI 54880
Phone: 715-398-8455

(c)(2) Owner/Discharger

Name: Calumet Superior, LLC
Address 2407 Stinson Ave, Superior, WI 54880
Phone: 715-398-3533

(c)(3) Discharge Information

Date: 12/26/2013
Time: 11:50
Duration: On-going

(c)(3m) Discharge Location (WTM Coordinates)

X: 361,711
Y: 692,928

(c)(4) Discharge Material

Identity: #6 Fuel Oil
Physical State: Solid
Quantity: 100 Gallons

(c)(5) Discharge Characteristics

Physical: Solid
Chemical: C18 + Hydrocarbons
Hazardous: Combustable
Toxicological: Low Toxicity

(c)(6) Cause

Cause: Leaking Thermal Relief Line

(c)(7) Response Action

Action Taken: Clean Snow and Impacted Soil
Contractor(s): JR Jensen, In-Line

(c)(8) Movement

Source: Thermal Relief Line
Speed: <1 MPH
Destination: Contained within Secondary Containment

(c)(9) Impacts

Human Health: None know at this time
Environmental: Contaminated soil
Water Supplies: None know at this time

(c)(10) Weather

Precipitation: None
Wind Direction: WNW
Velocity 5 MPH

(c)(11) Other Agencies on-scene

Agencies: N/A

Sager, John E - DNR

From: Peter Fredman <Peter.Fredman@calumetspecialty.com>
Sent: Tuesday, April 29, 2014 13:07
To: Sager, John E - DNR
Subject: RE: December 26th 2013 spill SERTS ID 20131226NO16-1

Hi John,

On April 22nd and 23rd we completed additional remediation at the site.

This response included excavation under the pipe rack area by hand, a backhoe to excavate open areas, and a vacuum truck to recover water in the area.

The remaining free product was recovered (estimated 10 gallons) and visual evidence of impacted soil was removed. An additional 50 cubic yards of soil was removed from the area.

Please advise if the WDNR requests confirmation sampling for this spill. Due to the low lying nature of the release area and frequent precipitation since 4/23/14, a couple days without precipitation is needed to collect accurate samples.

Thanks,

Peter Fredman

Environmental Engineer

Phone: 715-398-8434

Fax: 715-398-8209



From: Sager, John E - DNR [<mailto:John.Sager@wisconsin.gov>]
Sent: Tuesday, April 29, 2014 9:26 AM
To: Peter Fredman
Subject: December 26th 2013 spill SERTS ID 20131226NO16-1

Hi Peter,

Do you have an update on this spill. I am trying to catch up on my open spills from 2013. Thanks.



Emergency Response Coordinator / Hydrogeologist
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
1701 North 4th Street
Superior, WI 54880

(☎) **phone:** (715) 365-8959

(☎) **fax:** (715) 392-7990

(✉) **e-mail:** john.sager@wi.gov

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Sager, John E - DNR

From: Peter Fredman <Peter.Fredman@calumetspecialty.com>
Sent: Wednesday, April 30, 2014 08:25
To: Sager, John E - DNR
Subject: RE: December 26th 2013 spill SERTS ID 20131226NO16-1

I'll work on a plan to get some samples.
Thanks,
Peter

From: Sager, John E - DNR [<mailto:John.Sager@wisconsin.gov>]
Sent: Tuesday, April 29, 2014 4:44 PM
To: Peter Fredman
Subject: RE: December 26th 2013 spill SERTS ID 20131226NO16-1

Thank you for the update Peter. Waiting for a few days with no precipitation may be a giant hurdle but I think we should collect a few confirmation samples analyzed for PVOC and naphthalene.

Thanks.



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(✉) **e-mail:** john.sager@wi.gov

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Sager, John E - DNR

From: Peter Fredman <Peter.Fredman@calumetspecialty.com>
Sent: Wednesday, May 28, 2014 15:12
To: Sager, John E - DNR
Subject: RE: December 26th 2013 spill SERTS ID 20131226NO16-1
Attachments: 052214 Sample Map.pdf; 052214 CT2 6OIL Spill.pdf

Follow Up Flag: Follow up
Flag Status: Completed

John,

I was finally able to collect samples. The results are attached. The two samples with high readings of naphthalene (S-3 and S-5) were outside the area free product was encountered in.

Give me a call to discuss the next step.

Thanks,
Peter

From: Sager, John E - DNR [<mailto:John.Sager@wisconsin.gov>]
Sent: Tuesday, April 29, 2014 4:44 PM
To: Peter Fredman
Subject: RE: December 26th 2013 spill SERTS ID 20131226NO16-1

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Thanks.



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Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
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(✉) **e-mail:** john.sager@wi.gov

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Company Name/Address:
Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

Billing Information:
 David Beattie
 2407 Stinson Avenue
 Superior, WI 54880

Analysis/Container/Preservative	
PVOCGRO	60ml Amb/MeOH
TS	2oz CLR - NoPres

Chain of Custody
 Page ___ of ___

ESC
 L-A-B S-C-I-E-N-C-E-S
 12065 Lebanon Road
 Mt. Juliet, TN 37122
 Phone: (800) 767-5859
 Phone: (615) 758-5858
 Fax: (615) 758-5859

H231

Report to: **Peter Fredman**

Email to: **peter.fredman@clmt.com**

Project Description: **CT2 #6 Oil**

City/State Collected: **Superior/WI**

Phone: (715) 398-8455
 FAX: (715) 398-8209

Client Project #:

ESC Key:

Collected by: (print) **Josh VanHorn**

Site/Facility ID#:

P.O.#: **67981**

Collected by (signature):
Josh VanHorn
 Immediately Packed on Ice N ___ Y

Rush? (Lab MUST Be Notified)
 ___ Same Day..... 200%
 ___ Next Day..... 100%
 ___ Two Day..... 50%
 Three Day..... 25%

Date Results Needed:
 Email? ___ No Yes
 FAX? No ___ Yes

No. of Cntrs

CoCode **MUROILSW** (lab use only)
 Template/Prelogin
 Shipped Via: **FedEx**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Analysis/Container/Preservative		Remarks/Contaminant	Sample # (lab only)
S-1	Grab	SS	6"	5/22/14	10:47	2	X	X		L 700815-01
S-2	Grab	SS	6"	5/22/14	11:14	2	X	X		02
S-3	Grab	SS	6"	5/22/14	11:34	2	X	X		03
S-4	Grab	SS	6"	5/22/14	11:50	2	X	X		04
S-5	Grab	SS	6"	5/22/14	12:08	2	X	X		05

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____ pH _____ Temp _____
 Remarks: **5/22 39816708** Flow _____ Other _____

Relinquished by: (Signature) <i>Josh VanHorn</i>	Date: 5/22/14	Time: 13:53	Received by: (Signature) <i>Peter Fredman</i>	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____	Condition: (lab use only) OK
Relinquished by: (Signature) <i>Peter Fredman</i>	Date: 5/22/14	Time: 1410	Received by: (Signature) _____	Temp: 3.1	Bottles Received: 10
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab by: (Signature) <i>_____</i>	Date: 5/23/14	Time: 1000



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Peter Fredman
Calumet Specialty Products
2407 Stinson Avenue
Superior, WI 54880

Report Summary

Wednesday May 28, 2014

Report Number: L700815

Samples Received: 05/23/14

Client Project: CT2 6 Oil

Description: CT2 6 Oil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


John Hawkins, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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 (615) 758-5858
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 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Peter Fredman
 Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

May 28, 2014

Date Received : May 23, 2014
 Description : CT2 6 Oil
 Sample ID : S-1 6IN
 Collected By : Josh V
 Collection Date : 05/22/14 10:47

ESC Sample # : L700815-01

Site ID :

Project # : CT2 6 Oil

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	74.7		%	2540 G-2011	05/24/14	1
PVOCGRO						
Benzene	0.36	0.34	mg/kg	8021	05/24/14	505
Toluene	BDL	3.4	mg/kg	8021	05/24/14	505
Ethylbenzene	BDL	0.34	mg/kg	8021	05/24/14	505
m&p-Xylene	BDL	0.68	mg/kg	8021	05/24/14	505
o-Xylene	BDL	0.34	mg/kg	8021	05/24/14	505
Methyl tert-butyl ether	BDL	0.68	mg/kg	8021	05/24/14	505
Naphthalene	9.5	3.4	mg/kg	8021	05/24/14	505
1,3,5-Trimethylbenzene	1.5	0.68	mg/kg	8021	05/24/14	505
1,2,4-Trimethylbenzene	0.86	0.68	mg/kg	8021	05/24/14	505
TPH (GC/FID) Low Fraction	120	68.	mg/kg	8015	05/24/14	505
Surrogate recovery-%						
a,a,a-Trifluorotoluene (PID)	98.0		% Rec.	8021	05/24/14	505

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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The reported analytical results relate only to the sample submitted

Reported: 05/28/14 08:59 Printed: 05/28/14 08:59



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REPORT OF ANALYSIS

Peter Fredman
 Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

May 28, 2014

Date Received : May 23, 2014
 Description : CT2 6 Oil
 Sample ID : S-2 6IN
 Collected By : Josh V
 Collection Date : 05/22/14 11:14

ESC Sample # : L700815-02

Site ID :

Project # : CT2 6 Oil

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	77.6		%	2540 G-2011	05/24/14	1
PVOCGRO						
Benzene	BDL	0.13	mg/kg	8021	05/25/14	200
Toluene	BDL	1.3	mg/kg	8021	05/25/14	200
Ethylbenzene	1.5	0.13	mg/kg	8021	05/25/14	200
m&p-Xylene	1.5	0.26	mg/kg	8021	05/25/14	200
o-Xylene	1.4	0.13	mg/kg	8021	05/25/14	200
Methyl tert-butyl ether	BDL	0.26	mg/kg	8021	05/25/14	200
Naphthalene	24.	1.3	mg/kg	8021	05/25/14	200
1,3,5-Trimethylbenzene	13.	0.26	mg/kg	8021	05/25/14	200
1,2,4-Trimethylbenzene	7.1	0.26	mg/kg	8021	05/25/14	200
TPH (GC/FID) Low Fraction	620	26.	mg/kg	8015	05/25/14	200
Surrogate recovery-% a,a,a-Trifluorotoluene (PID)	98.7		% Rec.	8021	05/25/14	200

Results listed are dry weight basis.

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Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

May 28, 2014

Peter Fredman
 Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

Date Received : May 23, 2014
 Description : CT2 6 Oil
 Sample ID : S-3 6IN
 Collected By : Josh V
 Collection Date : 05/22/14 11:34

ESC Sample # : L700815-03

Site ID :

Project # : CT2 6 Oil

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	78.4		%	2540 G-2011	05/28/14	1
PVOCGRO						
Benzene	0.023	0.021	mg/kg	8021	05/25/14	32.5
Toluene	BDL	0.21	mg/kg	8021	05/25/14	32.5
Ethylbenzene	BDL	0.021	mg/kg	8021	05/25/14	32.5
m&p-Xylene	BDL	0.041	mg/kg	8021	05/25/14	32.5
o-Xylene	0.022	0.021	mg/kg	8021	05/25/14	32.5
Methyl tert-butyl ether	BDL	0.041	mg/kg	8021	05/25/14	32.5
Naphthalene	BDL	0.21	mg/kg	8021	05/25/14	32.5
1,3,5-Trimethylbenzene	BDL	0.041	mg/kg	8021	05/25/14	32.5
1,2,4-Trimethylbenzene	0.064	0.041	mg/kg	8021	05/25/14	32.5
TPH (GC/FID) Low Fraction	6.5	4.1	mg/kg	8015	05/25/14	32.5
Surrogate recovery-%						
a,a,a-Trifluorotoluene (PID)	97.8		% Rec.	8021	05/25/14	32.5

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

Peter Fredman
 Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

May 28, 2014

Date Received : May 23, 2014
 Description : CT2 6 Oil
 Sample ID : S-4 6IN
 Collected By : Josh V
 Collection Date : 05/22/14 11:50

ESC Sample # : L700815-04

Site ID :

Project # : CT2 6 Oil

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	78.5		%	2540 G-2011	05/28/14	1
PVOCGRO						
Benzene	0.020	0.020	mg/kg	8021	05/25/14	31.5
Toluene	BDL	0.20	mg/kg	8021	05/25/14	31.5
Ethylbenzene	0.020	0.020	mg/kg	8021	05/25/14	31.5
m&p-Xylene	BDL	0.040	mg/kg	8021	05/25/14	31.5
o-Xylene	BDL	0.020	mg/kg	8021	05/25/14	31.5
Methyl tert-butyl ether	BDL	0.040	mg/kg	8021	05/25/14	31.5
Naphthalene	1.4	0.20	mg/kg	8021	05/25/14	31.5
1,3,5-Trimethylbenzene	BDL	0.040	mg/kg	8021	05/25/14	31.5
1,2,4-Trimethylbenzene	0.13	0.040	mg/kg	8021	05/25/14	31.5
TPH (GC/FID) Low Fraction	9.8	4.0	mg/kg	8015	05/25/14	31.5
Surrogate recovery-% a,a,a-Trifluorotoluene (PID)	98.6		% Rec.	8021	05/25/14	31.5

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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REPORT OF ANALYSIS

May 28, 2014

Peter Fredman
 Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

Date Received : May 23, 2014
 Description : CT2 6 Oil
 Sample ID : S-5 6IN
 Collected By : Josh V
 Collection Date : 05/22/14 12:08

ESC Sample # : L700815-05

Site ID :

Project # : CT2 6 Oil

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	73.6		%	2540 G-2011	05/28/14	1
PVOCGRO						
Benzene	1.8	0.50	mg/kg	8021	05/25/14	735
Toluene	BDL	5.0	mg/kg	8021	05/25/14	735
Ethylbenzene	5.4	0.50	mg/kg	8021	05/25/14	735
m&p-Xylene	1.0	1.0	mg/kg	8021	05/25/14	735
o-Xylene	1.8	0.50	mg/kg	8021	05/25/14	735
Methyl tert-butyl ether	BDL	1.0	mg/kg	8021	05/25/14	735
Naphthalene	39.	5.0	mg/kg	8021	05/25/14	735
1,3,5-Trimethylbenzene	13.	1.0	mg/kg	8021	05/25/14	735
1,2,4-Trimethylbenzene	6.2	1.0	mg/kg	8021	05/25/14	735
TPH (GC/FID) Low Fraction	980	100	mg/kg	8015	05/25/14	735
Surrogate recovery-%						
a,a,a-Trifluorotoluene (PID)	98.0		% Rec.	8021	05/25/14	735

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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Reported: 05/28/14 08:59 Printed: 05/28/14 08:59

Summary of Remarks For Samples Printed
05/28/14 at 08:59:42

TSR Signing Reports: 341
R4 - Rush: Three Day

Sample: L700815-01 Account: MUROILSWI Received: 05/23/14 10:00 Due Date: 05/29/14 00:00 RPT Date: 05/28/14 08:59
Sample: L700815-02 Account: MUROILSWI Received: 05/23/14 10:00 Due Date: 05/29/14 00:00 RPT Date: 05/28/14 08:59
Sample: L700815-03 Account: MUROILSWI Received: 05/23/14 10:00 Due Date: 05/29/14 00:00 RPT Date: 05/28/14 08:59
Sample: L700815-04 Account: MUROILSWI Received: 05/23/14 10:00 Due Date: 05/29/14 00:00 RPT Date: 05/28/14 08:59
Sample: L700815-05 Account: MUROILSWI Received: 05/23/14 10:00 Due Date: 05/29/14 00:00 RPT Date: 05/28/14 08:59



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Calumet Specialty Products
Peter Fredman
2407 Stinson Avenue

Superior, WI 54880

Quality Assurance Report
Level II

L700815

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May 28, 2014

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Total Solids	< .1	%			WG722800	05/24/14 11:13
1,2,4-Trimethylbenzene	< .001	mg/kg			WG722805	05/24/14 14:29
1,3,5-Trimethylbenzene	< .001	mg/kg			WG722805	05/24/14 14:29
Benzene	< .0005	mg/kg			WG722805	05/24/14 14:29
Ethylbenzene	< .0005	mg/kg			WG722805	05/24/14 14:29
m&p-Xylene	< .001	mg/kg			WG722805	05/24/14 14:29
Methyl tert-butyl ether	< .001	mg/kg			WG722805	05/24/14 14:29
Naphthalene	< .005	mg/kg			WG722805	05/24/14 14:29
o-Xylene	< .0005	mg/kg			WG722805	05/24/14 14:29
Toluene	< .005	mg/kg			WG722805	05/24/14 14:29
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG722805	05/24/14 14:29
a,a,a-Trifluorotoluene(PID)		% Rec.	99.60	80-120	WG722805	05/24/14 14:29
Total Solids	< .1	%			WG722853	05/28/14 06:21

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate	RPD				
Total Solids	%	82.6	81.7	1.12	5	L700755-05	WG722800	
Total Solids	%	75.6	76.0	0.521	5	L700855-04	WG722853	

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Total Solids	%	50	50.0	100.	85-115	WG722800
1,2,4-Trimethylbenzene	mg/kg	.05	0.0512	102.	80-120	WG722805
1,3,5-Trimethylbenzene	mg/kg	.05	0.0507	101.	80-120	WG722805
Benzene	mg/kg	.05	0.0525	105.	80-120	WG722805
Ethylbenzene	mg/kg	.05	0.0518	104.	80-120	WG722805
m&p-Xylene	mg/kg	.1	0.105	105.	80-120	WG722805
Methyl tert-butyl ether	mg/kg	.05	0.0527	105.	80-120	WG722805
Naphthalene	mg/kg	.05	0.0509	102.	80-120	WG722805
o-Xylene	mg/kg	.05	0.0507	101.	80-120	WG722805
Toluene	mg/kg	.05	0.0503	101.	80-120	WG722805
a,a,a-Trifluorotoluene(PID)				100.0	80-120	WG722805
TPH (GC/FID) Low Fraction	mg/kg	.5	0.469	93.7	80-120	WG722805
a,a,a-Trifluorotoluene(PID)				100.0	80-120	WG722805
Total Solids	%	50	50.0	100.	85-115	WG722853

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
1,2,4-Trimethylbenzene	mg/kg	0.0516	0.0512	103.	80-120	0.630	20	WG722805
1,3,5-Trimethylbenzene	mg/kg	0.0516	0.0507	103.	80-120	1.84	20	WG722805
Benzene	mg/kg	0.0541	0.0525	108.	80-120	3.11	20	WG722805
Ethylbenzene	mg/kg	0.0533	0.0518	107.	80-120	2.89	20	WG722805
m&p-Xylene	mg/kg	0.107	0.105	107.	80-120	1.39	20	WG722805
Methyl tert-butyl ether	mg/kg	0.0529	0.0527	106.	80-120	0.390	20	WG722805
Naphthalene	mg/kg	0.0536	0.0509	107.	80-120	5.24	20	WG722805
o-Xylene	mg/kg	0.0517	0.0507	103.	80-120	2.01	20	WG722805

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Toluene	mg/kg	0.0517	0.0503	103.	80-120	2.78	20	WG722805
a,a,a-Trifluorotoluene(PID)				98.50	80-120			WG722805
TPH (GC/FID) Low Fraction	mg/kg	0.448	0.469	90.0	80-120	4.51	20	WG722805
a,a,a-Trifluorotoluene(PID)				98.50	80-120			WG722805

Analyte	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
1,2,4-Trimethylbenzene	mg/kg	1.16	0.00765	.05	92.0	80-120	L700389-01	WG722805
1,3,5-Trimethylbenzene	mg/kg	1.14	0.00540	.05	91.0	80-120	L700389-01	WG722805
Benzene	mg/kg	1.19	0.0	.05	95.0	32-137	L700389-01	WG722805
Ethylbenzene	mg/kg	1.17	0.00334	.05	93.0	10-150	L700389-01	WG722805
m&p-Xylene	mg/kg	2.37	0.00748	.1	94.0	14-141	L700389-01	WG722805
Methyl tert-butyl ether	mg/kg	1.08	0.00500	.05	86.0	24-151	L700389-01	WG722805
Naphthalene	mg/kg	1.01	0.0117	.05	80.0	80-120	L700389-01	WG722805
o-Xylene	mg/kg	1.14	0.00442	.05	91.0	10-157	L700389-01	WG722805
Toluene	mg/kg	1.13	0.00451	.05	90.0	20-142	L700389-01	WG722805
a,a,a-Trifluorotoluene(PID)					101.0	80-120		WG722805
TPH (GC/FID) Low Fraction	mg/kg	11.9	0.00167	.5	95.0	80-120	L700389-01	WG722805
a,a,a-Trifluorotoluene(PID)					101.0	80-120		WG722805

Analyte	Units	MSD	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec						
1,2,4-Trimethylbenzene	mg/kg	1.28	1.16	102.	80-120	9.88	20	L700389-01	WG722805	
1,3,5-Trimethylbenzene	mg/kg	1.26	1.14	100.	80-120	9.99	20	L700389-01	WG722805	
Benzene	mg/kg	1.31	1.19	104.	32-137	9.60	39	L700389-01	WG722805	
Ethylbenzene	mg/kg	1.29	1.17	103.	10-150	9.74	44	L700389-01	WG722805	
m&p-Xylene	mg/kg	2.61	2.37	104.	14-141	9.84	44	L700389-01	WG722805	
Methyl tert-butyl ether	mg/kg	1.26	1.08	100.	24-151	15.8	37	L700389-01	WG722805	
Naphthalene	mg/kg	1.20	1.01	95.2	80-120	17.1	20	L700389-01	WG722805	
o-Xylene	mg/kg	1.26	1.14	100.	10-157	9.87	44	L700389-01	WG722805	
Toluene	mg/kg	1.25	1.13	99.9	20-142	9.88	42	L700389-01	WG722805	
a,a,a-Trifluorotoluene(PID)				101.0	80-120				WG722805	
TPH (GC/FID) Low Fraction	mg/kg	12.9	11.9	103.	80-120	7.86	20	L700389-01	WG722805	
a,a,a-Trifluorotoluene(PID)				101.0	80-120				WG722805	

Batch number /Run number / Sample number cross reference

WG722800: R2927667: L700815-01 02
WG722805: R2928832: L700815-01 02 03 04 05
WG722853: R2929088: L700815-03 04 05

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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May 28, 2014

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

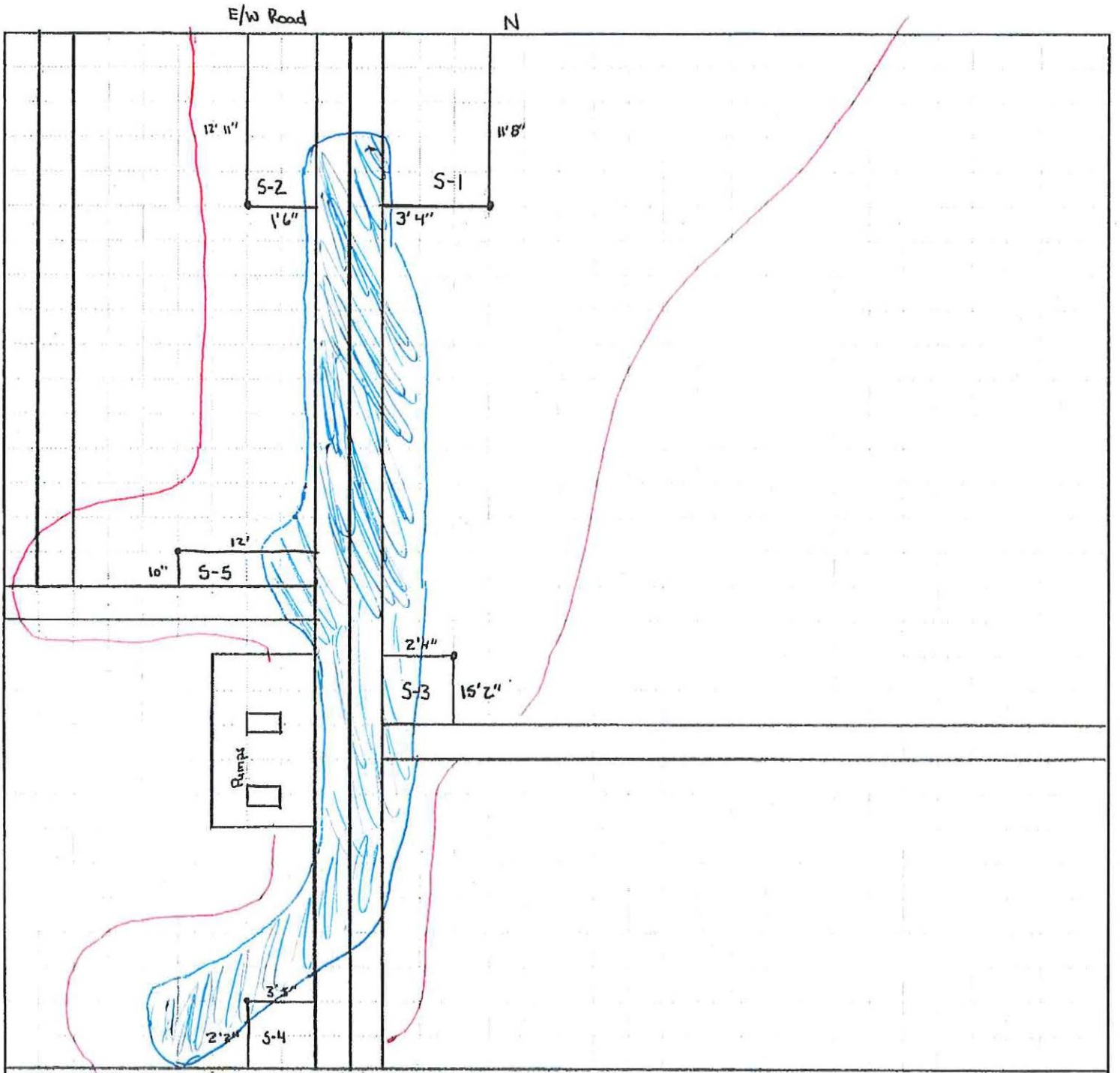
DATE: 5-22-14

SHEET _____ OF _____



BY: Riley Lealos - Soil Sample Locations

MURPHY OIL USA, INC.

Superior Refinery



E/W Road

-  - Approximate Area of spill
-  - Excavation Extent

Sager, John E - DNR

From: Peter Fredman <Peter.Fredman@calumetspecialty.com>
Sent: Thursday, June 05, 2014 15:35
To: Sager, John E - DNR
Subject: SERTS ID 20131226NO16-1 Update
Attachments: 060314 CT2 6OIL Spill Round 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

John,
We completed additional remediation including excavation of 5 cubic yards of soil in the area of S-5 on 6/3/14. The sample results taken at the new lower depth are included.
In addition, a geoprobe was used in conjunction with an 11.7eV PID on 6/5/14 to determine the extent of contamination.
Let me know if you have any questions.

Peter Fredman
Environmental Engineer
Phone: 715-398-8434
Fax: 715-398-8209



Company Name/Address:
Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

Billing Information:
 David Beattie
 2407 Stinson Avenue
 Superior, WI 54880

Analysis/Container/Preservative
 PVOCLGRO 60ml Amb/MeOH
 TS 2oz CLR - No Pres

Chain of Custody
 Page 1 of 1

E111

ESC
 L-A-B S-C-I-E-N-C-E-S

12065 Lebanon Road
 Mt. Juliet, TN 37122

Phone: (800) 767-5859
 Phone: (615) 758-5858
 Fax: (615) 758-5859

Report to: **Peter Fredman**

Email to: **Peter.fredman@clmt.com**

Project Description: **CT2 #6 Oil**

City/State Collected: **Superior / WI**

Phone: (715) 398-8455
 FAX: (715) 398-8209

Client Project #:

ESC Key:

Collected by: (print) **Cliff Wright**

Site/Facility ID#:

P.O.#: **67981**

Collected by (signature):
 Immediately Packed on Ice N ___ Y **X**

Rush? (Lab MUST Be Notified)
 Same Day.....200%
 Next Day.....100%
 Two Day.....50%
 Three Day.....25%

Date Results Needed:
 Email? ___No___Yes
 FAX? ___No___Yes

No. of Cntrs

CoCode **MUROILSW** (lab use only)
 Template/Prelogin
 Shipped Via: **FedEx**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Analysis/Container/Preservative						
S-5-2	Grab	SS	5'6"	6-3-2014	14:10	2	X	X					

Remarks/Contaminant: **PID 50ppmv**

Sample # (lab only): **L702393-01**

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other _____

Remarks: _____

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature) <i>[Signature]</i>	Date: 6-3-14	Time: 14:16	Received by: (Signature) <i>[Signature]</i>	Samples returned via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Courier	Condition: (lab use only) OK
Relinquished by: (Signature) <i>[Signature]</i>	Date: 6-3-14	Time: 15:30	Received by: (Signature) <i>[Signature]</i>	Temp: 2.4°C	Bottles Received: 2
Relinquished by: (Signature) <i>[Signature]</i>	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: 6-4-14	Time: 0900
				pH Checked:	NCF:



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Est. 1970

Peter Fredman
Calumet Specialty Products
2407 Stinson Avenue
Superior, WI 54880

Report Summary

Thursday June 05, 2014

Report Number: L702393

Samples Received: 06/04/14

Client Project:

Description: CT2 #6 Oil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jimmy Hunt, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

Peter Fredman
 Calumet Specialty Products
 2407 Stinson Avenue
 Superior, WI 54880

June 05, 2014

Date Received : June 04, 2014
 Description : CT2 #6 Oil
 Sample ID : S-5-2 5-6IN
 Collected By : Cliff Wright
 Collection Date : 06/03/14 14:10

ESC Sample # : L702393-01

Site ID :

Project # :

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	76.6		%	2540 G-2011	06/05/14	1
PVOCGRO						
Benzene	0.84	0.037	mg/kg	8021	06/04/14	56.75
Toluene	BDL	0.37	mg/kg	8021	06/04/14	56.75
Ethylbenzene	1.2	0.037	mg/kg	8021	06/04/14	56.75
m&p-Xylene	0.12	0.074	mg/kg	8021	06/04/14	56.75
o-Xylene	0.27	0.037	mg/kg	8021	06/04/14	56.75
Methyl tert-butyl ether	0.17	0.074	mg/kg	8021	06/04/14	56.75
Naphthalene	BDL	0.37	mg/kg	8021	06/04/14	56.75
1,3,5-Trimethylbenzene	1.1	0.074	mg/kg	8021	06/04/14	56.75
1,2,4-Trimethylbenzene	0.73	0.074	mg/kg	8021	06/04/14	56.75
TPH (GC/FID) Low Fraction	130	7.4	mg/kg	8015	06/04/14	56.75
Surrogate recovery-%						
a,a,a-Trifluorotoluene (PID)	98.9		% Rec.	8021	06/04/14	56.75

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

This report shall not be reproduced, except in full, without the written approval from ESC.

The reported analytical results relate only to the sample submitted

Reported: 06/05/14 08:50 Printed: 06/05/14 08:51

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L702393-01	WG724512	SAMP	Naphthalene	R2934106	J5
	WG724512	SAMP	1,3,5-Trimethylbenzene	R2934106	J5
	WG724512	SAMP	1,2,4-Trimethylbenzene	R2934106	J5
	WG724512	SAMP	TPH (GC/FID) Low Fraction	R2934106	J5

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound:** Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
06/05/14 at 08:51:10

TSR Signing Reports: 341
R1 - Rush: Sameday

Sample: L702393-01 Account: MUROILSWI Received: 06/04/14 09:00 Due Date: 06/05/14 00:00 RPT Date: 06/05/14 08:50



L.A.B S.C.I.E.N.C.E.S

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
1,2,4-Trimethylbenzene	< .001	mg/kg			WG724512	06/04/14 12:29
1,3,5-Trimethylbenzene	< .001	mg/kg			WG724512	06/04/14 12:29
Benzene	< .0005	mg/kg			WG724512	06/04/14 12:29
Ethylbenzene	< .0005	mg/kg			WG724512	06/04/14 12:29
m&p-Xylene	< .001	mg/kg			WG724512	06/04/14 12:29
Methyl tert-butyl ether	< .001	mg/kg			WG724512	06/04/14 12:29
Naphthalene	< .005	mg/kg			WG724512	06/04/14 12:29
o-Xylene	< .0005	mg/kg			WG724512	06/04/14 12:29
Toluene	< .005	mg/kg			WG724512	06/04/14 12:29
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG724512	06/04/14 12:29
a,a,a-Trifluorotoluene(PID)		% Rec.	98.70	80-120	WG724512	06/04/14 12:29
Total Solids	< .1	%			WG724509	06/05/14 07:40

Analyte	Units	Duplicate			Limit	Ref Samp	Batch
		Result	Duplicate	RPD			
Total Solids	%	74.9	76.6	2.21	5	L702393-01	WG724509

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1,2,4-Trimethylbenzene	mg/kg	.05	0.0484	96.8	80-120	WG724512
1,3,5-Trimethylbenzene	mg/kg	.05	0.0479	95.9	80-120	WG724512
Benzene	mg/kg	.05	0.0486	97.3	80-120	WG724512
Ethylbenzene	mg/kg	.05	0.0489	97.7	80-120	WG724512
m&p-Xylene	mg/kg	.1	0.0979	97.9	80-120	WG724512
Methyl tert-butyl ether	mg/kg	.05	0.0493	98.6	80-120	WG724512
Naphthalene	mg/kg	.05	0.0485	97.1	80-120	WG724512
o-Xylene	mg/kg	.05	0.0476	95.2	80-120	WG724512
Toluene	mg/kg	.05	0.0468	93.7	80-120	WG724512
a,a,a-Trifluorotoluene(PID)				101.0	80-120	WG724512
TPH (GC/FID) Low Fraction	mg/kg	.5	0.414	82.8	80-120	WG724512
a,a,a-Trifluorotoluene(PID)				101.0	80-120	WG724512
Total Solids	%	50	50.0	100.	85-115	WG724509

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
1,2,4-Trimethylbenzene	mg/kg	0.0515	0.0484	103.	80-120	6.21	20	WG724512
1,3,5-Trimethylbenzene	mg/kg	0.0506	0.0479	101.	80-120	5.48	20	WG724512
Benzene	mg/kg	0.0509	0.0486	102.	80-120	4.56	20	WG724512
Ethylbenzene	mg/kg	0.0515	0.0489	103.	80-120	5.17	20	WG724512
m&p-Xylene	mg/kg	0.103	0.0979	103.	80-120	5.40	20	WG724512
Methyl tert-butyl ether	mg/kg	0.0524	0.0493	105.	80-120	6.14	20	WG724512
Naphthalene	mg/kg	0.0507	0.0485	101.	80-120	4.32	20	WG724512
o-Xylene	mg/kg	0.0503	0.0476	100.	80-120	5.51	20	WG724512
Toluene	mg/kg	0.0493	0.0468	98.0	80-120	5.10	20	WG724512
a,a,a-Trifluorotoluene(PID)				98.90	80-120			WG724512
TPH (GC/FID) Low Fraction	mg/kg	0.475	0.414	95.0	80-120	13.8	20	WG724512
a,a,a-Trifluorotoluene(PID)				98.90	80-120			WG724512

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
1,2,4-Trimethylbenzene	mg/kg	4.47	0.559	.05	140.*	80-120	L702393-01	WG724512

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Units	MS Res	Matrix Spike			% Rec	Limit	Ref Samp	Batch
			Ref Res	TV					
1,3,5-Trimethylbenzene	mg/kg	4.79	0.867	.05	140.*	80-120	L702393-01	WG724512	
Benzene	mg/kg	3.14	0.636	.05	88.0	32-137	L702393-01	WG724512	
Ethylbenzene	mg/kg	3.80	0.937	.05	100.	10-150	L702393-01	WG724512	
m&p-Xylene	mg/kg	5.68	0.0913	.1	98.0	14-141	L702393-01	WG724512	
Methyl tert-butyl ether	mg/kg	2.52	0.128	.05	84.0	24-151	L702393-01	WG724512	
Naphthalene	mg/kg	6.62	0.0	.05	230.*	80-120	L702393-01	WG724512	
o-Xylene	mg/kg	2.84	0.213	.05	93.0	10-157	L702393-01	WG724512	
Toluene	mg/kg	2.80	0.216	.05	91.0	20-142	L702393-01	WG724512	
a,a,a-Trifluorotoluene(PID)					101.0	80-120		WG724512	
TPH (GC/FID) Low Fraction	mg/kg	136.	101.	.5	120.*	80-120	L702393-01	WG724512	
a,a,a-Trifluorotoluene(PID)					101.0	80-120		WG724512	

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
1,2,4-Trimethylbenzene	mg/kg	4.66	4.47	144.*	80-120	4.02	20	L702393-01	WG724512
1,3,5-Trimethylbenzene	mg/kg	4.99	4.79	145.*	80-120	4.07	20	L702393-01	WG724512
Benzene	mg/kg	3.32	3.14	94.5	32-137	5.47	39	L702393-01	WG724512
Ethylbenzene	mg/kg	4.01	3.80	108.	10-150	5.27	44	L702393-01	WG724512
m&p-Xylene	mg/kg	5.98	5.68	104.	14-141	5.12	44	L702393-01	WG724512
Methyl tert-butyl ether	mg/kg	2.72	2.52	91.2	24-151	7.37	37	L702393-01	WG724512
Naphthalene	mg/kg	7.09	6.62	250.*	80-120	6.91	20	L702393-01	WG724512
o-Xylene	mg/kg	2.98	2.84	97.4	10-157	4.72	44	L702393-01	WG724512
Toluene	mg/kg	2.95	2.80	96.3	20-142	5.10	42	L702393-01	WG724512
a,a,a-Trifluorotoluene(PID)				99.30	80-120				WG724512
TPH (GC/FID) Low Fraction	mg/kg	130.	136.	103.	80-120	4.13	20	L702393-01	WG724512
a,a,a-Trifluorotoluene(PID)				99.30	80-120				WG724512

Batch number /Run number / Sample number cross reference

WG724512: R2934106: L702393-01
WG724509: R2934628: L702393-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.