McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Mark Sullivan Spill Control Products	Client Project ID: Moleculoc	Date Sampled: 12/12/11
		Date Received: 12/12/11
1872 Del Rio Way	Client Contact: Mark Sullivan	Date Reported: 12/19/11
Paradise, CA 95969	Client P.O.:	Date Completed: 12/22/11

WorkOrder: 1112349

December 29, 2011

Dear Mark:

Enclosed within are:

1) The results of the **1** analyzed sample from your project: **Moleculoc,**
2) QC data for the above sample, and
3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

The analytical results relate only to the items tested.

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

1112379

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

GeoTracker EDF ☐ **PDF** ☐ **Excel** ☐ **Write On (DW)** ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Mark Sullivan **Bill To:**

Company: Mark Sullivan Spill Control Products

1872 Del Rio Way

Paradise, CA 95969 **E-Mail:** iebm@comcast.net

Tele: (530) 680-7938 **Fax:** ( )

Project #: **Project Name:** Moleculoc

Project Location:

Sampler Signature:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	TCLP RCRA 8 Metals by 1311/EPA6020	ZHETCLP VOCs by EPA 8260	BTEX by EPA 8260 in DRY WEIGHT	% moisture	RCI	Flashpoint by EPA 1030 (SUB-CONTRACTED)	Other	Comments
Saturated Moleculoc		12/12 /2011	11:30 am	2	gl					X					X	X	X	X	X	X		

Other: Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
	12/12/11	355pm	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____ COMMENTS:

GOOD CONDITION____

HEAD SPACE ABSENT____

DECHLORINATED IN LAB____

APPROPRIATE CONTAINERS____

PRESERVED IN LAB____

* hold remaining sample for potential additional testing

VOAS O&G METALS OTHER

PRESERVATION pH<2

McCampbell Analytical, Inc.
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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1112349 **ClientCode: MSSCP**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Mark Sullivan
Mark Sullivan Spill Control Products
1872 Del Rio Way
Paradise, CA 95969
530-680-7938 FAX:

Email:
cc:
PO:
ProjectNo: Moleculoc

Bill to:
Mark Sullivan
Mark Sullivan Spill Control Products
1872 Del Rio Way
Paradise, CA 95969

Requested TAT: 5 days

Date Received: **12/12/2011**
Date Printed: **12/19/2011**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1112349-001	Saturated Moleculoc	Solid	12/12/2011 11:30	☐	A	A	A	A	A	A						

Test Legend:

1	Ignitability by EPA 1030	2	MBTEX-8260B_Solid	3	Moisture_Solid	4	ReactS_Solid	5	TCLPRCRAMS_Solid
6	ZHE8260-TCLP_Solid	7		8		9		10	
11		12							

The following SampID: 001A contains testgroup.

Prepared by: Zoraida Cortez

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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Sample Receipt Checklist

Client Name: **Mark Sullivan Spill Control Products**
Date and Time Received: **12/12/2011 3:59:14 PM**

Project Name: **Moleculoc**
Checklist completed and reviewed by: Zoraida Cortez

WorkOrder N°: **1112349** Matrix: Solid
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☐	No ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp:		NA ☑
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	No VOA vials submitted ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☐	No ☑	

** NOTE: If the "No" box is checked, see comments below.*

Comments:

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1872 Del Rio Way		Date Received: 12/12/11
Paradise, CA 95969	Client Contact: Mark Sullivan	Date Reported: 12/19/11
	Client P.O.:	Date Completed: 12/22/11

Work Order: 1112349

December 29, 2011

Case Narrative

Sample "Saturated Moleculoc" (MAI Lab ID#1112349-001A)

This sample was generated at McCampbell Analytical, Inc. under the supervision & direction of Mr. Mark Sullivan of Mark Sullivan Spill Control Products. Mark supplied the 3 fuels (gasoline, diesel #1/highway diesel and used 10-30 Quaker State motor oil with ~5000 miles of wear to the oil) & the Moleculoc material that was mixed together to create the sample matrix.

The following analyses were conducted:

Reactivity by EPA SW-846, chapter 7, Rev 3, Corrosivity by EPA 9040 & Ignitability by EPA 1010 (RCI)
Percent Moisture by D2216-92
RCRA 8 Metals using TCLP extraction; EPA 6020 & EPA 1311
BTEX+MTBE by EPA 8260B
Volatile Organic Compounds (VOCs) using the ZHETCLP extraction; EPA 8260B & EPA 1311
Ignitability by EPA 1030
PCBs by EPA 8082
CAM17 Metals by EPA 6020 using acid digest EPA 3050B

All testing methodologies that were performed adhere to Title 40 of the US Code of Regulations (40 CFR) guidelines.

PROCEDURE:

Monday, 11/28/2011
10am: 30ml (~1 ounce) of a 10ml+10ml+10ml gasoline, diesel & motor oil mix was added to 454 grams (~1 lbs) of Moleculoc into a plastic pan and mixed well using a paint brush until the sample had the consistancy of wet sand but no free liquid was observed. The sample was left uncovered, at room temperature.

1pm: Another 30ml (~1 ounce) of a 10ml+10ml+10ml gasoline, diesel & motor oil mix was added to the original 454 grams (~1 lbs) of Moleculoc/fuel mix sample remaining in the pan. The fuel mixture was mixed until the sample had the consistancy of wet sand. No free liquid was observed. The sample was left uncovered, at room temperature.

4:45pm: 113.5 grams (~0.25 lb) of unused (clean) Moleculoc was added to the sample mix then another 30ml (~1 ounce) of a 10ml+10ml+10ml gasoline, diesel & motor oil mix was added to the Moleculoc/fuel mix sample remaining in the pan. The fuel mixture was mixed until the sample had the consistancy of wet sand. No free liquid was observed. The sample was left uncovered, at room temperature.

Wednesday, 11/30/11
11am: 113.5 grams (~0.25 lb) of unused (clean) Moleculoc was added to the sample mix then another 30ml (~1 ounce) of a 10ml+10ml+10ml gasoline, diesel & motor oil mix was added to the Moleculoc/fuel mix sample remaining in the pan. The fuel mixture was mixed until the sample had the consistancy of wet sand. No free liquid was observed. The sample was left

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Mark Sullivan Spill Control Produ	Client Project ID: Moleculoc	Date Sampled: 12/12/11
1872 Del Rio Way		Date Received: 12/12/11
Paradise, CA 95969	Client Contact: Mark Sullivan	Date Reported: 12/19/11
	Client P.O.:	Date Completed: 12/22/11

Work Order: 1112349

December 29, 2011

uncovered, at room temperature.

3pm: 113.5 grams (~0.25 lb) of unused (clean) Moleculoc was added to the sample mix then another 30ml (~1 ounce) of a 10ml+10ml+10ml gasoline, diesel & motor oil mix was added to the Moleculoc/fuel mix sample remaining in the pan. The fuel mixture was mixed until the sample had the consistancy of wet sand. No free liquid was observed. The sample was left uncovered, at room temperature.

Thursday, 12/01/11
10:10am: 113.5 grams (~0.25 lb) of unused (clean) Moleculoc was added to the sample mix then another 30ml (~1 ounce) of a 10ml+10ml+10ml gasoline, diesel & motor oil mix was added to the Moleculoc/fuel mix sample remaining in the pan. The fuel mixture was mixed until the sample had the consistancy of wet sand. No free liquid was observed. The sample was left uncovered, at room temperature.

In total, ~908 grams of Moleculoc material and 180ml of fuel mixture was utilized to create sample "Saturated Moleculoc". This sample was left uncovered at room temperature for 12 days. On Monday, 12/12/11, the sample was collected and placed in sampling jars with teflon lined lids and labeled for testing. ~50 grams of sample was sent to Assoicated Labs in Orange, CA for Ignitability by EPA 1030 testing while the remainder of the sample was prepared for analysis at McCampbell Analytical, Inc. and the remaining material stored refrigerated at ~4 degrees C.

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Mark Sullivan Spill Control Products	Client Project ID: Moleculoc	Date Sampled: 12/12/11
		Date Received: 12/12/11
1872 Del Rio Way	Client Contact: Mark Sullivan	Date Extracted: 12/12/11-12/13/11
Paradise, CA 95969	Client P.O.:	Date Analyzed: 12/12/11-12/13/11

RCI (Reactivity , Corrosivity , Ignitability)

Work Order: 1112349

Lab ID	Client ID	Matrix	Reactivity		Corrosivity	Ignitability	Comments
			Sulfide	Cyanide			
001A	Saturated Moleculoc	S	neg	neg	8.01 @ 20.6°C	neg	

Reactivity: negative means no obvious evolution of gas or instability and contains no reactive cyanide or sulfide (<250 mg/L cyanide and <500 mg/L sulfide for Water matrix; <250 mg/Kg cyanide and <500 mg/Kg sulfide for Soil matrix, by EPA SW-846, chapter7, Rev. 3).

Corrosivity determined by EPA method 9040; pH = @ _ °C ; ±0.05 units.

Ignitability: EPA method 1010; reported in °C; ±2°C; negative means that flashpoint was not detected below 100°C.

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

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Mark Sullivan Spill Control Products	Client Project ID: Moleculoc	Date Sampled: 12/12/11
		Date Received: 12/12/11
1872 Del Rio Way	Client Contact: Mark Sullivan	Date Extracted: 12/12/11
Paradise, CA 95969	Client P.O.:	Date Analyzed: 12/16/11

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1112349

					Reporting Limit for DF =1	
Lab ID	1112349-001A					
Client ID	Saturated Moleculoc					
Matrix	S					
DF	400				S	W
Compound	**Concentration**				mg/kg-dry	ug/L
Benzene	ND<2.1				0.005	NA
Ethylbenzene	ND<2.1				0.005	NA
Toluene	ND<2.1				0.005	NA
Xylenes, Total	ND<2.1				0.005	NA
Surrogate Recoveries (%)						
%SS1:	109					
%SS2:	109					
Comments	a3,i1					

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

a3) sample diluted due to high organic content.
i1) results are reported on a dry weight basis

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		Date Received: 12/12/11
1872 Del Rio Way	Client Contact: Mark Sullivan	Date Extracted: 12/12/11
Paradise, CA 95969	Client P.O.:	Date Analyzed 12/13/11

Percent Moisture

Analytical Method: ASTMD2216-92 Work Order: 1112349

Lab ID	Client ID	Matrix	% Moisture	Comments
1112349-001A	Saturated Moleculoc	S	2.99	

Reporting Limit or Method Accuracy and Reporting Units; ND means not detected at or above the reporting limit	W	NA	
	S	±0.1, wet wt%	

Moisture Content, % = [(A - B) x 100)] / A
A = mass of the total, as received, sample (i.e., "wet weight")
B = mass of the oven-dried sample

DF = Dilution Factor

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Mark Sullivan Spill Control Products	Client Project ID: Moleculoc	Date Sampled: 12/12/11
		Date Received: 12/12/11
1872 Del Rio Way	Client Contact: Mark Sullivan	Date Extracted: 12/12/11-12/13/11
Paradise, CA 95969	Client P.O.:	Date Analyzed: 12/14/11

RCRA Metals*

Extraction Method: SW1311/SW3050B | Analytical Method: SW6020 | Work Order: 1112349

Lab ID	1112349-001A				Reporting Limit for DF =1		
Client ID	Saturated Moleculoc						
Matrix	Solid						
DF	1						
Extraction Type	TCLP					S	W
Compound	**Concentration**					mg/L	µg/L
Arsenic	ND					0.1	NA
Barium	1.0					1.0	NA
Cadmium	ND					0.05	NA
Chromium	ND					0.1	NA
Lead	ND					0.1	NA
Mercury	ND					0.01	NA
Selenium	ND					0.1	NA
Silver	ND					0.1	NA
Surrogate Recoveries (%)							
%SS:	N/A						
Comments							

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TCLP = Toxicity Characteristic Leaching Procedure.
DI TCLP = Toxicity Characteristic Leaching Procedure using DI water.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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Mark Sullivan Spill Control Products	Client Project ID: Moleculoc	Date Sampled: 12/12/11
		Date Received: 12/12/11
1872 Del Rio Way	Client Contact: Mark Sullivan	Date Extracted: 12/12/11-12/13/11
Paradise, CA 95969	Client P.O.:	Date Analyzed: 12/16/11

Volatile Organics by GC/MS (Basic Target List)*

Extraction Method: SW1311 (ZHETCLP)/SW5030B Analytical Method: SW8260B Work Order: 1112349

Lab ID	1112349-001A
Client ID	Saturated Moleculoc
Matrix	Solid

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.1	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.02
n-Butyl benzene	0.0080	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.002	1,2-Dibromoethane (EDB)	ND	1.0	0.005
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.005	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	0.17	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	0.064	1.0	0.005	1,3,5-Trimethylbenzene	0.0093	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes, Total	ND	1.0	0.005

Surrogate Recoveries (%)			
%SS1:	101	%SS2:	109
%SS3:	86		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak; &) low/high surrogate recovery due to matrix interference.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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QC SUMMARY REPORT FOR WET CHEMISTRY TESTS

Test Method: **SWChpt7 (Ignitability)** **Matrix:** **S** **WorkOrder:** **1112349**

Method Name: SWChpt7_Ign			Units: pos/neg			BatchID: 63292
Lab ID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
1112349-001A	neg	1	neg	1	N/A	N/A

BATCH 63292 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/12/11	12/12/11 6:25 PM				

Test Method: **SW9045D (pH)** **Matrix:** **S** **WorkOrder:** **1112349**

Method Name: SW9045D			Units: ±, pH units @ °C			BatchID: 63284
Lab ID	Sample	DF	Dup / Ser. Dil.	DF	Precision	Acceptance Criteria
1112349-001A	8.01 @ 20.6°C	1	8.02 @ 20.7°C	1	0.01	0.1

BATCH 63284 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/13/11	12/13/11 2:01 PM				

Dup = Duplicate; Ser. Dil. = Serial Dilution; MS = Matrix Spike; RD = Relative Difference; RPD = Relative Percent Deviation.

Precision = Absolute Value (Sample - Duplicate)

RPD = 100 * (Sample - Duplicate) / [(Sample + Duplicate) / 2]

%RPD is calculated using results of up to 10 significant figures, however the reported results are rounded to 2 or 3 significant figures. Therefore there may be a slight discrepancy between the %RPD displayed above and %RPD calculated using the reported results. MAI considers %RPD based upon more significant figures to be more accurate.

DHS ELAP Certification 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Solid | QC Matrix: Solid | BatchID: 63319 | WorkOrder: 1112349

EPA Method: SW8260B **Extraction: SW1311** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	N/A	0.10	N/A	N/A	N/A	113	N/A	N/A	70 - 130
Benzene	N/A	0.10	N/A	N/A	N/A	115	N/A	N/A	70 - 130
t-Butyl alcohol (TBA)	N/A	0.50	N/A	N/A	N/A	104	N/A	N/A	70 - 130
Chlorobenzene	N/A	0.10	N/A	N/A	N/A	118	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)	N/A	0.10	N/A	N/A	N/A	121	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)	N/A	0.10	N/A	N/A	N/A	118	N/A	N/A	70 - 130
1,1-Dichloroethene	N/A	0.10	N/A	N/A	N/A	113	N/A	N/A	70 - 130
Diisopropyl ether (DIPE)	N/A	0.10	N/A	N/A	N/A	118	N/A	N/A	70 - 130
Ethyl tert-butyl ether (ETBE)	N/A	0.10	N/A	N/A	N/A	123	N/A	N/A	70 - 130
Methyl-t-butyl ether (MTBE)	N/A	0.10	N/A	N/A	N/A	120	N/A	N/A	70 - 130
Toluene	N/A	0.10	N/A	N/A	N/A	118	N/A	N/A	70 - 130
Trichloroethene	N/A	0.10	N/A	N/A	N/A	112	N/A	N/A	70 - 130
%SS1:	N/A	0.25	N/A	N/A	N/A	109	N/A	N/A	70 - 130
%SS2:	N/A	0.25	N/A	N/A	N/A	105	N/A	N/A	70 - 130
%SS3:	N/A	0.025	N/A	N/A	N/A	108	N/A	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 63319 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/12/11	12/16/11 10:36 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Solid | QC Matrix: Soil | BatchID: 63365 | WorkOrder: 1112349

EPA Method: SW8260B **Extraction: SW5030B** **Spiked Sample ID: 1112307-009B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Benzene	ND	0.050	99.9	97.3	2.65	100	70 - 130	30	70 - 130
Methyl-t-butyl ether (MTBE)	ND	0.050	99.3	95.8	3.56	97.3	70 - 130	30	70 - 130
Toluene	ND	0.050	108	103	4.24	106	70 - 130	30	70 - 130
%SS1:	99	0.12	115	114	0.454	104	70 - 130	30	70 - 130
%SS2:	113	0.12	128	127	0.321	108	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 63365 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/12/11	12/16/11 2:46 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QC SUMMARY REPORT FOR WET CHEMISTRY TESTS

Test Method: **ASTM D2216-92 (Percent Moisture)** **Matrix:** **S** **WorkOrder:** **1112349**

Method Name: ASTMD2216-92 Units: ±, wet wt% BatchID: 63384

Lab ID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
1112349-001A	2.99	2.119	2.98	2.112	0.43	<15

BATCH 63384 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/12/11	12/13/11 12:35 PM				

Dup = Duplicate; Ser. Dil. = Serial Dilution; MS = Matrix Spike; RD = Relative Difference; RPD = Relative Percent Deviation.

Precision = Absolute Value (Sample - Duplicate)

RPD = 100 * (Sample - Duplicate) / [(Sample + Duplicate) / 2]

%RPD is calculated using results of up to 10 significant figures, however the reported results are rounded to 2 or 3 significant figures. Therefore there may be a slight discrepancy between the %RPD displayed above and %RPD calculated using the reported results. MAI considers %RPD based upon more significant figures to be more accurate.

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QC SUMMARY REPORT FOR WET CHEMISTRY TESTS

Test Method: **SWchpt7_CN (Reactive Cyanide)** **Matrix:** **S** **WorkOrder:** **1112349**

Method Name: SWchpt7_CN			Units: pos/neg			BatchID: 63293
Lab ID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
1112349-001A	neg	1	neg	1	N/A	N/A

BATCH 63293 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/12/11	12/12/11 6:00 PM				

Test Method: **SWchpt7_S (Reactive Sulfide)** **Matrix:** **S** **WorkOrder:** **1112349**

Method Name: SWchpt7_S			Units: pos/neg			BatchID: 63293
Lab ID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
1112349-001A	neg	1	neg	1	N/A	N/A

BATCH 63293 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/12/11	12/12/11 6:00 PM				

Dup = Duplicate; Ser. Dil. = Serial Dilution; MS = Matrix Spike; RD = Relative Difference; RPD = Relative Percent Deviation.

Precision = Absolute Value (Sample - Duplicate)

RPD = 100 * (Sample - Duplicate) / [(Sample + Duplicate) / 2]

%RPD is calculated using results of up to 10 significant figures, however the reported results are rounded to 2 or 3 significant figures. Therefore there may be a slight discrepancy between the %RPD displayed above and %RPD calculated using the reported results. MAI considers %RPD based upon more significant figures to be more accurate.

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QC SUMMARY REPORT FOR SW6020

W.O. Sample Matrix: Solid | QC Matrix: Soil | BatchID: 63324 | WorkOrder: 1112349

EPA Method: SW6020 **Extraction: SW1311/SW3050B** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Arsenic	N/A	10	N/A	N/A	N/A	90.9	N/A	N/A	75 - 125
Barium	N/A	100	N/A	N/A	N/A	91.1	N/A	N/A	75 - 125
Cadmium	N/A	10	N/A	N/A	N/A	90.6	N/A	N/A	75 - 125
Chromium	N/A	10	N/A	N/A	N/A	89.7	N/A	N/A	75 - 125
Lead	N/A	10	N/A	N/A	N/A	88.3	N/A	N/A	75 - 125
Mercury	N/A	0.25	N/A	N/A	N/A	91.1	N/A	N/A	75 - 125
Selenium	N/A	10	N/A	N/A	N/A	93.3	N/A	N/A	75 - 125
Silver	N/A	10	N/A	N/A	N/A	85.7	N/A	N/A	75 - 125

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 63324 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112349-001A	12/12/11 11:30 AM	12/12/11	12/14/11 12:06 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QA/QC Officer