

Sager, John E - DNR

From: Peter Fredman <Peter.Fredman@calumetspecialty.com>
Sent: Wednesday, July 25, 2012 3:46 PM
To: Sager, John E - DNR
Subject: Soil Sample Results - 3/22/12 Tank 34
Attachments: Tank 34 Slop Line Samples Round 2.pdf

John,

I finally have the sample results for the Slop oil line leak at Tank 34. Sorry it took so long to get these to you.

The excavation was under water for most of June.

Sample location is central South side if you still have your map.

Let me know if you have any questions.

Thanks,

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

Report to: Peter Fredman

Email to: peter.fredman@csmt.com

Project Description: Slopeline Leak

City/State Collected: Superior, WI

Phone: (715) 398-8455

Client Project #:


ESC Key:

FAX: (715) 398-8209

Collected by: (print) Matthew Unzicker

Site/Facility ID#:

P.O.#: 12100019

Collected by (signature): 

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

Sample ID

Comp/Grab

Depth

Date

Time

T34-SW-S-2A
T34-BB-S-2A

Grab
Grab

2ft
7ft

7-12-12
7-12-12

1000
1100

Analysis/Container/Preservative

DRUM 60ml/mb/McCl/5yr
PVOC GRO 60ml/mb/McOH/5yr
TS 202 Cln-NoPas/PAH

CoCode MUOILSW (lab-use only)

Template/Prelogin

Shipped Via: FedEx

Remarks/Contaminant

L S80S2
02

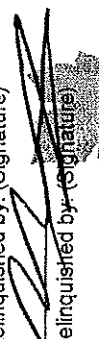
Sample # (lab only)

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

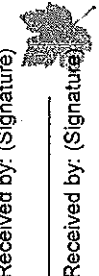
pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquished by: (Signature) 

Date: 7-12-12 Time: 1200

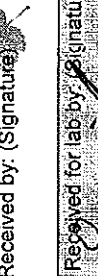
Received by: (Signature) 

Samples returned via: FedEx Courier UPS

Condition: (lab-use only) OIC
 CoC Seals Intact Y ___ N ___ NA
 pH Checked: NCF

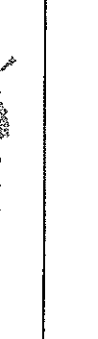
Relinquished by: (Signature) 

Date: _____ Time: _____

Received by: (Signature) 

Temp: 31C Bottles Received: 8

Date: 7-20-12 Time: 0900

Relinquished by: (Signature) 

Date: _____ Time: _____

Received for lab by: (Signature) 

Date: 7-20-12 Time: 0900

pH Checked: NCF



L-A-B S-C-I-E-N-C-E-S
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Peter Fredman
Calumet Specialty Products
2407 Stinson Avenue
Superior, WI 54880

Report Summary

Tuesday July 24, 2012

Report Number: L586052

Samples Received: 07/20/12

Client Project:

Description: Slopline Leak

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

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

July 24, 2012

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

ESC Sample # : L586052-01

Date Received : July 20, 2012
 Description : Slopline Leak
 Sample ID : T34-SW-S-2 FT
 Collected By : Matthew Unzeitig
 Collection Date : 07/19/12 10:00

Site ID :

Project # :

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	95.9	0.100	%	2540G	07/23/12	1
PVOCGRO						
Benzene	BDL	0.048	mg/kg	8021	07/21/12	91.5
Toluene	BDL	0.48	mg/kg	8021	07/21/12	91.5
Ethylbenzene	BDL	0.048	mg/kg	8021	07/21/12	91.5
m&p-Xylene	BDL	0.095	mg/kg	8021	07/21/12	91.5
o-Xylene	BDL	0.048	mg/kg	8021	07/21/12	91.5
Methyl tert-butyl ether	BDL	0.095	mg/kg	8021	07/21/12	91.5
Naphthalene	BDL	0.48	mg/kg	8021	07/21/12	91.5
1,3,5-Trimethylbenzene	BDL	0.095	mg/kg	8021	07/21/12	91.5
1,2,4-Trimethylbenzene	BDL	0.095	mg/kg	8021	07/21/12	91.5
Gasoline (C6-C10)	BDL	9.5	mg/kg	8015	07/21/12	91.5
Surrogate recovery-% a,a,a-Trifluorotoluene (PID)	102.		% Rec.	8021	07/21/12	91.5
TPH (GC/FID) High Fraction	19.	13.	mg/kg	DROWM/8015M	07/23/12	1.6
Surrogate recovery(%) Triacontane	75.7		% Rec.	DROWM/8015M	07/23/12	1.6
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.034	mg/kg	8270C	07/23/12	1
Acenaphthene	BDL	0.034	mg/kg	8270C	07/23/12	1
Acenaphthylene	BDL	0.034	mg/kg	8270C	07/23/12	1
Benzo(a)anthracene	BDL	0.034	mg/kg	8270C	07/23/12	1
Benzo(a)pyrene	BDL	0.034	mg/kg	8270C	07/23/12	1
Benzo(b)fluoranthene	BDL	0.034	mg/kg	8270C	07/23/12	1
Benzo(g,h,i)perylene	BDL	0.034	mg/kg	8270C	07/23/12	1
Benzo(k)fluoranthene	BDL	0.034	mg/kg	8270C	07/23/12	1
Chrysene	BDL	0.034	mg/kg	8270C	07/23/12	1
Dibenz(a,h)anthracene	BDL	0.034	mg/kg	8270C	07/23/12	1
Fluoranthene	BDL	0.034	mg/kg	8270C	07/23/12	1
Fluorene	BDL	0.034	mg/kg	8270C	07/23/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.034	mg/kg	8270C	07/23/12	1
Naphthalene	BDL	0.034	mg/kg	8270C	07/23/12	1
Phenanthrene	BDL	0.034	mg/kg	8270C	07/23/12	1
Pyrene	BDL	0.034	mg/kg	8270C	07/23/12	1
Surrogate Recovery						
Nitrobenzene-d5	73.6		% Rec.	8270C	07/23/12	1
2-Fluorobiphenyl	79.9		% Rec.	8270C	07/23/12	1
p-Terphenyl-d14	80.2		% Rec.	8270C	07/23/12	1

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 07/24/12 16:10 Printed: 07/24/12 16:10

L586052-01 (PVOCGRO) - Lowest possible dilution due to dilution factor.



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REPORT OF ANALYSIS

July 24, 2012

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

Date Received : July 20, 2012
 Description : Slopline Leak
 Sample ID : T34-B-S-7 FT
 Collected By : Matthew Unzeitig
 Collection Date : 07/19/12 11:00

ESC Sample # : L586052-02

Site ID :

Project # :

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	76.6	0.100	%	2540G	07/23/12	1
PVOCGRO						
Benzene	BDL	0.059	mg/kg	8021	07/21/12	91
Toluene	BDL	0.59	mg/kg	8021	07/21/12	91
Ethylbenzene	BDL	0.059	mg/kg	8021	07/21/12	91
m&p-Xylene	BDL	0.12	mg/kg	8021	07/21/12	91
o-Xylene	BDL	0.059	mg/kg	8021	07/21/12	91
Methyl tert-butyl ether	BDL	0.12	mg/kg	8021	07/21/12	91
Naphthalene	BDL	0.59	mg/kg	8021	07/21/12	91
1,3,5-Trimethylbenzene	BDL	0.12	mg/kg	8021	07/21/12	91
1,2,4-Trimethylbenzene	BDL	0.12	mg/kg	8021	07/21/12	91
Gasoline (C6-C10)	BDL	12.	mg/kg	8015	07/21/12	91
Surrogate recovery-% a, a, a-Trifluorotoluene (PID)	101.		% Rec.	8021	07/21/12	91
TPH (GC/FID) High Fraction	BDL	16.	mg/kg	DROWM/8015M	07/23/12	1.5
Surrogate recovery(%) Triacotane	73.9		% Rec.	DROWM/8015M	07/23/12	1.5
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.043	mg/kg	8270C	07/23/12	1
Acenaphthene	BDL	0.043	mg/kg	8270C	07/23/12	1
Acenaphthylene	BDL	0.043	mg/kg	8270C	07/23/12	1
Benzo(a)anthracene	BDL	0.043	mg/kg	8270C	07/23/12	1
Benzo(a)pyrene	BDL	0.043	mg/kg	8270C	07/23/12	1
Benzo(b)fluoranthene	BDL	0.043	mg/kg	8270C	07/23/12	1
Benzo(g,h,i)perylene	BDL	0.043	mg/kg	8270C	07/23/12	1
Benzo(k)fluoranthene	BDL	0.043	mg/kg	8270C	07/23/12	1
Chrysene	BDL	0.043	mg/kg	8270C	07/23/12	1
Dibenz(a,h)anthracene	BDL	0.043	mg/kg	8270C	07/23/12	1
Fluoranthene	BDL	0.043	mg/kg	8270C	07/23/12	1
Fluorene	BDL	0.043	mg/kg	8270C	07/23/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.043	mg/kg	8270C	07/23/12	1
Naphthalene	BDL	0.043	mg/kg	8270C	07/23/12	1
Phenanthrene	BDL	0.043	mg/kg	8270C	07/23/12	1
Pyrene	BDL	0.043	mg/kg	8270C	07/23/12	1
Surrogate Recovery						
Nitrobenzene-d5	63.1		% Rec.	8270C	07/23/12	1
2-Fluorobiphenyl	62.6		% Rec.	8270C	07/23/12	1
p-Terphenyl-d14	53.5		% Rec.	8270C	07/23/12	1

Results listed are dry weight basis.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

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Reported: 07/24/12 16:10 Printed: 07/24/12 16:10

L586052-02 (PVOCGRO) - Lowest possible dilution due to dilution factor.

Summary of Remarks For Samples Printed
07/24/12 at 16:10:54

TSR Signing Reports: 341
R4 - Rush: Three Day

Sample: L586052-01 Account: MUROILSWI Received: 07/20/12 09:00 Due Date: 07/25/12 00:00 RPT Date: 07/24/12 16:10

Sample: L586052-02 Account: MUROILSWI Received: 07/20/12 09:00 Due Date: 07/25/12 00:00 RPT Date: 07/24/12 16:10



YOUR LAB OF CHOICE

Calumet Specialty Products
Peter Fredman
2407 Stinson Avenue

Superior, WI 54880

Quality Assurance Report
Level II

L586052

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July 24, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
1,2,4-Trimethylbenzene	< .001	mg/kg			WG603760	07/21/12 22:37
1,3,5-Trimethylbenzene	< .001	mg/kg			WG603760	07/21/12 22:37
Benzene	< .0005	mg/kg			WG603760	07/21/12 22:37
Ethylbenzene	< .0005	mg/kg			WG603760	07/21/12 22:37
Gasoline (C6-C10)	< .1	mg/kg			WG603760	07/21/12 22:37
m&p-Xylene	< .001	mg/kg			WG603760	07/21/12 22:37
Methyl tert-butyl ether	< .001	mg/kg			WG603760	07/21/12 22:37
Naphthalene	< .005	mg/kg			WG603760	07/21/12 22:37
o-Xylene	< .0005	mg/kg			WG603760	07/21/12 22:37
Toluene	< .005	mg/kg			WG603760	07/21/12 22:37
a,a,a-Trifluorotoluene (PID)		% Rec.	101.7	80-120	WG603760	07/21/12 22:37
Total Solids	< .1	%			WG603368	07/23/12 09:27
Acenaphthene	< .033	mg/kg			WG603795	07/23/12 15:34
Acenaphthylene	< .033	mg/kg			WG603795	07/23/12 15:34
Anthracene	< .033	mg/kg			WG603795	07/23/12 15:34
Benzo (a) anthracene	< .033	mg/kg			WG603795	07/23/12 15:34
Benzo (a) pyrene	< .033	mg/kg			WG603795	07/23/12 15:34
Benzo (b) fluoranthene	< .033	mg/kg			WG603795	07/23/12 15:34
Benzo (g,h,i) perylene	< .033	mg/kg			WG603795	07/23/12 15:34
Benzo (k) fluoranthene	< .033	mg/kg			WG603795	07/23/12 15:34
Chrysene	< .033	mg/kg			WG603795	07/23/12 15:34
Dibenz (a,h) anthracene	< .033	mg/kg			WG603795	07/23/12 15:34
Fluoranthene	< .033	mg/kg			WG603795	07/23/12 15:34
Fluorene	< .033	mg/kg			WG603795	07/23/12 15:34
Indeno (1,2,3-cd) pyrene	< .033	mg/kg			WG603795	07/23/12 15:34
Naphthalene	< .033	mg/kg			WG603795	07/23/12 15:34
Phenanthrene	< .033	mg/kg			WG603795	07/23/12 15:34
Pyrene	< .033	mg/kg			WG603795	07/23/12 15:34
2-Fluorobiphenyl		% Rec.	72.08	37-119	WG603795	07/23/12 15:34
Nitrobenzene-d5		% Rec.	69.51	20-114	WG603795	07/23/12 15:34
p-Terphenyl-d14		% Rec.	77.70	15-174	WG603795	07/23/12 15:34
TPH (GC/FID) High Fraction	< 4	ppm			WG603384	07/23/12 16:48
Triacontane		% Rec.	79.33	50-150	WG603384	07/23/12 16:48

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Total Solids	%	77.0	76.7	0.121	5	L586052-02	WG603368

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1,2,4-Trimethylbenzene	mg/kg	.05	0.0548	110.	80-120	WG603760
1,3,5-Trimethylbenzene	mg/kg	.05	0.0536	107.	80-120	WG603760
Benzene	mg/kg	.05	0.0505	101.	76-113	WG603760
Ethylbenzene	mg/kg	.05	0.0506	101.	78-115	WG603760
Gasoline (C6-C10)	mg/kg	.5	0.484	96.8	80-120	WG603760
m&p-Xylene	mg/kg	.1	0.106	106.	81-120	WG603760
Methyl tert-butyl ether	mg/kg	.05	0.0453	90.7	37-145	WG603760
Naphthalene	mg/kg	.05	0.0590	118.	80-120	WG603760
o-Xylene	mg/kg	.05	0.0523	105.	79-115	WG603760
Toluene	mg/kg	.05	0.0514	103.	76-114	WG603760
a,a,a-Trifluorotoluene (PID)				103.1	80-120	WG603760

* 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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L586052

July 24, 2012

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Total Solids	%	50	50.0	100.	85-115	WG603368
Acenaphthene	mg/kg	.167	0.116	69.5	55-96	WG603795
Acenaphthylene	mg/kg	.167	0.110	66.1	61-107	WG603795
Anthracene	mg/kg	.167	0.128	76.5	58-105	WG603795
Benzo(a)anthracene	mg/kg	.167	0.134	80.3	56-103	WG603795
Benzo(a)pyrene	mg/kg	.167	0.139	83.4	57-103	WG603795
Benzo(b)fluoranthene	mg/kg	.167	0.132	79.0	52-106	WG603795
Benzo(g,h,i)perylene	mg/kg	.167	0.138	82.5	47-112	WG603795
Benzo(k)fluoranthene	mg/kg	.167	0.134	80.5	53-104	WG603795
Chrysene	mg/kg	.167	0.133	79.5	55-102	WG603795
Dibenz(a,h)anthracene	mg/kg	.167	0.146	87.4	49-111	WG603795
Fluoranthene	mg/kg	.167	0.117	70.0	59-108	WG603795
Fluorene	mg/kg	.167	0.113	67.5	59-100	WG603795
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.141	84.2	50-110	WG603795
Naphthalene	mg/kg	.167	0.114	68.3	55-91	WG603795
Phenanthrene	mg/kg	.167	0.121	72.3	55-103	WG603795
Pyrene	mg/kg	.167	0.132	79.2	54-104	WG603795
2-Fluorobiphenyl				68.07	37-119	WG603795
Nitrobenzene-d5				68.74	20-114	WG603795
p-Terphenyl-d14				77.12	15-174	WG603795
TPH (GC/FID) High Fraction	mg/kg	40	30.8	77.0	70-120	WG603384
Triacontane				70.59	50-150	WG603384

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
1,2,4-Trimethylbenzene	mg/kg	0.0537	0.0548	107.	80-120	2.05	20	WG603760
1,3,5-Trimethylbenzene	mg/kg	0.0527	0.0536	105.	80-120	1.61	20	WG603760
Benzene	mg/kg	0.0504	0.0505	101.	76-113	0.130	20	WG603760
Ethylbenzene	mg/kg	0.0500	0.0506	100.	78-115	1.05	20	WG603760
Gasoline (C6-C10)	mg/kg	0.534	0.484	107.	80-120	9.82	20	WG603760
m&p-Xylene	mg/kg	0.104	0.106	104.	81-120	2.09	20	WG603760
Methyl tert-butyl ether	mg/kg	0.0469	0.0453	94.0	37-145	3.47	24	WG603760
Naphthalene	mg/kg	0.0582	0.0590	116.	80-120	1.34	20	WG603760
o-Xylene	mg/kg	0.0522	0.0523	104.	79-115	0.350	20	WG603760
Toluene	mg/kg	0.0512	0.0514	102.	76-114	0.410	20	WG603760
a,a,a-Trifluorotoluene (PID)				102.0	80-120			WG603760
Acenaphthene	mg/kg	0.125	0.116	75.0	55-96	7.25	20	WG603795
Acenaphthylene	mg/kg	0.120	0.110	72.0	61-107	8.13	20	WG603795
Anthracene	mg/kg	0.131	0.128	78.0	58-105	2.31	20	WG603795
Benzo(a)anthracene	mg/kg	0.128	0.134	77.0	56-103	4.48	20	WG603795
Benzo(a)pyrene	mg/kg	0.129	0.139	77.0	57-103	7.47	20	WG603795
Benzo(b)fluoranthene	mg/kg	0.130	0.132	78.0	52-106	1.42	20	WG603795
Benzo(g,h,i)perylene	mg/kg	0.138	0.138	82.0	47-112	0.0677	20	WG603795
Benzo(k)fluoranthene	mg/kg	0.134	0.134	80.0	53-104	0.0679	20	WG603795
Chrysene	mg/kg	0.132	0.133	79.0	55-102	0.834	20	WG603795
Dibenz(a,h)anthracene	mg/kg	0.134	0.146	80.0	49-111	8.30	20	WG603795
Fluoranthene	mg/kg	0.120	0.117	72.0	59-108	2.92	20	WG603795
Fluorene	mg/kg	0.115	0.113	69.0	59-100	2.05	20	WG603795
Indeno(1,2,3-cd)pyrene	mg/kg	0.140	0.141	84.0	50-110	0.450	20	WG603795
Naphthalene	mg/kg	0.122	0.114	73.0	55-91	6.44	20	WG603795
Phenanthrene	mg/kg	0.122	0.121	73.0	55-103	0.731	20	WG603795
Pyrene	mg/kg	0.136	0.132	81.0	54-104	2.60	20	WG603795

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Peter Fredman
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Superior, WI 54880

Quality Assurance Report
Level II

L586052

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Tax I.D. 62-0814289

Est. 1970

July 24, 2012

Analyte	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
2-Fluorobiphenyl				70.18	37-119			
Nitrobenzene-d5				67.67	20-114			
p-Terphenyl-d14				78.60	15-174			
TPH (GC/FID) High Fraction	mg/kg	34.1	30.8	85.0	70-120	10.1	23	WG603384
Triacotane				103.9	50-150			WG603384

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
1,2,4-Trimethylbenzene	mg/kg	2.82	0	.05	112.	80-120	L586084-01	WG603760
1,3,5-Trimethylbenzene	mg/kg	2.78	0	.05	110.	80-120	L586084-01	WG603760
Benzene	mg/kg	2.58	0	.05	102.	32-137	L586084-01	WG603760
Ethylbenzene	mg/kg	2.58	0	.05	102.	10-150	L586084-01	WG603760
Gasoline (C6-C10)	mg/kg	24.2	0	.5	96.0	80-120	L586084-01	WG603760
m&p-Xylene	mg/kg	5.46	0	.1	108.	14-141	L586084-01	WG603760
Methyl tert-butyl ether	mg/kg	2.10	0	.05	83.0	24-151	L586084-01	WG603760
Naphthalene	mg/kg	2.74	0	.05	109.	80-120	L586084-01	WG603760
o-Xylene	mg/kg	2.65	0	.05	105.	10-157	L586084-01	WG603760
Toluene	mg/kg	2.64	0	.05	104.	20-142	L586084-01	WG603760
a, a, a-Trifluorotoluene (PID)					105.2	80-120		WG603760
Acenaphthene	mg/kg	0.115	0	.167	68.8	30-132	L585930-05	WG603795
Acenaphthylene	mg/kg	0.111	0	.167	66.3	31-144	L585930-05	WG603795
Anthracene	mg/kg	0.111	0	.167	66.4	27-140	L585930-05	WG603795
Benzo (a) anthracene	mg/kg	0.132	0	.167	78.8	22-139	L585930-05	WG603795
Benzo (a) pyrene	mg/kg	0.129	0	.167	77.1	16-148	L585930-05	WG603795
Benzo (b) fluoranthene	mg/kg	0.132	0	.167	79.0	13-152	L585930-05	WG603795
Benzo (g, h, i) perylene	mg/kg	0.132	0	.167	78.9	10-137	L585930-05	WG603795
Benzo (k) fluoranthene	mg/kg	0.124	0	.167	74.5	15-152	L585930-05	WG603795
Chrysene	mg/kg	0.137	0	.167	81.9	20-139	L585930-05	WG603795
Dibenz (a, h) anthracene	mg/kg	0.141	0	.167	84.4	10-137	L585930-05	WG603795
Fluoranthene	mg/kg	0.112	0	.167	67.3	24-145	L585930-05	WG603795
Fluorene	mg/kg	0.107	0	.167	64.0	30-138	L585930-05	WG603795
Indeno (1, 2, 3-cd) pyrene	mg/kg	0.136	0	.167	81.5	10-139	L585930-05	WG603795
Naphthalene	mg/kg	0.112	0	.167	67.2	31-124	L585930-05	WG603795
Phenanthrene	mg/kg	0.111	0	.167	66.2	25-139	L585930-05	WG603795
Pyrene	mg/kg	0.133	0	.167	79.6	23-145	L585930-05	WG603795
2-Fluorobiphenyl					67.04	37-119		WG603795
Nitrobenzene-d5					60.67	20-114		WG603795
p-Terphenyl-d14					79.09	15-174		WG603795

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
1,2,4-Trimethylbenzene	mg/kg	2.84	2.82	112.	80-120	0.650	20	L586084-01	WG603760
1,3,5-Trimethylbenzene	mg/kg	2.78	2.78	110.	80-120	0.200	20	L586084-01	WG603760
Benzene	mg/kg	2.57	2.58	102.	32-137	0.510	39	L586084-01	WG603760
Ethylbenzene	mg/kg	2.59	2.58	103.	10-150	0.350	44	L586084-01	WG603760
Gasoline (C6-C10)	mg/kg	27.0	24.2	107.	80-120	10.8	20	L586084-01	WG603760
m&p-Xylene	mg/kg	5.44	5.46	108.	14-141	0.280	44	L586084-01	WG603760
Methyl tert-butyl ether	mg/kg	2.20	2.10	87.0	24-151	4.69	37	L586084-01	WG603760
Naphthalene	mg/kg	2.89	2.74	114.	80-120	5.06	20	L586084-01	WG603760
o-Xylene	mg/kg	2.67	2.65	106.	10-157	0.630	44	L586084-01	WG603760
Toluene	mg/kg	2.63	2.64	104.	20-142	0.300	42	L586084-01	WG603760
a, a, a-Trifluorotoluene (PID)				102.6	80-120				WG603760
Acenaphthene	mg/kg	0.115	0.115	68.6	30-132	0.228	21	L585930-05	WG603795

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Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Acenaphthylene	mg/kg	0.109	0.111	65.1	31-144	1.83	24	L585930-05	WG603795
Anthracene	mg/kg	0.122	0.111	72.8	27-140	9.29	20	L585930-05	WG603795
Benzo(a)anthracene	mg/kg	0.124	0.132	74.5	22-139	5.59	22	L585930-05	WG603795
Benzo(a)pyrene	mg/kg	0.129	0.129	77.4	16-148	0.350	21	L585930-05	WG603795
Benzo(b)fluoranthene	mg/kg	0.138	0.132	82.4	13-152	4.20	24	L585930-05	WG603795
Benzo(g,h,i)perylene	mg/kg	0.129	0.132	77.4	10-137	1.89	32	L585930-05	WG603795
Benzo(k)fluoranthene	mg/kg	0.110	0.124	65.8	15-152	12.4	22	L585930-05	WG603795
Chrysene	mg/kg	0.120	0.137	71.8	20-139	13.2	23	L585930-05	WG603795
Dibenz(a,h)anthracene	mg/kg	0.131	0.141	78.7	10-137	6.94	29	L585930-05	WG603795
Fluoranthene	mg/kg	0.120	0.112	71.9	24-145	6.60	29	L585930-05	WG603795
Fluorene	mg/kg	0.116	0.107	69.6	30-138	8.50	22	L585930-05	WG603795
Indeno(1,2,3-cd)pyrene	mg/kg	0.132	0.136	79.1	10-139	3.01	32	L585930-05	WG603795
Naphthalene	mg/kg	0.109	0.112	65.2	31-124	3.03	25	L585930-05	WG603795
Phenanthrene	mg/kg	0.118	0.111	70.7	25-139	6.59	25	L585930-05	WG603795
Pyrene	mg/kg	0.125	0.133	74.6	23-145	6.49	30	L585930-05	WG603795
2-Fluorobiphenyl				67.76	37-119				WG603795
Nitrobenzene-d5				67.12	20-114				WG603795
p-Terphenyl-d14				75.48	15-174				WG603795

Batch number / Run number / Sample number cross reference

WG603760: R2266217: L586052-01 02
 WG603368: R2267335: L586052-01 02
 WG603795: R2269154: L586052-01 02
 WG603384: R2270054: L586052-01 02

* * Calculations are performed prior to rounding of reported values.
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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.