## IMMEDIATE RESPONSE ACTION STATUS REPORT AND MODIFICATION PLAN

Prepared for: Eagle Gas, Inc., 131 Main Street, Carver, MA DEP RTN 4-17582

Prepared by: Decoulos & Company

Date: November 5, 2004

## **DECOULOS & COMPANY**

**ENVIRONMENTAL ENGINEERING & LAND PLANNING** 

VIA EMAIL AND USPS FIRST CLASS MAIL

Friday, November 05, 2004

Jonathan E. Hobill, Regional Engineer DEP Bureau of Waste Site Cleanup 20 Riverside Drive Lakeville, MA 02347

RE: Immediate Response Action Plan Status Report and IRA Plan Modification No. 2; 131 Main Street, Carver (the Site); RTN 4-17582; NON-SE-03-3T-103

Dear Mr. Hobill:

On behalf of Eagle Gas, Inc., Decoulos & Company is pleased to submit this status report and second proposed modification to the Immediate Response Action (IRA) Plan for the above referenced release.

A discovery of petroleum Non-Aqueous Phase Liquid (NAPL) in monitoring well BP-5RR was reported to the Department on January 21, 2003. To address the NAPL discovery, an Immediate Response Action (IRA) Plan was submitted on March 17, 2003 and a status report was subsequently filed on July 3, 2003. As a result of the failure to comply with the timelines for IRA status reports set forth in 310 CMR 40.0425, the Department requested a status report and modification of the IRA Plan on March 19, 2004 (NON-SE-03-3T-103).

An IRA Status Report and proposed modification to the IRA Plan was submitted to the Department on June 15, 2004. The Department subsequently denied the IRA Plan Modification due to insufficient supporting documentation to justify passive NAPL recovery; insufficient delineation of NAPL; the threat of a proposed interceptor trench creating new contaminant pathways; irregular NAPL recovery actions; lack of a proposed plan to monitor and control the migration of NAPL; and, the failure of the PRP to propose an active NAPL recovery system.

### **GROUNDWATER SAMPLING**

On June 3, 2004, groundwater was sampled from existing monitoring wells. A comparative summary of the results is provided in the attached Table 1. The summary also provides data from sampling conducted on June 12, 2003. Certificates of Analysis are provided in Appendix A.

The results continue to show that the diesel release is not migrating along a preferential pathway outside the 15 inch reinforced concrete stormwater drain pipe along Main Street. Additionally, results from microwell BP-1 (across Main Street on property of William Holmes) do not show any impact from either the diesel release (4-17582) or the dissolved gasoline release (RTN 4-13333).

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### ADDITIONAL WELL INSTALLATIONS

On August 17 and 18, 2004, Technical Drilling Services, Inc. (TDS) of Sterling, MA completed a combination of four inch wells and one inch microwells on the Site and within the Main Street right-of-way. The four inch wells were spun with a hollow stem auger mounted on a GeoProbe 6610DT direct push probe machine. The small unit was necessary to avoid contact with overhead utility lines.

Four inch wells ERW-1 and ERW-2 were completed on August 17<sup>th</sup> and their location is shown on the attached Figure 1. Soil samples were not collected during the advancement of the auger and the total depth of both wells was approximately 13 feet below grade. Also on the 17<sup>th</sup>, microwells DCW-4, DCW-5 and DCW-6 were established as shown on Figure 1. Each of these microwells were advanced to a total depth of approximately 15 feet below grade.

A composite sample from the 10 to 15 foot interval was collected from DCW-4 and analyzed for volatile petroleum hydrocarbons (VPH). The results of the analysis show no detectable concentration of any VPH fraction. Certificates of Analysis are provided in Appendix A.

Four inch wells ERW-3 and ERW-4 were completed on August 18<sup>th</sup> and their location is shown on the attached Figure 1. Soil samples were not collected during the advancement of the auger and the total depth of both wells was approximately 13 feet below grade. Also on the 18<sup>th</sup>, microwells DCW-7 and DCW-8 were established as shown on Figure 1. Each of these microwells were advanced to a total depth of approximately 15 feet below grade.

Due to the visual and olfactory evidence of petroleum impact at DCW-7, two composite samples between 5 and 15 feet were collected and analyzed for volatile petroleum hydrocarbons (VPH). At approximately seven feet below grade, approximately 14 inches of pure petroleum saturated soil was observed within the DCW-7 core sample. The results of the analysis show elevated concentrations of VPH fractions. The elevated readings were slightly above Method 1 S2/GW1 Standards in the MCP. Extractable petroleum hydrocarbons (EPHs) were not analyzed. Certificates of Analysis are provided in Appendix A.

The product observation at DCW-7 raised immediate concerns of impact to indoor air quality at the commercial/residential structure. On August 26, 2004, a Summa cannister was set in a closed room on the second floor of the residence to measure indoor air concentrations of air phase hydrocarbons (APH). The canister was regulated for steady intake over a 24 hour period and submitted to GeoLabs, Inc. of Braintree, MA for analysis. A Certificates of Analysis is provided in Appendix A.

Results from the APH analysis show no detectable concentration of the APH constituents. Detectable concentrations of benzene, ethylbenzene, toluene and xylenes were identified just above reportable limits. The maximum concentration identified, 10.3 ug/m³, would not be expected to pose a threat to public health.

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#### NAPL MEASUREMENTS AND RECOVERY

On August 26, 2004, a site visit was conducted to measure the apparent NAPL thickness at all impacted wells using a Solinst Oil/Water Interface probe. Results from the measurements are provided on the attached Table 2.

A site visit was also conducted on October 7, 2004 with Department representative Cynthia Baran and LSP David Bennett, representing the PRP Richard Nantais. NAPL measurements were again recorded with a Solinst Oil/Water Interface probe and are presented in Table 2.

Significant increases in overall NAPL depths occurred in the four inch wells during the 42 day period between site visits. NAPL depth increases are highlighted in Table 2 and noted next to each four inch well on Figure 1.

NAPL recovery resumed on October 7<sup>th</sup> (the last recorded NAPL collection effort ended on May 3, 2004 as reported in the IRA Status Report dated June 15, 2004). Signed NAPL Withdrawal Forms are provided in Appendix B.

The NAPL recovery has been performed by PRP Najib Badaoui, President of Eagle Gas, Inc., with direct oversight by LSP James J. Decoulos. Decoulos conducted site inspections on October 14<sup>th</sup>, October 28<sup>th</sup> and November 1<sup>st</sup>.

On October 28, 2004, a four-inch diameter Keck passive recovery canister (PRC) skimmer, with a four-liter capacity, was placed in well ERW-2 to more accurately measure the rate of NAPL recovery. Product information and schematic diagrams of the unit are provided in Appendix C. After an initial recovery of over 3 liters the first day, NAPL recovery to well ERW-2 has subsequently diminished to less than 1 liter per day.

### **IRA PLAN MODIFICATION**

The recent evaluation and recovery of NAPL demonstrates that the recovery of diesel fuel from existing well points can be accomplished with passive recovery mechanisms. However, this collection effort is not sufficient, by itself, to address the probable migration of NAPL and dissolved diesel constituents underneath the Main Street surface. Past findings have shown that groundwater is migrating to the east - towards the private residence of William Holmes.

Eagle Gas therefore proposes to implement a groundwater treatment system that withdraws groundwater from wells ERW-1 and ERW-4 at a rate sufficient to pull NAPL and dissolved diesel constituents back to its property. The groundwater will be pumped to a treatment trailer, treated and be discharged into the ground via infiltration chambers. The proposed layout is shown on Figure 1.

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Prior to specifying and sizing a suitable pump, a pump test will need to be conducted from both wells. The pump test will require the installation of additional microwells across Main Street to measure the depression effects of pumping from ERW-1 and ERW-4. Proposed microwells are shown on Figure 1.

Once either ERW-1 or ERW-4 is selected as the groundwater withdrawal source, the remaining well will be fitted with a Keck PRC skimmer (i.e. if ERW-1 is used to withdraw and depress groundwater, ERW-4 will be fitted with the skimmer). Additionally, well ERW-2 will continue to be fitted with a Keck PRC skimmer. Based upon NAPL recovery rates recently measured, it is anticipated that the skimmer units will need to be checked and emptied three times per week.

It is anticipated that groundwater withdrawal from either ERW-1 or ERW-4 will collect both NAPL and dissolved phase diesel constituents. The pump, either a submersible unit or a jet pump located in the trailer, shall therefore be explosion proof and capable of pumping diesel product. Inside the trailer, the pump outlet will discharge to a 300 gallon separation tank that will provide for NAPL to be stabilized and separated. A skimming unit shall be set in the separation tank to collect NAPL and the groundwater will be treated through two activated carbon drums and discharged into the groundwater infiltration galleries. A 55 gallon drum shall be located in the trailer to collect NAPL.

Sampling of groundwater shall occur on a weekly basis at the inlet and outlet of the activated carbon drums. The groundwater shall be analyzed for both EPH and VPH fractions.

The system will continue to operate in this prescribed manner until NAPL has been recovered to a sheen. This milestone will not be considered achieved until both PRC skimmers and the separation tank show no NAPL recovery for a continuous three week period.

Once NAPL has been adequately removed, a second phase of treatment will commence. This phase will involve the introduction of chemical oxidants to the soil and groundwater. Depending on the hydraulic conductivity of the subsurface, the oxidants may be introduced directly into the existing four inch wells or into an infiltration trench across Main Street as shown in Figure 1.

The selection and application of oxidant will depend upon the permeability of the underlying soils. If it is determined from the pump test that the underlying materials are highly permeable, hydrogen peroxide  $(H_2O_2)$  shall be injected with an iron catalyst to chemically degrade the remaining diesel constituents. The application is commonly referred to as a Fenton's Reagent treatment. The concentration of the peroxide shall be approximately 25% with an equal volume of dilute iron catalyst added at a concentration of 100 ppm.

A determination of lower hydraulic conductivity will revise the oxidant selection to persulfate  $(S_2O_8)$ . Persulfate has been shown to be an effective oxidant of diesel product with a significantly longer persistence than peroxide.

Both oxidants are considered safe for application in a GW1 area and do not create precipitates. Further details of the application and monitoring of the peroxide or persulfate oxidants will be provided to the Department after the completion of the pump test.

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Eagle Gas appreciates the Department's patience and cooperation in resolving the remediation of this release. As you know, part of the delay associated with an appropriate response has been that the work to be conducted is mostly within the Main Street right-of-way controlled by the Town of Carver. The Carver Board of Selectmen voted on October 12, 2004 to endorse a license agreement between Eagle and the Town, which provides authority to conduct these proposed actions.

We look forward to your continued understanding and support. Please feel free to call or email if you have any questions or concerns. Thank you.

Very truly yours,

James J. Decoulos, PE, LSP jamesj@decoulos.com

cc: Francis J. Casey, Carver Board of Selectmen

Robert C. Tinkham, Jr., Carver Board of Health

Sarah G. Hewins, Carver Conservation Commission

William A. Halunen, Carver Department of Public Works

Dana E. Harriman, Carver Fire Department

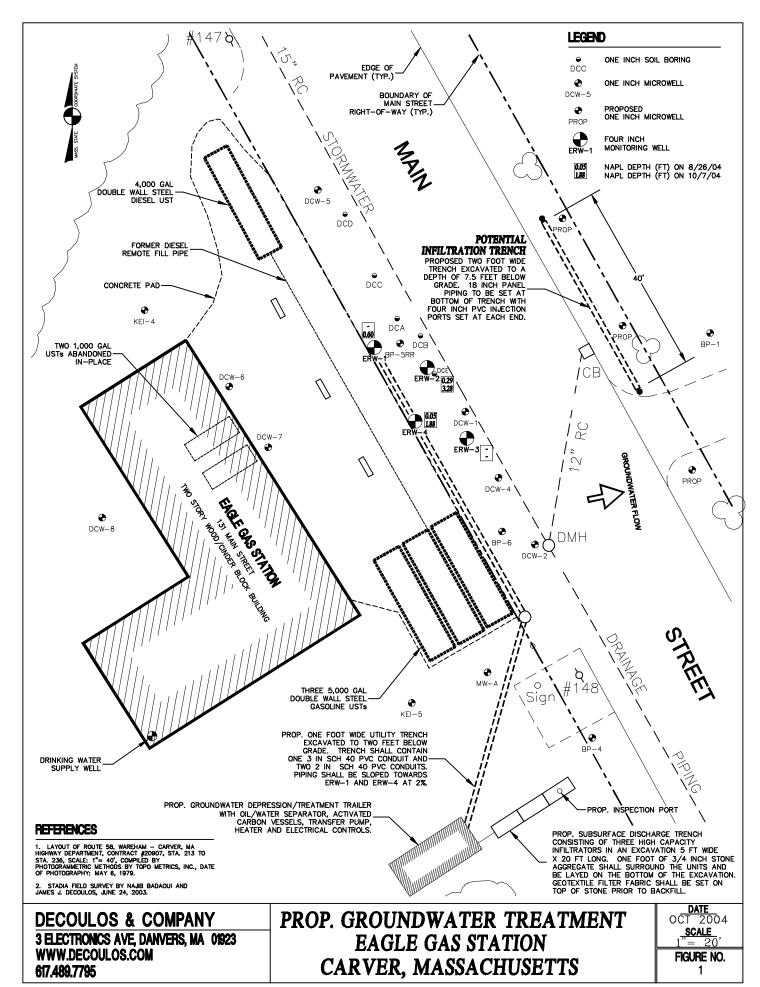
Mark R. Reich, Esq., Kopelman and Paige, P.C.

Donald P. Nagle, Esq.

David Bennett, Bennett & O'Reilly, Inc.

Theodore L. Bosen, Esq.

Najib Badaoui, Eage Gas, Inc.



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Table 1
Positive Lab Results for Groundwater Samples
131 Main Street, Carver, MA
June, 2004

						I		1					Í									
	Sample ID:	BP-1	BP-2	BP-2	BP-3	BP-3	BP-4	MW-A	MW-A	DCW-1	DUP	DCW-1	DCW-2	DCW-2	DCW-3	DOW 1	DUP DCW-3A	KEI-4		MODIM	-4	
								134710	149939	135581	DCW-A 135584	-	135582			DCW-3 149934	149935	149937		MCP M	ethod 1 Star	idards
	Lab ID: Date Collected:	149931 06/03/04	134702 05/21/03	149932 06/03/04	134703 05/21/03	149933 06/03/04	135585 06/12/03	05/21/03		06/12/03	06/12/03	149938 06/03/04	06/12/03	149936 06/03/04	135583 06/12/03	06/03/04	06/03/04	06/03/04	UCLs	GW1	GW2	GW3
Parameter	Units:	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μα/L	μα/L	μg/L	μg/L	μα/L	μg/L	μα/L	μg/L	μα/L	μα/L	μg/L	μα/L	μg/L	μα/L	μg/L
rarameter	Methyl tert-butyl ether	ND	ND	16.8	ND	ND	15.3	992	1730	6380	5930	μg/L	243	μg/L 46	ND	ND	ND	ND	100,000	70	50,000	50,000
	Benzene	ND ND	ND	ND	ND	ND	ND	40.4	40.5	11.7	9.40		ND	ND	ND	ND ND	ND ND	ND	70.000	5	2.000	7.000
	Toluene	ND	ND	ND	ND	ND	ND	22.0	ND	1030	1110		ND	ND	ND	ND	ND	ND	100,000	1000	6,000	50,000
	Ethylbenzene	ND	ND	ND	ND	ND	ND	202	173	1500	1580		ND	ND	ND	ND	ND	ND	100,000	700	30,000	4,000
	m & p-Xvlenes	ND	ND	ND	ND	ND	ND	454	93	7090	7760		ND	ND	ND	ND	ND	ND	100,000	10000	6,000	50,000
	o-Xylene	ND	ND	ND	ND	ND	ND	143	15	3220	3380		ND	ND	ND	ND	ND	ND	100,000	10000	6,000	50,000
	Naphthalene	ND	ND	ND	ND	ND	ND	25.2	37.1	446	442		ND	ND	ND	ND	ND	ND	60,000	20	6.000	6,000
VPH	C5-C8 Aliphatic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	100,000	400	1,000	4,000
Fractions	C9-C12 Aliphatic	ND	ND	ND	ND	ND	ND	ND	100.0	ND	ND		ND	ND	ND	ND	ND	ND	100,000	4000	1,000	20,000
	C9-C10 Aromatic	ND	ND	ND	ND	ND	ND	961	252	5410	5650		ND	ND	ND	ND	ND	ND	100,000	200	5,000	4,000
	Naphthalene	ND	ND	ND	ND	ND	ND	8.21	12.00	95.3	88.2	ND	ND	ND	ND	ND	ND	ND	60,000	20	6,000	6,000
	2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	1.30	ND	19.3	18.3	ND	ND	ND	ND	ND	ND	ND	100,000	10	10,000	3,000
Analytes	Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50,000	20	NA	5,000
	Phenanthrene	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,000	300	NA	50
	Acenaphthylene Fluorene	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	30,000 30,000	300 300	NA NA	3,000 3,000
	Anthracene	ND ND	ND ND	ND ND	ND ND	ND ND	ND	ND	ND ND	ND ND	ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	30,000	2000	NA NA	3,000
	Fluoranthene	ND ND	ND ND	ND ND	ND ND	ND ND	ND	ND	ND ND	ND ND	ND	ND ND	ND ND	ND ND	ND	ND ND	ND ND	ND ND	3,000	300	NA NA	200
Other	Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	200	NA.	3.000
	Benz[a]Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	1.0	NA.	3,000
Analytes	Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	2.0	NA	3,000
,	BenzoſbìFluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	1.0	NA	3,000
	Benzo[k]Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	1.0	NA	3,000
	Benzo[a]Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	0.20	NA	3,000
	Indeno[1,2,3-c,d]Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	8.0	10	5,000
	Dibenzo[a,h]Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	0.50	NA	3,000
	Benzo[g,h,i]Perylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30,000	300	NA	3,000
EPH	C9-C18 Aliphatic	ND	ND	ND	192	ND	ND	ND	ND	ND	702	ND	ND	ND	ND	ND	ND	ND	100,000	4000	1,000	20,000
Fractions	C19-C36 Aliphatic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100,000	5000	NA	20,000
	C11-C22 Aromatic	ND	ND	ND	ND	ND	ND	ND	ND	150	104	150	ND	ND	ND	ND	ND	ND	100,000	200	50,000	30,000

Note: Exceedance of Method 1 Standard is highlighted.

## Table 2 Non Aqueous Phase Liquid (NAPL) Measurements 131 Main Street, Carver, MA

	Depth from		Depth from ground surface		Depth from		Depth from ground surface
Date:	ground surface to top of NAPL (feet) 8/26/2004	Depth of NAPL (feet) 8/26/2004	to top of static water (feet) 8/26/2004	Total Depth of Well (feet) 8/26/2004	ground surface to top of NAPL (feet) 10/7/2004	Depth of NAPL (feet) 10/7/2004	to top of static water (feet) 10/7/2004
ERW-1	-	-	6.86	12.90	6.34	0.60	6.94
ERW-2	7.03	0.29	7.32	12.80	6.30	3.28	9.58
ERW-3	-	-	7.14	13.60	-	-	6.93
ERW-4	7.05	0.05	7.10	12.70	6.53	1.88	8.41
BP-5RR	5.97	3.60	-	9.57	5.67	3.83	-
DCW-4	-	-	7.12	12.60	-	-	6.84
DCW-5	-	-	5.60	11.95	-	-	5.31
DCW-6	-	-	6.57	12.3	-	-	6.28
DCW-7	6.87	1.32	8.19	12.2	5.79	6.99	12.78

Table 3 Non Aqueous Phase Liquid (NAPL) Recovery between October 7, 2004 and November 1, 2004 131 Main Street, Carver, MA

Date	Time	ERW-1 DEPTH OF <u>NAPL (IN)</u>	ERW-1 EST. VOLUME OF NAPL (LITER)	ERW-2 DEPTH OF <u>NAPL (IN)</u>	ERW-2 EST. VOLUME OF NAPL (LITER)	ERW-4 DEPTH OF <u>NAPL (IN)</u>	ERW-4 EST. VOLUME OF NAPL (LITER)
10/7/2004	1400			40	<u>3.8</u>	22	<u>2.6</u>
10/13/2004	2100			38	<u>3.8</u>		
10/14/2004	1030			4	1.9		
10/14/2004	1830			1.5			
10/18/2004	2100			3	1.9	15	<u>2.6</u>
10/19/2004	2100			2	1.9	4	<u>3.8</u>
10/20/2004	2100			2	0.4	1	0.0
10/22/2004	1300			1	0.4	0.5	0.2
10/25/2004	2100			2	0.8	1	0.4
10/27/2004	2100			2	1.9	0.5	0.2
10/28/2004	1600	4	0.2		1.5		
10/28/2004	2200				1.8		
10/29/2004	1000				0.4		
10/29/2004	2100				0.5		
10/30/2004	1300				0.5		
10/31/2004	2100				0		
11/1/2004	1600	5	0.5		1		
	TOTALS		0.7		22.3		9.8

#### NOTES:

- 1. Underlined volumes represent estimates of NAPL recovered based upon water/diesel fuel mixture.
- 2. Recovery of NAPL from ERW-2 began with a 4 inch Keck PRC skimmer on October 28, 2004.

APPENDIX A CERTIFICATES OF ANALYSIS

## GeoLabs, Inc.

**Environmental Laboratories** 

#### LABORATORY REPORT

PREPARED FOR:

Decoulos & Company 3 Electronics Avenue Danvers, MA 01923

Attn: Jim Decoulos

PROJECT ID:

131 Main Street

Eagle Gas Station

Carver, MA

**GEOLABS CERTIFICATION #:** 

M-MA015

**SAMPLE NUMBER:** 

149931 - 149951

DATE PREPARED:

June 16, 2004

PREPARED BY:

Christine Johnson

APPROVED BY:

Jim Chen, Laboratory Director

Location:

45 Johnson Lane

Braintree, MA 02184

Phone: (781) 848-7844

1 of 57

Fax: (781) 848-7811

## MADEP MCP Response Action Analytical Report Certification Form

Laboratory Name: Project Location:		GeoLabs, Inc. Eagle Gas Station	- -	Project #: MADEP RT	N:	131 Main St	reet
This form p	rovides certi	fications for the following	g data set:	<u> 149931 - 14</u>	9951	-	
Sample ma	trices:	Groundwater ( x )	Soil / Sedim	ient(x)	Drinking Wa	ater ( )	Other ( )
MCP SW-84	46	8260B(x) 8151A()	[8380 / \ **	6040D ( )	7.470/4 A /	lou ( )	TDUMANA
Methods U	sed	8270C(x) 8081A() 8082 (x) 8021B()	8330( ) VPH (x ) EPH (x )	6020 () 7000 S <sup>3</sup> ()	9014M <sup>2</sup> ( )	Other:(x)	TPH8100M
		1- List Release Tracking					
Compendiu		2- M - SW-846 Method	9014 or MAI	DEP Physiological	ogically Avai	lable Cyanide	e (PAC) Meti
Analytical M		3- S - SW-846 Methods	7000 Series	(List indivi	dual method	i and analyte	)
(Check all t	nat appiy)	<u> </u>					
An affirmat	ive respons	se to questions A, B, a	nd C is requ	ired for "De	ocumetivo i	Cartainte" a	tatus
, wi carmina	are respond	se to questions A, D, ai	ila o is requ	Healor Fr	esumpave	Gentainty S	lalus
Α	Were all sa that describ	mples received by the la ed on the Chain-of-Cust	boratory in a	condition co	onsistent with	Yes(x)	No¹ ( )
В		VQC procedures require				Yes (x)	No <sup>1</sup> ( )
		this report followed, inclu				1	( /
discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?							
С		nalytical data included in				Yes(x)	No <sup>1</sup> ( )
!	for "Presum	ptive Certainty", as desc	cribed in Sec	tion 2.0 of th	e MADEP		
	documents for the Acqu	CAM VII A, "Quality Ass uisition and Reporting of	urance and ( Analytical Da	Quality Contrate"?	ol Guideline	es 	10
	7						
A response	to questio	ns D and E below is re	quired for ".	Presumptiv	e Certainty	" status	
D	Were all Q0	C performance standards	s and recomi	mendations t	for the	Yes(x)	No¹()
E	specified methods achieved?  Were results for all analyte-list compounds/elements for the specified Yes ( x ) No¹ ( method(s) reported?						No¹()
		weres must be addresse	ed in an attac	hed Environ	mental Lah	retory case	narrativa
inquiry of t	rsigned, att hose respo	est under the pains an nsible for obtaining the f my knowledge and be	d penalties e e informatio	of perjury th n, the mate	nat, based u	Jpon my per	sonal
Signature:	;	Jan Ch	<u></u>	Position:	Lab Directo	οr 	
Printed Nan	ne:	Jim Chen	_	Date:			·

## GeoLabs, Inc.

**Environmental Laboratories** 

## **Case Narrative**

Project ID: 131 Main Street Client Name: Decoulos & Company Sample Number: 149931 - 149951 Received: 06/03/04

## **Physical Condition of Samples**

This project was received by the laboratory in satisfactory condition. The sample (s) were received undamaged, in appropriate containers with the correct preservation, with the following exceptions.

1. Samples received with temperature at 7° C

#### **Project Documentation**

This project was accompanied by satisfactory Chain of Custody documentation, with the following amendment(s) or correction(s):

- 1. Run TPH Fingerprint on DCW-1, per client request
- 2. Re-collecting EPH samples ESW-1, ESW-2, ESE-3, ESW-4

#### Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s).

#### SAMPLE INFORMATION

Matrix	🗷 Aqueous 🛘 Soil 🖺 Sediment 🗇 Other
Containers	■ Satisfactory □ Broken □ Leaking
Aqueous Preservative	□ N/A 图 pH ≤2 □ pH > 2 Comment:
Temperature	⊠ Received on ice ☐ Received at 4°C ☐ Other
Extraction Method	Water: Separatory Funnel Soil:

**FULL EPH ANALYTICAL RESULTS** Method for Ranges: MADEP EPH 98-1 Method for Target Analyte 8270 GC/MS Method for PAH Targets: GC/MS Client ID: BP-1 BP-2 BP-3 149931 149932 149933 Läb ID: EPH Surrogate Standards: 06/03/04 06/03/04 Date Collected: 06/03/04 06/03/04 Aliphatic COD Date Received: 06/03/04 06/03/04 06/09/04 Aromatic OTP 06/09/04 06/09/04 Date Extracted: 06/14/04 06/14/04 06/14/04 Date Fractions Analyzed: 06/11/04 06/11/04 06/11/04 EPH Fractionation Surrogates Date Targets Analyzed: Dilution Factor: 2-Fluorobiphenyl 1.0 1.0 1.0 N/A N/A 2-Bromonaphthalene Total solids (%): N/A Range/Target Analyte Units ND NĎ ND Unadjusted C11-C22 Aromatics 100 (μg/L) <u>(μg/L)</u> Naphthalene 1.00 ND ND ND Diesel PAH 2-Methylnaphthalene ND 1.00 (μg/L) ND ΝĎ Acenaphthene 1.00 <u>(μg/L</u>) Analytes ND ND ND Phenanthrene 1.00 (μg/L) ND ΝD ND <u>(μ</u>g/Ľ) Acenaphthylene 1.00 ND ND ND Fluorene 1.00 (μg/L) ND ND ND <u>(μġ/L.)</u> ND NĎ 1.00 ND Anthracene (μg/L) Fluoranthene 1.00 ND ND ND (μg/L Other 1.50 ND ND ΝĎ Pyrene <u>(μġ/L)</u> Target PAH Benz[a]Anthracene 1.00 ΝĎ NĎ ND 1.00 (µg/L) ND ND Analytes Chrysene ND Benzo[b]Fluoranthene Benzo[k]Fluoranthene <u>(μg/L)</u> ND ND 1.00 ND 0.120 (μ**g/L**) ND ND ИD Benzo[a]Pyrene Indeno[1,2,3-c,d]Pyrene <u>(μg/L)</u> 0.080 ND ND ND 0.240 <u>(μg/L)</u> ND ΝD ND Dibenzo[a,h]Anthracene 0.500 ND ND ND (µg/L) Benzo[g,h,i]Perylene 1.50 (μg/L) ND ND ND (µg/L) C9-C18 Aliphatic Hydrocarbons 100 ND ND ND C19-C36 Aliphatic Hydrocarbons 100 <u>(μg/L)</u> ND ND ND C11-C22 Aromatic Hydrocarbons 100 (µg/L) ND ND ND Aliphatic Surrogate % Recovery (COD)
Aromatic Surrogate % Recovery (OTP)
Sample Surrogate Acceptance Range
2,2'-Difluorobiphenyl % Recovery 65% 59% 42% 75% 68% 40-140% 40-140% 40-140% 61% 73% 2-Fluorobiphenyl % Recovery 17% 101% Fractionation Surrogate Acceptance Range 40-140% | 40-140%

<sup>2</sup>C<sub>11</sub>.C<sub>22</sub> Aromatic Hydrocarbons exclude concentrations of Target PAH Analytes.

CERTIFICATION	
Were all QA/QC procedures REQUIRED by the EPH Method followed	
Were all performance/acceptance standards acheived? 🗷 Yes 🗆	
Were any significant modifications made to the EPH method??	No 🔲 Yes - Details attached
I attest under the pains and penalties of perjury that, based upon my in responsible for obtaining the information, the material contained in this belief, accurate and complete.	s report is, to the best of my knowledge and
SIGNATURE: PRINTED NAME: Jirp filen	POSITION: Lab Director
PRINTED NAME: Jim Men	DATE: 6/16/04

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

#### **SAMPLE INFORMATION**

Matrix	□ Aqueous □ Soil □ Sediment □ Other	
Containers		$\Box$
Aqueous Preservative	□ N/A 絕 pH ≤2 □ pH > 2 Comment:	$\Box$
Temperature	☑ Received on ice ☐ Received at 4° C ☐ Other	
Extraction Method	Water: Separatory Funnel Soil:	

FULL EPH ANALYTIC	AL RESULTS					
Method for Ranges: MAD	DEP EPH 98-1					
Method for Target Analyte	e: 8270 GC/MS		Client ID:	DCW-3	DCW-3A	TDCW-2
Method for PAH Targets:	GC/MS		Lab ID:	149934	149935	149936
EPH Surrogate Standards	s:	Date	e Collected:	06/03/04	06/03/04	06/03/04
Aliphatic COD	<b>!</b>	Date	e Received:	06/03/04	06/03/04	06/03/04
Aromatic OTP	-	Date	e Extracted:	06/09/04	06/09/04	06/09/04
		Date Fract	ions Analyzed:	06/14/04	06/14/04	06/14/04
EPH Fractionation Surrog	jates	Date Tar	gets Analyzed:	06/11/04	06/12/04	06/12/04
2-Fluorobiphenyl		Dilu	ition Factor:	1.0	1.0	1.0
2-Bromonaphthalene		Tota	l solids (%):	N/A	N/A	N/A
Range/Target Analyte		RL	Units			
Unadjusted C11-C22 A	romatics'	100	(μg/L)	ND	ND	ND
	Naphthalene	1.00	(μg/L)	ND	ND	ND
Diesel PAH	2-Methylnaphthalene	1.00	(μg/L)	ND	ND	ND
Analytes	Acenaphthene	1.00	(μg/L)	ND	ND	D
	Phenanthrene	1.00	(μg/L)	ND	ND	ND
	Acenaphthylene	1.00	(μg/L)	ND	ND	ND.
	Fluorene	1.00	(μg/L)	ND	ND	ND
	Anthracene	1.00	(μg/L)	ND	ND	D Z
	Fluoranthene	1.00	(μg/L)	ND	ND	ND
Other	Pyrene	1.50	(μ <b>g/L</b> )	ND	ND	ND
Target PAH	Benz[a]Anthracene	1.00	(μg/L)	ND	ND	ND
Analytes	Chrysene	1.00	(μg/L)	ND	ND	ND
	Benzo[b]Fluoranthene	1.00	(μg/L)	ND	ND	ND
	Benzo[k]Fluoranthene	0.120	(μ <b>g/L</b> )	ND	ND	ND
	Benzo[a]Pyrene	0.080	(μg/L)	ND	ND :	ND
	Indeno[1,2,3-c,d]Pyrene	0.240	(μg/L)	ND	ND	ND
1	Dibenzo[a,h]Anthracene	0.500	(μg/L)	ND	ND	ND
	Benzo[g,h,i]Perylene	1.50	(μg/L)	ND	ND	ND
C9-C18 Aliphatic Hydroc		100	(μg/L)	ND	ND	ND
C19-C36 Aliphatic Hydrocarbons		100	(µg/L)	ND	ND	ND
C11-C22 Aromatic Hydrocarbons <sup>1,2</sup>		100	(μg/L)	ND	ND	ΝD
Aliphatic Surrogate % Recovery (COD)				69%	67%	80%-
Aromatic Surrogate % Recovery (OTP)				58%	81%	90%
Sample Surrogate Acceptance Range				40-140%	40-140%	40-140%
2,2'-Difluorobiphenyl %			55%	63%	72%	
2-Fluorobiphenyl % Re					105%	92%
Fractionation Surrogate	e Acceptance Range			40-140%	40-140%	40-140%
'Hydrocarbon Range data e:	xclude concentrations of any sur	rrogate(s) and/o	or internal stand	ards eluting in	that range	

<sup>2</sup>C<sub>11</sub>.C<sub>22</sub> Aromatic Hydrocarbons exclude concentrations of Target PAH Analytes.

CERTIFICATION
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CERTIFICATION	
Were all QA/QC procedures REQUIRED by the EPH Method followed	? ☑ Yes ☐ No - Details attached
Were all performance/acceptance standards acheived? 🗵 Yes 🛚	No - Details attached
Were any significant modifications made to the EPH method??	No 🛮 Yes - Details attached
I attest under the pains and penalties of perjury that, based upon my is responsible for obtaining the information, the material contained in this belief, accurate and complete.	
SIGNATURE: Chan	POSITION; Lab Director
DRINTED NAME: Borchon	DATE: 6/16/04

#### SAMPLE INFORMATION

Matrix	☑ Aqueous □ Soil □ Sediment □ Other
Containers	■ Satisfactory □ Broken □ Leaking ■ Satisfactory □ Broken □ Leaking
Aqueous Preservative	☐ N/A ত pH ≤2 ☐ pH > 2 Comment:
Temperature	Received on ice □ Received at 4° C □ Other
Extraction Method	Water: Separatory Funnel Soil:

Extraction Metrod	Water. Deparatory runner		ν,	JŲII.		
FULL EPH ANALYTIC	CAL RESULTS					
Method for Ranges: MA						
Method for Target Analy			Client ID:	KEI-4	DWC-1	MW-A
Method for PAH Targets			Lab ID:	149937	149938	149939
EPH Surrogate Standard		Date	e Collected:	06/03/04	06/03/04	06/03/04
Aliphatic COD	T T		e Received:	06/03/04	06/03/04	06/03/04
Aromatic OTP	1	Date	e Extracted:	06/09/04	06/09/04	06/09/04
	•	Date Fractions Analyzed:		06/14/04	06/14/04	06/14/04
EPH Fractionation Surro	gates		gets Analyzed:	06/12/04	06/12/04	06/12/04
2-Fluorobiphenyl	Ť		ition Factor:	1.0	1.0	1.0
2-Bromonaphthalene	-	Tota	solids (%):	N/A	N/A	
Range/Target Analyt	e ····	RL	Units			
Unadjusted C11-C22 /		100	(µg/L)	NĎ	ND	ND
	Naphthalene	1.00	(ug/L)	ND	ND	12.0
Diesel PAH	2-Methylnaphthalene	1.00	(μg/L)	NĎ	ЙD	ND
Analytes	Acenaphthene	1.00	(μg/L)	ND	ND	ND
1	Phenanthrene	1.00	(µg/L)	ND	ND	ND
1	Acenaphthylene	1.00	(μg/L)	ND	ND	ND
	Fluorene	1.00	(μg/L)	ND	ND	ND
	Anthracene	1.00	(µg/L)	ND	ND	ND
	Fluoranthene	1.00	(μg/L)	ND	ND	ND
Other	Pyrene	1.50	(µg/L)	ND	ND	ND
Target PAH	Benz[a]Anthracene	1.00	(μg/L)	DZ	ND	ND
Analytes	Chrysene	1.00	(μg/L)	ND	ND	ND
	Benzo[b]Fluoranthene	1.00	(μg/L)	ND	ND	ND
	Benzo[k]Fluoranthene	0.120	(μg/L)	ND	ND	ND
	Benzo[a]Pyrene	0.080	(μg/L)	ND	ND	ND
	Indeno[1,2,3-c,d]Pyrene	0.240	(μg/L)	ND	ND	ND
•	Dibenzo[a,h]Anthracene	0.500	(μg/L)	ND	ND	ND
	Benzo[g,h,i]Perylene	1.50	(μg/L)	ND	ND	ND
C9-C18 Aliphatic Hydrod	100	(μg/L)	ND	ND	ND	
C19-C36 Aliphatic Hydrocarbons		100	(μg/L)	ND	ND	ND
C11-C22 Aromatic Hydrocarbons <sup>1,2</sup>		100	(μg/L)	ND	ND	ND
Aliphatic Surrogate % Recovery (COD)		,		70%	64%	70%
Aromatic Surrogate % Recovery (OTP)				81%	# 82% W	73%
Sample Surrogate Ac			40-140%	40-140%	40-140%	
2,2'-Difluorobiphenyl				73%	69%	12%
2-Fluorobiphenyl % R				4.07%	101%	110%
Fractionation Surroga	te Acceptance Range			40-140%	40-140%	40-140%
Tr						

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

2C11.C22 Aromatic Hydrocarbons exclude concentrations of Target PAH Analytes.

### CERTIFICATION

<del></del>				
Were all QA/QC procedures REQUIRED by the EPH Method follo	wed'	? ×	Yes	□ No - Details attached
Were all performance/acceptance standards acheived? 图 Yes				
Were any significant modifications made to the EPH method??	×	Νo	☐ Ye	s - Details attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the Information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

PRINTED NAME: Jim Charles

POSITION: Lab Director

DATE: 6/16/04

#### SAMPLE INFORMATION

Matrix	☐ ☑ Aqueous ☐ Soil ☐ Sediment ☐ Other
Containers	I ☑ Satisfactory □ Broken □ Leaking
Aqueous Preservative	☐ N/A 및 pH ≤ 2 ☐ pH > 2 Comment:
Temperature	☑ Received on ice ☐ Received at 4°C ☐ Other
Extraction Method	Water: Separatory Funnel Soil:

		-	'			
FULL EPH ANALY	TICAL RESULTS					
Method for Ranges:	MADEP EPH 98-1					
Method for Target An	ialyte: 8270 GC/MS		Client ID:			
Method for PAH Targ	ets: GC/MS	·	Lab ID:	149940		
EPH Surrogate Standards:		Dat	e Collected:	06/03/04		
Aliphatic COD			e Received:	06/03/04		
Aromatic QTP		Dat	e Extracted:	06/09/04		"
		Date Fract	ions Analyzed:	06/14/04		
EPH Fractionation Su	urrogates		gets Analyzed:	06/12/04		
2-Fluorobiphenyl		Dili	ition Factor:	1.0		
2-Bromonaphthalene		Tota	i solids (%):	N/A		
Range/Target Ana	lyte	RL	Units	1		
Unadjusted C11-C2	2 Aromatics	100	(μg/L)	ND		·-
	Naphthalene	1.00	(μg/L)	ND T		
Diesel PAH	2-Methylnaphthalene	1.00	(μg/L)	ND	<u> </u>	
Analytes	Acenaphthene	1.00	(µg/L)	ND		+
	Phenanthrene	1.00	(μα/L)	ND I		+
	Acenaphthylene	1.00	(μg/L)	ND I		+
	Fluorene	1.00	(jug/L)	ND		
	Anthracene	1.00	(μg/L)	ND I		†
	Fluoranthene	1.00	(μg/L)	ND I		<b>†</b>
Other	Pyrene	1.50	(µg/L)	ND I		+
Target PAH	Benz[a]Anthracene	1.00	(μg/L)	ND		1
Analytes	Chrysene	1.00	(µg/L)	ND I		<del> </del>
	Benzo[b]Fluoranthene	1.00	(µg/L)	ND ND		•
	Benzo[k]Fluoranthene	0.120	(μg/L)	ND		· <del> </del>
	Benzo[a]Pyrene	0.080	(µg/L)	ND I		
l	Indeno[1,2,3-c,d]Pyrene	0.240	(jug/L)	ND		
	Dibenzo[a,h]Anthracene	0.500	(μg/L)	ND ND		<del>                                     </del>
	Benzo[g,h,i]Perylene	1.50	(µg/L)	ND		
C9-C18 Aliphatic Hyd	Irocarbons	100	(µg/L)	ND		<u> </u>
C19-C36 Aliphatic Hy	/drocarbons	100	(µg/L)	ND		+
C11-C22 Aromatic Hy	ydrocarbons'.2"	100	(μg/L)	ND		-
Aliphatic Surrogate	% Recovery (COD)			83%		<del>                                     </del>
Aromatic Surrogate	% Recovery (OTP)		<del>                                     </del>	92%		
Sample Surrogate	Acceptance Range			40-140%		1
2,2'-Difluorobiphen	vl % Recovery			7126		+
2-Fluorobiphenyl %	Recovery			71.410676		<del> </del>
Fractionation Surro	gate Acceptance Range		<del>                                     </del>	40-140%		-
Hydrocarbon Range da	ta exclude concentrations of any sun	rogate(s) and/o	r internal stands	ardo ofutino lo th	ot room	<u> </u>
C <sub>11</sub> C <sub>22</sub> Aromatic Hydro	carbons exclude concentrations of T	need DAU A	in too	aras erannā III tr	ariange	

<sup>2</sup>C<sub>11</sub>.C<sub>22</sub> Aromatic Hydrocarbons exclude concentrations of Target PAH Analytes.

### CERTIFICATION

OLIVIII IOATION				
Were all QA/QC procedures REQUIRED by the EPH Method folio	wed'	? <b>x</b>	Yes	☐ No - Details attached
Were all performance/acceptance standards acheived? 🗷 Yes		No -	Detail	s attached
Were any significant modifications made to the EPH method??	冤	No	□ Ye	es - Details attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:

POSITION: Lab Director DATE: 6/16/04

# EPH - QC - Ranges EXTRACTABLE PETROLEUM HYDROCARBONS

## QC RESULTS

	Method	MDL	Spike %	Spike %			
	Blank	(μ <b>g/L)</b>		Recovery 2		RPD	%
*c9-c18 Aliphatics	28.3	100	44.5	49.5	40-140	8.8	≤ 50
c19-c36 Aliphatics	15000000 <b>34</b> 10000000	100		#15	40-140	7,3	<u>≤</u> 50
c11-c22 Aromatics	**************************************	100	52.0	73.0	40-140	31.6	<u>≤</u> 50

## Surrogate % Recovery:

COD	88%	40-140	//////66%/ahamanii90%/ahama	40-140	30.1%	≤ 50
OTP	82%	40-140	62% 73%	40-140	16.5%	≤ 50

## EPH - QC Target Analyte EXTRACTABLE PETROLEUM HYDROCARBONS

## QC RESULTS

	Method	Spike %	Spike %	Limits
	Blank	Recovery 1	Recovery 2	%
Acenaphthene	ND	58%	48%	40-140%
Phenanthrene	ND	87%	68%	40-140%
Pyrene	ND	96%	86%	40-140%
Chrysene	ND	98%	91%	40-140%
indeno [1,2,3-cd] pyrene	ND	90%	85%	40-140%

SAMPLE	INF	ORM	IATI	ION
--------	-----	-----	------	-----

Matrix		oil 🗆 Sedim		Other		
Containers		Broken □ L				ŀ
Aqueous Preservative	■ N/A □ pH ≤ 2 □	□ pH > 2 Co	mment:			
Temperature	Received on ice	☐ Rece	ved at 4° C	☐ Other		
Extraction Method	Water:		Soil: Soxhlet	t		
FULL EPH ANALYTICA	AL RESULTS					
Method for Ranges: MAD			Client ID:	ESE-1		
Method for Target Analyte			Lab ID:	149941		
EPH Surrogate Standards		Date	Collected.	06/03/04		
Aliphatic COD			Received:	06/03/04		
Aromatic OTP		Date	Extracted:	06/04/04		
		Date Fracti	ons Analyzed:	06/10/04		
EPH Fractionation Surroga	ates:	Date Tar	gets Analyzed:	06/09/04		
2-Fluorobiphenyl		Dilu	tion Factor:	1.0 / 5.0*	!	
2-Bromonaphthalene			solids (%):	. 76		
Range/Target Analyte		RL	Units			
Unadjusted C11-C22 A	romatics'	10.0	mg/Kg	324		
	Naphthalene	0.050	mg/Kg	ND		
Diesel PAH	2-Methylnaphthalene	0.050	mg/Kg	0.716		
Analytes	Acenaphthene	0.100	mg/Kg	ND		
	Phenanthrene	0.050	mg/Kg	1.30		
•	Acenaphthylene	0.050	mg/Kg	ND		
	Fluorene	0.025	mg/Kg	0.403		
	Anthracene	0.050	mg/Kg	ND		
	Fluoranthene	0.200	mg/Kg	1.36		
Other	Pyrene	0.200	mg/Kg	1.05		
Target PAH	Benz[a]Anthracene	0.100	mg/Kg	0.366		
Analytes	Chrysene	0.100	mg/Kg	0.637		
	Benzo[b]Fluoranthene	0.150	mg/Kg	0.734		
	Benzo[k]Fluoranthene	0.100	mg/Kg	0.300		
	Benzo[a]Pyrene	0.100	mg/Kg	0.382		
•	Indeno[1,2,3-c,d]Pyrene	0.050	mg/Kg	0.250		
	Dibenzo[a,h]Anthracene	0.100	mg/Kg	ND		
	Benzo[g,h,i]Perylene	0.100	mg/Kg	0.324		
C9-C18 Aliphatic Hydro		50.0*	mg/Kg	398		
C19-C36 Aliphatic Hydi		10.0	mg/Kg	402		
C <sub>11</sub> -C <sub>22</sub> Aromatic Hyd		10.0	mg/Kg	316		
Aliphatic Surrogate % F				83%		
Aromatic Surrogate % F				102%		
Sample Surrogate Acce				40-140%		
2,2'-Difluorobiphenyl %				60%		
2-Fluorobiphenyl % Red				87%		
Fractionation Surrogate	Acceptance Range			40-140%		
	clude concentrations of any sur			ards eluting in	that range	
	ons exclude concentrations of T	Farget PAH Ana	ıly tės.			,
CERTIFICATION						
	es REQUIRED by the EPH				etails attache	ed
Were all performance/acceptance standards acheived?   ■ Yes □ No - Details attached						
Were any significant modifications made to the EPH method??						
I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and						
belief, accurate and comp	lete.		·	to the best o	f my knowled	lge and
SIGNATURE: POSITION: Lab Director PRINTED NAME: Jim Character DATE: 06/16/04						
PRINTED NAME	Jim Ches			DATE:	06/16/04	ļ

#### **SAMPLE INFORMATION**

Matrix	☐ Aqueous 🖾 Soil 🗆 Sediment 🗆 Other
Containers	■ Satisfactory □ Broken □ Leaking
Aqueous Preservative	☑ N/A ☐ pH ≤2 ☐ pH > 2 Comment:
Temperature	■ Received on ice □ Received at 4° C □ Other
Extraction Method	Water: Soil: Soxhlet

			TONI COMING	<u> </u>	
FULL EPH ANALYTIC	AL RESULTS				
Method for Ranges: MAD	EP EPH 98-1		Client ID:	ESE-2	- Į
Method for Target Analyte		"Lab (D:		149942	<del></del>
EPH Surrogate Standards		Date	e Collected:	06/03/04	
Aliphatic COD			e Received:	06/03/04	
Aromatic OTP			Extracted:	06/04/04	
		Date Fracti	ions Analyzed:	06/10/04	
EPH Fractionation Surrog	ates:	Date Tar	gets Analyzed:	06/09/04	
2-Fluorobiphenyl		Dilu	tion Factor.	1.0 / 5.0*	
2-Bromonaphthalene.		Tota	solids (%):	71	
Range/Target Analyte		RL	Units		
Unadjusted C11-C22 A	romatics'	10.0	mg/Kg	860	
	Naphthalene	0.050	mg/Kg	ND	
Diesel PAH	2-Methylnaphthalene	0.050	mg/Kg	1.06	
Analytes	Acenaphthene	0.100	mg/Kg	ND	
	Phenanthrene	0.050	mg/Kg	4.38	
	Acenaphthylene	0.050	mg/Kg	ND	
	Fluorene	0.025	mg/Kg	0.738	
	Anthracene	0.050	mg/Kg	ND	
	Fluoranthene	0.200	mg/Kg	7.10	
Other	Pyrene	0.200	mg/Kg	5.38	
Target PAH	Benz[a]Anthracene	0.100	mg/Kg	2.15	
Analytes	Chrysene	0.100	mg/Kg	3.32	
_	Benzo[b]Fluoranthene	0.150	mg/Kg	3.62	
	Benzo[k]Fluoranthene	0.100	mg/Kg	1.12	
	Benzo[a]Pyrene	0.100	mg/Kg	1.87	
	Indeno[1,2,3-c,d]Pyrene	0.050	mg/Kg	1.06	
	Dibenzo[a,h]Anthracene	0.100	mg/Kg	0,414	
	Benzo[g,h,i]Perylene	0.100	mg/Kg	1.31	
C9-C18 Aliphatic Hydro	ocarbons	50*	mg/Kg	1480	
C19-C36 Aliphatic Hyd	rocarbons'	50*	mg/Kg	1240	-
C <sub>11</sub> -C <sub>22</sub> Aromatic Hyd	rocarbons <sup>1,2</sup>	10.0	mg/Kg	826	
Aliphatic Surrogate % F	Recovery (COD)			93%	
Aromatic Surrogate % I				106%	
Sample Surrogate Acce				40-140%	
2,2'-Difluorobiphenyl % Recovery				63%	
2-Fluorobiphenyi % Red				84%	
Fractionation Surrogate				40-140%	
'Hydrocarbon Range data ex	clude concentrations of any sur	rogate(s) and/c	r internal stand	ards eluting in that	range
ly .					<b>.</b>

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range 2C<sub>11-C22</sub> Aromatic Hydrocarbons exclude concentrations of Target PAH Analytes.

#### CERTIFICATION

Were all QA/QC procedures REQUIRED by the EPH Method follow	wed'	? ×	Yes	□ No - Details attached
Were all performance/acceptance standards acheived?   Yes		No-	Details	attached
Were any significant modifications made to the EPH method??	×	No	☐ Ye	s - Details attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

a, accurate and complete.			
SIGNATURE:	Grown Chin	POSITION: L	ab Director
PRINTED NAME: Jim	onen	DATE:	06/16/04
-	•		

#### SAMPLE INFORMATION

SAMPLE INFORMAT								
Matrix		il 🛭 Sedim		Other				
Containers		Broken 🗆 L						
Aqueous Preservative		N/A □ pH ≤2 □ pH > 2 Comment:						
Temperature	Received on ice	☐ Rece	ived at 4° C	□ Other				
Extraction Method	Water:		Soil: Soxhle	t				
FULL EPH ANALYTIC	CAL RESULTS							
Method for Ranges: MA			Client ID:	ESE-3		ı		
Method for Target Analy			Lab ID:	149943		1		
EPH Surrogate Standard		Dat	e Collected:					
Aliphatic COD	Ţ	Dat	e Received:	06/03/04				
Aromatic OTP	Ī		e Extracted:	06/04/04				
	Ī		ions Analyzed:	06/10/04				
EPH Fractionation Surro	ogates:	Date Tar	gets Analyzed:	06/09/04		ļ		
2-Fluorobiphenyl	Γ	Dilt	ition Factor:	1.0 / 5.0* / 1	0**			
2-Bromonaphthalene			l solids (%):	68				
Range/Target Analyt		RL	Units		_			
Unadjusted C11-C22	Aromatics <sup>1</sup>	10.0	mg/Kg	1440				
	Naphthalene	0.050	mg/Kg	ND				
Diesel PAH	2-Methylnaphthalene	0.050	mg/Kg	1.93				
Analytes	Acenaphthene	0.100	mg/Kg	ND				
	Phenanthrene	0.050	mg/Kg	4.47				
12.001	Acenaphthylene	0.050	mg/Kg	ND				
	Fluorene	0.025	mg/Kg	ND				
	Anthracene	0.050	mg/Kg	ND				
	Fluoranthene	0.200	mg/Kg	6.43				
Other	Pyrene	0.200	mg/Kg	5.00				
Target PAH	Benz[a]Anthracene	0.100	mg/Kg	1.87				
Analytes	Chrysene	0.100	mg/Kg	3.00				
,	Benzo[b]Fluoranthene	0.150	mg/Kg	3.53				
	Benzo[k]Fluoranthene	0.100	mg/Kg	0.991		1		
	Benzo[a]Pyrene	0.100	mg/Kg	1.79				
	Indeno[1,2,3-c,d]Pyrene	0.050	mg/Kg	1.14				
	Dibenzo[a,h]Anthracene	0.100	mg/Kg	0.350		i		
	Benzola,h,ilPerviene	0.100	mg/Kg	1.37				
C9-C18 Allphatic Hyd		100**	mg/Kg	1800				
C19-C36 Aliphatic Hy		50.0*	mg/Kg	1450				
C11-C22 Aromatic Hy		10.0	mg/Kg	1410				
Aliphatic Surrogate %				99%		· · · · · · · · · · · · · · · · · · ·		
Aromatic Surrogate %				103%				
Sample Surrogate Ac				40-140%		1		
2,2'-Difluorobiphenyl				77%				
2-Fluorobiphenyl % R				104%				
	te Acceptance Range	<del></del> "		40-140%		1		
I radionadon ourroga	in Acceptance Manage		L., , , , , , , , , , , , , , , , , , ,	1 40-14076	<u> </u>	l .		

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range <sup>2</sup>C<sub>11</sub>.C<sub>22</sub> Aromatic Hydrocarbons exclude concentrations of Target PAH Analytes.

CERT	IF.	ICAT	ION

Were all QA/QC procedures REQUIRED by the EPH Method follow	ved?	) )c	Yes	☐ No - Details attached
Were all performance/acceptance standards acheived? 🗵 Yes				
Were any significant modifications made to the EPH method??	阿	No	□ Ye	s - Details attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals Immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE: Office Cham	POSITION: L	ab Director
PRINTED NAME; Jum Chen	DATE:	06/16/04

SAMPLE INFORMATION								
Matrix	☐ Aqueous 区 Sc	oil 🗆 Sediπ	ient 🗆 C	Other				
Containers	Satisfactory □ B	Broken 🗆 L	eaking					
Aqueous Preservative	☑ N/A □ pH ≤ 2 [	□ pH > 2 Co	mment:	•				
Temperature	🗵 Received on ice	☑ Received on ice ☐ Received at 4° C ☐ Other						
Extraction Method	Water:		Soil: Soxhlet					
				·				
FULL EPH ANALYTIC			CI: ID.I	FCE A		_		
Method for Ranges: MAD			Client ID:	ESE-4 149944				
Method for Target Analyte		D-t-	Lab ID:	06/03/04				
EPH Surrogate Standards	5.		e Collected:	06/03/04				
Aliphatic COD Aromatic OTP	ŀ		e Received: e Extracted:	06/04/04				
Aromauc OTP	ŀ			06/10/04				
EPH Fractionation Surrog	intoe:		ons Analyzed:	06/09/04				
2-Fluorobiphenyl	jates.		gets Analyzed: Ition Factor:	1.0 / 5.0*		-		
2-Bromonaphthalene			solids (%):	74		ļ		
Range/Target Analyte		RL	Units	14	1			
Unadjusted C11-C22		10.0		363				
Onaujusteu OTF-022 A		0.050	mg/Kg mg/Kg	ND				
Diesel PAH	Naphthalene	0.050				1		
	2-Methylnaphthalene		mg/Kg	ND		<u> </u>		
Analytes	Acenaphthene	0.100	mg/Kg	ND				
	Phenanthrene	0.050	mg/Kg	1.35				
	Acenaphthylene	0.050	mg/Kg	ND		<u>ļ</u>		
	Fluorene	0.025	mg/Kg	ND		1		
	Anthracene	0.050	mg/Kg	ND				
	Fluoranthene	0.200	mg/Kg	1.41				
Other	Pyrene	0.200	mg/Kg	1.27				
Target PAH	Benz[a]Anthracene	0.100	mg/Kg	0.443				
Analytes	Chrysene	0.100	mg/Kg	0.630				
	Benzo[b]Fluoranthene	0.150	mg/Kg	0.705		<u> </u>		
	Benzo[k]Fluoranthene	0.100	mg/Kg	0.235				
	Benzo[a]Pyrene	0.100	mg/Kg	0.335		1		
	Indeno[1,2,3-c,d]Pyrene	0.050	mg/Kg	0.214				
	Dibenzo[a,h]Anthracene	0.100	mg/Kg	D				
	Benzo[g,h,i]Perylene	0.100	mg/Kg	0.249				
C9-C18 Aliphatic Hydr	ocarbons'	50.0*	mg/Kg	494				
C19-C36 Aliphatic Hyd		10.0	mg/Kg	408				
C11-C22 Aromatic Hyd	irocarbons' <sup>,</sup>	10.0	mg/Kg	356				
Aliphatic Surrogate %	Recovery (COD)			85%		<u> </u>		
Aromatic Surrogate %	Recovery (OTP)			92%///		'		
Sample Surrogate Acc	eptance Range			40-140%				
2,2'-Difluorobiphenyl %		i		78%				
2-Fluorobiphenyl % Re				104%				
Fractionation Surrogate				40-140%	l	1		
	xclude concentrations of any sur	rrogate(s) and/o	or internal stand		that range			
a.	ons exclude concentrations of T							
CERTIFICATION								
	ires REQUIRED by the EPH		ved? 🗵 Ye:	₃ □ No-D	etails attache	ed		
•	ceptance standards acheive		□ No - Deta					
Were any significant mod	difications made to the EPH	method??	⊠ No □	Yes - Details	attached			
I attest under the pains a responsible for obtaining belief, accurate and com	and penalties of perjury that, the information, the materia plete.	based upon r I contained in	ny inquiry of t this report is,	hose individu to the best o	als immediat f my knowled	ely dge and		
SIGNATURE		11		POSITION:	Lab Direct	ог		

DATE: 06/16/04

#### **SAMPLE INFORMATION**

Matrix	☐ Aqueous 図 Soil ☐ Sediment ☐ Other	
Containers	■ Satisfactory □ Broken □ Leaking	
Aqueous Preservative	■ N/A □ pH ≤ 2 □ pH > 2 Comment:	
Temperature	■ Received on ice □ Received at 4° C □ Other	
Extraction Method	Water: Soil: Soxhlet	

-Account Modios	Trace.		JOIL JOXIIIC	·L		
FULL EPH ANALYTICAL RESULTS						
Method for Ranges: MAD	EP EPH 98-1		Client ID:	E\$E-5	ESE-6	E\$E-7
Method for Target Analyte	±8270 GC/M\$		Lab ID:	149945	149946	149947
EPH Surrogate Standards:		Dat	e Collected:	06/03/04	06/03/04	06/03/04
Aliphatic COD	İ	Dat	e Received:	06/03/04	06/03/04	06/03/04
Aromatic OTP	ľ	Date	e Extracted:	06/04/04	06/04/04	06/04/04
		Date Fract	ions Analyzed:	06/10/04	06/10/04	06/10/04
EPH Fractionation Surrog	ates:	Date Tar	gets Analyzed:	06/09/04	06/09/04	06/09/04
2-Fluorobiphenyl	[	Dilu	tion Factor:	1.0	1.0	1.0
2-Bromonaphthalene			l solids (%):	47	51	32
Range/Target Analyte		RL	Units			
Unadjusted C <sub>11</sub> -C <sub>22</sub> A	Aromatics'	10.0	mg/Kg	294	102	105
	Naphthalene	0.050	mg/Kg	ND	ND	ND
Diesel PAH	2-Methylnaphthalene	0.050	mg/Kg	ND	ND	ND
Analytes	Acenaphthene	0.100	mg/Kg	ND	ND	ND
L	Phenanthrene	0.050	mg/Kg	0.404	0.325	0.244
	Acenaphthylene	0.050	mg/Kg	ND	ND	ND
	Fluorene	0.025	mg/Kg	ND	ND	ND
	Anthracene	0.050	mg/Kg	ND	ND	ND
	Fluoranthene	0.200	mg/Kg	1.08	0.847	0.431
Other	Pyrene	0.200	mg/Kg	0.838	0.780	0.431
Target PAH	Benz[a]Anthracene	0.100	mg/Kg	0.421	0.490	0.281
Analytes	Chrysene	0.100	mg/Kg	0.621	0.569	0.294
	Benzo[b]Fluoranthene	0.150	mg/Kg	0.647	0.631	0.331
	Benzo[k]Fluoranthene	0.100	mg/Kg	0.234	0.298	ND
1	Benzo[a]Pyrene	0.100	mg/Kg	0.391	0.341	0.194
1	Indeno[1,2,3-c,d]Pyrene	0.050	mg/Kg	0.217	0.231	ND
	Dibenzola,hiAnthracene	0.100	mg/Kg	ND	ND	NĎ
	Benzo[g,h,i]Perylene	0.100	mg/Kg	0.332	0.302	0,156
C9-C18 Aliphatic Hydro	ocarbons'	10.0	mg/Kg	153	ND	ND
C19-C36 Aliphatic Hyd	rocarbons <sup>1</sup>	10.0	mg/Kg	605	318	272
C11-C22 Aromatic Hyd		10.0	mg/Kg	289	97	103
Aliphatic Surrogate % F	Recovery (COD)		, v	89%	86%	92%
Aromatic Surrogate % I			i	110%		94%
Sample Surrogate Acce				40-140%	40-140%	40-140%
2,2'-Difluorobiphenyl %				73%		
2-Fluorobiphenyl % Re					73%	
I - 1				A MARKAGE PARTY AND A STREET OF THE STREET		A THE RESERVE OF THE PROPERTY

Fractionation Surrogate Acceptance Range 40-140% 40-140% 40-140% Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range  $^{2}C_{11}$ . $C_{22}$  Aromatic Hydrocarbons exclude concentrations of Target PAH Analytes.

#### CERTIFICATION

Were all QA/QC procedures REQUIRED by the EPH Method follog	wed'	? 🗷	Yes	□ No - De	etails attached
					*******************
Were all performance/acceptance standards acheived? 🗷 Yes		No -	<ul> <li>Details</li> </ul>	attached	
	_				
Were any significant modifications made to the EPH method??	×	Nα	$\sqcap \vee_{\circ}$	e _ Dotaile :	attachod
		111		o - Pomilio (	auconios

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE: PRINTED NAME: Jim Quen

POSITION: Lab Director DATE: 06/16/04

#### QC RESULTS

	***	A 1/PAAP	•	
		MDL	LC\$\$1	Limit
	SB	(mg/Kg)	% Rec.	%
*c9-c18 Aliphatics	6.49	10	49.3	40-140
c19-c36 Aliphatics	4.66	10	104	40-140
-44 -00 4			**************************************	
c11-c22 Aromatics	4.86	10	14.9	40-140
-	1			
Surrogate % Recovery:				
22232 .0 110004017.	J			
ÇOD	90%		97%	40-140
OTP	63%		86%	40-140

# EPH - QC Target Analyte EXTRACTABLE PETROLEUM HYDROCARBONS

## QC RESULTS

		Spike %	Spike %	Limits
	Blank	Recovery 1	Recovery 2	%
Acenaphthene	ND	61%	49%	40-140%
1		,		•
Phenanthrene	ND	85%	72%	40-140%
Pyrene	ND	105%	94%	40-140%_
Chrysene	ND	93%	87%	40-140%
Indeno [1,2,3-c,d] pyrene	ND	79%	75%	40-140%

SAN	API I	= IMI	FOR	МА	TION

Matrix   ⊠ Aque	⊠ Aqueous □ Soil o Sediment □ Other						
Containers 🗵 Satisf	actory	☐ Broken	🗀 Leaking				
Aqueous 🗆		9 pH <u>&lt;</u> 2 □					
Sample Soil or 🗆	N/A 🗆	Samples NO	T preserved i	n MeOH or ai	r-tight contain	ers	ml MeOH
Preservative Sediment 🔲	Samples	received in I	VeÔH □	Covering soil	? □ Not		□1:1 <u>±</u> 25%
	Receive	d in air tight c	ontainer	,			□ Other
Temperature ⊠ Rece	ived on ic	e □ Re	ceived at 4° (	□ Other			
	_						
VPH ANALYTICAL RESUL							
Method for Ranges: MADEP \				Client ID:	BP-1	BP-2	BP-3
Method for Target Analytes: M	IA VPH -	GC/MS		Lab ID:	149931	149932	149933
VPH Surrogate Standards				e Collected:	06/03/04	06/03/04	06/03/04
	-Dibromot	oluene		e Received:	06/03/04	06/03/04	06/03/04
,	-DÇE			e Analyzed:	06/10/04	06/10/04	06/10/04
	цепе-ф8			ition Factor.	1.0	1.0	1.0
BFE	3			l solids (%).	N/A	N/A	N/A
Range/Target Analyte		Elut. Range	RL	Units			
Unadjusted C5-C8 Aliphatic		N/A	40.0	μg/L	2	ND	ND
Unadjusted C9-C12 Aliphati	cs'	N/A	15.0	μg/L	ND	ND	ND
Benzene		C5-C8 Aliph	5.0	μg/L	ND	ND	ND
Ethylbenzene		C5-C8 Aliph	5.0	μg/L	ND	ND	ND
Methyl-tert-butyl ether		C5-C8 Aliph	5.0	μg/L	ND	16.8	ND
Naphthalene		N/A	20.0	μg/L	ND	ND	ND
Toluene		C5-C8 Aliph	5.0	μg/L	ND	ND	ND
m-,p-Xylenes	n-,p-Xylenes   C5-C8 Aliph   5.0   μg/L   ND   ND   N				ND		
o-Xylene		C9-C12 Aliph.	5.0	μg/L	ND	ND	ND
C5-C8 Aliphatic Hydrocarbo		N/A	40.0	μg/L	ND	ND	ND
C9-C12 Aliphatic Hydrocarb		" N/A	15.0	μg/L	ND	ND	ND
C9-C10 Aromatic Hydrocarb		N/A	55.0	μg/L	ND	ND	ND
1,2-DCE Surrogate Recove	ry				107%	106%	11176
aluano de Currocata V/ Boardon / Pagaron / Pag							

<sup>2,5-</sup>Dibromotoluene Surrogate Recovery

Surrogate Acceptance Range

'Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or Internal standards eluting in that range

#### CERTIFICATION

Toluene-d8 Surrogate % Recovery BFB Surrogate % Recovery

Were all QA/QC procedures REQUIRED by the VPH Method fol	lowed? ⊠ Yes □ No - Details attached							
Were all QA/QC performance /acceptance standards achieved?	Yes  No - Details attached							
Were any significant modifications made to the VPH method?	☐ No ☑ Yes - Details below							
Aromatic and aliphatic ranges are quantitated by GC/MS Total Ion Chromatogram and all targets are quantitated by GC/MS Selected Ion Measurements.								
I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immedately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge, accurate and complete.								
SIGNATURE: PRINTED NAME Im Chen	POSITION: Lab Director							
PRINTED NAME Tim Chen	DATE: 06/16/04							

70-130% | 70-130%

 $<sup>^2\</sup>text{C}_5.\text{C}_8$  Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

<sup>&</sup>lt;sup>3</sup>C<sub>9</sub>.C<sub>12</sub> Aliphatic HCs exclude concentrations of Target Analytes AND C<sub>9</sub>.C<sub>10</sub> Aromatic Hydrocarbons eluting in that range

SAM	PL	E.	IN	FΟ	RN	IAI	10	٧
-----	----	----	----	----	----	-----	----	---

OPMIN FF II		IVII						
Matrix	X	Aqueous 🗆			Other			
Containers	×		□ Broken					
	Aqueous			pH > 2 Com				
Sample	Soil or				n MeQH or air		ers	ml MeOH
Preservative:	Sediment				Covering soil	? □ Not		□1:1 <u>±</u> 25%
			d in air tìght c					□ Other
Temperature	×	Received on ic	e □ Re	ceived at 4° (	○ Other			
VPH ANAL	YTICAL R	ESULTS						
Method for R	langes: MA	ADEP VPH GC/N	<b>1</b> S		Client ID:	DCW-3	DCW-3A	DCW-2
Method for T	arget Analy	rtes: MA VPH -	GC/MS		Lab ID:	149934	149935	149936
VPH Surroga	ate Standar	ds		Dat	e Collected:	06/03/04	06/03/04	06/03/04
		2,5-Dibromot	oluene	Dat	e Received:	06/03/04	06/03/04	06/03/04
		1,2-DCE		Dat	e Analyzed:	06/10/04	06/10/04	06/10/04
<b>!</b>		Toluene-d8		Dilu	ition Factor:	1.0	1.0	1.0
		BFB		Tota	l solids (%):	N/A	N/A	N/A
Range/Targ			Elut, Range	RL.	Units	ı		
Unadjusted			N/A	40.0	μg/L	ND	ND	ND
Unadjusted	C9-C12 A	liphatics'	N/A	15.0	μg/L	ND	ND	ИĎ
Benzene			C5-C8 Aliph	5.0	μg/L	ЙN	ND	ND
Ethylbenzei		•	C5-C8 Aliph	5.0	μg/L	ND	ND	ND
Methyl-teri		er	C5-C8 Aliph	5.0	μg/L	ND	ND	45.8
Naphthalen	e		N/A	20.0	μg/L	ND	ND	ND
Toluene			C5-C8 Aliph	5.0	μg/L	ND	ND	ND
m-,p-Xylene	es		C5-C8 Aliph	5.0	μg/L	D	ND	ND
o-Xylene			Ç9-Ç12 Aliph.	5.0	μg/L	D	ND	ND
C5-C8 Aliph			N/A	40.0	μg/L	ND	ND	ND.
C9-C12 Alip			N/A	15.0	μg/L	ND	ND	ND
1	Ce-C10 Aromatic Hydrocarbons N/A 55.0 μg/L ND ND ND							
1,2-DCE St						110%		110%
		∍ % Recovery					106%	103%
	BFB Surrogate % Recovery 103% 198% 104%							
		Surrogate Reco	very				121%	
Surrogate A	\cceptanc	e Range				70-130%	70-130%	70-130%
1			-					

Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

## CERTIFICATION

	1.00					
Were all QA/QC procedures REQUIRED by the VPH Method followere all QA/QC performance /acceptance standards achieved? Were any significant modifications made to the VPH method?	owed? ⊠ Yes □ No - Details attached ☑ Yes □ No - Details attached □ No ☑ Yes - Details below					
Aromatic and aliphatic ranges are quantitated by GC/MS Total lor quantitated by GC/MS Selected Ion Measurements.	n Chromatogram and all targets are					
I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immedately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge, accurate and complete.						
SIGNATURE: PRINTED NAME Jim Chen	POSITION: Lab Director					
PRINTED NAME. Jim Chen	DATE: 06/16/04					

<sup>&</sup>lt;sup>2</sup>C<sub>5</sub>.C<sub>8</sub> Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

³C<sub>9</sub>C<sub>12</sub> Aliphatic HCs exclude concentrations of Target Analytes AND C<sub>9</sub>C<sub>10</sub> Aromatic Hydrocarbons eluting in that range

SAMP		INIE	$\sim$	4 A T	-
SHIVIE	ᅜᄃ	ИАС	UNI	1	IVI

Matrix	X	Aqueous 🗆			Other			<u>"</u>
Containers	×	Satisfactory						
	Aqueous			pH > 2 Com				
Sample	Soil or				n MeQH or air		ers	ml MeOH
Preservative:	Sediment				Covering soil :	? □ Not		□1:1±25%
			d in air tight c					Other
Temperature	×	Received on ic	e 🗆 Re	ceived at 4° (	☐ Other			
VPH ANAL	VTICAL D	EQUITE						
		DEP VPH GC/N	rs i		Client ID:I	KEI-4		
		tes: MA VPH -			Lab ID:	149937		
VPH Surroga			55,,,,,	Date	Collected:	06/03/04	•	
		2.5-Dibromot	oluene		Received:	06/03/04		
		1,2-DCE	,		e Analyzed:	06/10/04		
		Toluene-d8			tion Factor:	1.0		
		BFB		Total solids (%):		N/A		
Range/Targ	et Analyte		Elut. Range	RL.	Units			
Unadjusted			N/A	40.0	μg/L	ND		
Unadjusted	C9-C12 Al	iphatics'	N/A	15.0	μg/L	ND		
Benzene		•	Ċ5-C8 Aliph	5.0	μg/L	ND		l
Ethylbenzei	ne		C5-C8 Aliph	5.0	μg/L	ND		
Methyl-tert-	butyl ether	•	C5-C8 Aliph	5.0	μg/L	ŇD		
Naphthalen	e		N/A	20.0	μġ/L	ND		
Toluene			C5-C8 Aliph	5.0	μġ/L	ND		
m-,p-Xylene	es		C5-C8 Aliph	5.0	μg/L	ND		
o-Xylene			Ç9-Ç12 Aliph.	5.0	μg/L	ND		
C5-C8 Aliph			N/A	40.0	μg/L	Ŋ		
C9-C12 Alip			N/A	15.0	μg/L	ND		
C9-C10 Aro			N/A	55.0	μg/L	ND		<u> </u>
1,2-DCE St	urrogate R	ecovery				108%		
		% Recovery				105%		
BFB Surrog	gate % Re	covery				103%		
		Surrogate Reco	very			80%		
Surrogate /		e Range	İ			70-130%		

## CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method 1 Were all QA/QC performance /acceptance standards achieved Were any significant modifications made to the VPH method?	d? ⊠ Yes □ No - Details attached							
Aromatic and aliphatic ranges are quantitated by GC/MS Total Ion Chromatogram and all targets are quantitated by GC/MS Selected Ion Measurements.								
I attest under the pains and penalties of perjury that, based up immedately responsible for obtaining the information, the mate the best of my knowledge, accurate and complete.								
SIGNATURE:	POSITION: Lab Director							
PRINTED NAME Jim Chen	DATE: 06/16/04							

Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

 $<sup>^2\</sup>text{C}_5.\text{C}_8$  Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

 $<sup>^{3}\</sup>mathrm{C_{9}C_{12}}$  Allphatic HCs exclude concentrations of Target Analytes AND  $\mathrm{C_{9}C_{10}}$  Aromatic Hydrocarbons eluting in that range

SAN			

Matrix	図 Aqueous □ Soil o Sediment □ Other						
Containers	图 Satisfactory □ Broken □ Leaking						
		9 pH <u>≤</u> 2 □					
					r-tight contain	ers	mi MeOH
Preservative		s received in N		Covering soil	? 🗆 Not		□1:1 <u>±</u> 25%
		d in air tight c					☐ Other
Temperature	Received on ic	e 🗆 Re	ceived at 4° C	Other			
VDU ANALY	TICAL RESULTS						
	anges: MADEP VPH GC/N	<u> 10  </u>		Client ID:	MW-A		1
	arget Analytes: MA VPH -			Lab ID:	149939		<del>                                     </del>
VPH Surroga		GC/IVIO	Date	e Collected:	06/03/04		<del>                                     </del>
vi ii Suiloga	2,5-Dibromot	aluene		Received:	06/03/04		
	1.2 <del>-</del> DCE	·		e Analyzed:	4-14-1-		
	Toluene-d8			tion Factor:	1.0 / 10*		<del> </del> -
	BFB		Total solids (%):		N/A		
Range/Targ		Elut. Range	RL	Units	14//		
Unadiusted	C5-C8 Aliphatics	N/A	40.0	μg/L	1700		
	C9-C12 Aliphatics	N/A	15.0	μg/L.	367		
Benzéne	•	C5-C8 Aliph	5.0	μg/L	40.5		
Ethylbenze	ne	C5-C8 Aliph	5.0	μg/L	173		
Methyl-tert-	butyl ether	C5-C8 Aliph	50*	μg/L	1730		1 1
Naphthalen	18	N/A	20.0	μg/L	37.1		
Toluene		C5-C8 Aliph	5.0	μg/L	ND		
m-,p-Xylend	es	C5-C8 Aliph	5.0	μg/L	93.1		
o-Xylene		C9-C12 Aliph.	5.0	μg/L	14.8		
C5-C8 Aliph	atic Hydrocarbons*	N/A	40.0	μg/L	ND		i
C9-C12 Alip	hatic Hydrocarbons*	N/A	15.0	μg/L	100		
C9-C10 Arol	matic Hydrocarbons	N/A	55.0	μg/L	252		
1,2-DCE Su	2-DCE Surrogate Recovery 109%						
Toluene-d8	oluene-d8 Surrogate % Recovery 465%						
BFB Surrog	FB Surrogate % Recovery						
2,5-Dibromotoluene Surrogate Recovery							
Surrogate A	cceptance Range	<u> </u>	1.(-) 1(		70-130%		<u></u>
			4 - / - \ 1 / 1				

CERTIFICATION	
Were all QA/QC procedures REQUIRED by the VPH Method follow	
Were all QA/QC performance /acceptance standards achieved?	
Were any significant modifications made to the VPH method?	☐ No ☒ Yes - Details below
Aromatic and aliphatic ranges are quantitated by GC/MS Total Ion (	Chromatogram and all targets are
quantitated by GC/MS Selected Ion Measurements.	
I attest under the pains and penalties of perjury that, based upon m	y inquiry of those individuals
immedately responsible for obtaining the information, the material of	contained in this report is, to
the best of my knowledge, accurate and complete.	
SIGNATURE:	POSITION: Lab Director
SIGNATURE.	FOSITION: Lab Director
PRINTED NAME Jim Chen	DATE: 06/16/04

Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

 $<sup>^{2}\</sup>text{C}_{\text{\tiny D}}\text{C}_{\text{\tiny B}}$  Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

 $<sup>^3</sup>$ C $_9$ C $_{12}$ Aliphatic HCs exclude concentrations of Target Analytes AND C $_9$ C $_{10}$  Aromatic Hydrocarbons eluting in that range

	SAMP	LE:	INFO	ORM	IATI	Ю
--	------	-----	------	-----	------	---

Matrix	×	Aqueous 🗆	Soil o Sedir	nent 🗆	Other			
Containers	X :	Satisfactory '						
	Aqueous		1 pH <u>&lt;</u> 2 □					
Sample	Soil or						ml MeOH	
Preservatives	Sediment							□1:1 <u>±</u> 25%
			d in air tight c					☐ Other
Temperature	· · · · · · · · · · · · · · · · · · ·							
VPH ANAL'								
	_	DÉP VPH GC/N			Client ID:	MIW-1		
		es: MA VPH -	GC/MS [		Lab ID:	149940		
VPH Surroga	ite Standard				e Collected:			
		2,5-Dibromot	oluene j		e Received:	06/03/04		
		1,2-DCE			e Analyzed:	06/11/04	•	
		Toluene-d8			tion Factor:	1.0		
		BFB			l solids (%):	N/A		
Range/Targ			Elut, Range	RL	Ųniţş			
Unadjusted			N/A	40.0	μg/L	ND		1
Unadjusted	C9-C12 Ali	phatics'	N/A	15.0	μg/L.	ND"		
Benzene			C5-C8 Aliph	5.0	μġ/L	ŇD		
Ethylbenzer			C5-C8 Aliph	5.0	μg/L	ND		
Methyl-tert-			C5-C8 Aliph	5.0	μg/L	ND		
Naphthalen	e		N/A	20.0	μg/L	ND		
Toluene			C5-C8 Aliph	5.0	μg/L	Z		
m-,p-Xylene	<del>2</del> S		C5-C8 Aliph	5.0	μg/L	ND		
o-Xylene			C9-C12 Aliph.	5.0	μg/L	ND		
C5-C8 Aliph			N/A	40.0	μg/L	ZD		<u> </u>
C9-C12 Alip			N/A	15.0	μg/L	ND		<u> </u>
C9-C10 Arol			N/A	55.0	μg/L	<sub>Z</sub>		
1,2-DCE Su	irrogate Re	ecovery				97%		
		% Recovery				99%		
BFB Surrog						99%		
		urrogate Reco	overy			121%		
Surrogate A	\cceptance	Range	l			70-130%		<u>l</u> .

## CERTIFICATION

	1.0.11
Were all QA/QC procedures REQUIRED by the VPH Method follow Were all QA/QC performance /acceptance standards achieved? Were any significant modifications made to the VPH method?	wed? ⊠ Yes □ No - Details attached ☑ Yes □ No - Details attached □ No ☑ Yes - Details below
Aromatic and aliphatic ranges are quantitated by GC/MS Total Ion quantitated by GC/MS Selected Ion Measurements.	Chromatogram and all targets are
I attest under the pains and penalties of perjury that, based upon n immedately responsible for obtaining the information, the material the best of my knowledge, accurate and complete.	
SIGNATURE:	POSITION: Lab Director
PRINTED NAME of the Chen	DATE: 06/16/04

Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

<sup>&</sup>lt;sup>2</sup>C<sub>5</sub>C<sub>8</sub> Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

<sup>&</sup>lt;sup>3</sup>C<sub>8</sub>C<sub>12</sub> Aliphatic HCs exclude concentrations of Target Analytes AND C<sub>8</sub>C<sub>10</sub> Aromatic Hydrocarbons eluting in that range

## **VOLATILE PETROLEUM HYDROCARBONS QC**

Analysis Date: 06/10/04

Standard	Spike % Rec	Limits	Blank
MTBE		70-130%	MD NO
Benzene	107%	70-130%	AND NEW MEN
Toluene	115%	70-130%	i dani N <b>D</b> imani
Ethyl Benzene	114%	70-130%	ND
m,p-Xylenes	114%	70-130%	ND:
o-Xylene	114%	70-130%	E NO
Naphthalene	114%	70-130%	
Surrogate Recoveries	3;	Limits	- "
	·		
1,2-Dichloroethane	107%	70-130%	
Toluene-D8	104%	70-130%	
BFB	101%	70-130%	
2,5-Dibromotoluene	116%	70-130%	

## **VOLATILE PETROLEUM HYDROCARBONS QC**

Analysis Date: 06/11/04

Standard	Spike % Rec.	Limits	Blank
MTBE	91%	70-130%	· ND
Benzene	96%	70-130%	ND
Toluene	93%	70-130%	ND
Ethyl Benzene	92%	70-130%	ND
m,p-Xylenes	93%	70-130%	ND
o-Xylene	92%	70-130%	ND
Naphthalene	86%	70-130%	
Surrogate Recoverie	es:	Limits	
1,2-Dichloroethane	103%	70-130%	
Toluene-D8	100%	70-130%	
BFB	102%	70-130%	
2,5-Dibromotoluene	89%	70-130%	

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE: GROUNDWATER 06/03/04

REPORT DATE: ANALYZED BY:

06/16/04

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT ANALYZED BY: RD ANALYSIS DATE: 06/0

06/08/04

PRESERVATIVE:

N/A

EXTRACTION DATE:

06/07/04

### SEMI-VOLATILE ORGANICS

SAMPLE NUMBER: SAMPLE LOCATION:

149939 MW-A

RESULTS **DETECTION LIMIT** (μ**g/L**)  $(\mu g/L)$ Acenaphthene ND 0.500 Acenaphthylene ND 0.250 Acetophenone ND 0.750 Aniline ND 2.250 Anthracene ND 0.500 Azobenzene ND 5.000 Benzo [a] anthracene ND 0.500 Benzo [b] fluoranthene ND 0.500 Benzo kl fluoranthene ND 1.000 Benzo [ghi] perylene ND 1.000 Benzo [a] pyrene ND 0.200 Benzyl alcohol ND 1.000 Bis-(2-chloroethoxy)methane ND 0.500 Bis-(2-chloroethyl) ether ND 0.500 Bis-(2-chloroisopropyl) ether ND 0.750 Bis-(2-ethylhexyl)phthalate 8.93 2.000 4-Bromophenyl phenyl ether ND 0.750 ND Butyl benzyl phthalate 1.250 Carbazole ND 0.750 4-Chioroaniline ND 2.500 4-Chloro-3-methylphenol ND 0.500 2-Chloronaphthalene ND 0.500 2-Chlorophenol ND 0.500 4-Chlorophenyl-phenylether ND 0.500 Chrysene ND 0.500 Dibenz [a,h] anthracene ND 0.500 Dibenzofuran ND 0.500

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

GROUNDWATER

COLLECTION DATE: REC'D BY LAB: COLLECTED BY:

06/03/04 06/03/04 CLIENT

PROJECT ID:

REPORT DATE: ANALYZED BY: ANALYSIS DATE: 131 MAIN STREET

06/16/04 ŔĎ

06/08/04 EXTRACTION DATE: 06/07/04

**SEMI-VOLATILE ORGANICS** 

SAMPLE NUMBER: SAMPLE LOCATION: 149939

MW-A

	RESULTS (μg/L)	DETECTION LIMIT (μg/L)
,2-Dichlorobenzene	ND	1.000
,3-Dichlorobenzene	ND	1,000
,4-Dichlorobenzene	ND	1.000
3,3'-dichlorobenzidine	ND	2.500
2,4-Dichlorophenol	ND	0.500
Diethyl phthalate	ND	1.250
2,4-Dimethylphenol	ND	3.750
Dimethylphthalate	ND	1.750
Di-n-butylphthalate	ND	0.750
Di-n-octyl phthalate	ND	2.000
1,2-Dinitrobenzene	ND	5.000
1,3-Dinitrobenzene	ND	0.750
1,4-Dinitrobenzene	ND	5.000
4,6-Dinitro-2-methylphenol	ND	1.000
2,4-Dinitrophenol	ND	0.250
2,4-Dinitrotoluene	ND	0.500
2,6-Dinitrotoluene	ND	0.250
Fluoranthene	ND	0.500
Fluorene	ND	0.500
Hexachlorobenzene	ND	1.000
Hexachlorobutadiene	ND	0.500
Hexachlorocyclopentadiene	ND	10.000
Hexachloroethane	ND	2.000
Indeno [1,2,3-cd] pyrene	ND	0.500
Isophorone	ND	0.500
2-Methylnaphthalene	ND	0.750
2-Methylphenol	ND	1.000
3-Methylphenol/4-methylphenol	ND	1.500

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

GROUNDWATER

PROJECT ID: REPORT DATE: 131 MAIN STREET

COLLECTION DATE: 06/03/04

ANALYZED BY:

06/16/04

REC'D BY LAB:

06/03/04

ANALYSIS DATE:

RD

COLLECTED BY:

CLIENT

EXTRACTION DATE: 06/07/04

06/08/04

#### **SEMI-VOLATILE ORGANICS**

SAMPLE NUMBER: **SAMPLE LOCATION:**  149939

MW-A

-		
	RESULTS	DETECTION LIMIT
	(μ <b>g/L</b> )	(μ <b>g/L</b> )
Naphthalene	24.0	0.750
2-Nitroaniline	ND	0.750
3-Nitroaniline	ND	1.500
4-Nitroaniline	ND	1.000
Nitrobenzene	ND	0.750
2-Nitrophenol	. ND	0.500
4-Nitrophenol	ND	0.500
N-Nitrosodimethylamine	ND	1.000
N-Nitrosodiphenylamine	ND	5.000
N-nitroso-di-n-propylamine	ND	1.000
Pentachlorophenol	ND	1.000
Phenanthrene	ND	0.500
Phenol	ND	0.250
Pyrene	ND	1.250
Pyridine	ND	1.250
2,3,4,6-Tetrachlorophenol	ND	1.000
1,2,4-Trichlorobenzene	ND	0.750
2,4,5-Trichlorophenol	ND	0.750
2,4,6-Trichlorophenol	ND	0.500
Surrogate Recoveries		
2-Fluorophenol	45%	
Phenol-d6	39%	
Nitrobenzene-d5	10% *	* Matrix interference
2-Fluorobiphenyl	61%	
2,4,6-Tribromophenol Terphenyl-d14	99% 106%	
ND = NOT DETECTED	CALCULATIONS BASED ON	I DRY WEIGHT

Method Reference:

EPA Method

8270C (1)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

GROUNDWATER

REPORT DATE:

6/16/04

COLLECTION DATE:

6/3/04

REC'D BY LAB: COLLECTED BY: 6/3/04 CLIENT ANALYZED BY:

RD

### SEMI-VOLATILE ORGANICS - QC

		Spike	
	Blank	% Rec.	Limits
Phenol	ND	40%	30-130%
2-chlorophenol	ND	69%	30-130%
1,4-Dichlorobenzene	ND	55%	40-140%
N-Nitroso-di-n-propylamine	ND	72%	40-140%
1,2,4-Trichlorobenzene	ND	60%	40-140%
4-Chloro-3-methylphenol	ND	93%	30-130%
Acenaphthene	ND	77%	40-140%
4-Nitrophenol	ND	67%	30-130%
2,4-Dinitrotoluene	ND	64%	40-140%
Pentachlorophenol	ND	99%	30-130%
Pyrene	ND	114%	40-140%

Surrogate Recoveries:	% Rec.	% Rec.	Limits
2-Fluorophenol	52%	47%	30-130%
Phenol-d6	42%	39%	30-130%
Nitrobenzene-d5	67%	62%	30-130%
2-Fluorobiphenyl	64%	60%	30-130%
2,4,6-Tribromophenol	107%	98%	30-130%
Terphenyl-d14	108%	106%	30-130%

CLIENT NAME:

**DECOULOS & COMPANY** 

SOIL

SAMPLE TYPE: COLLECTION DATE: 06/03/04

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT N/A

PRESERVATIVE:

PROJECT ID:

REPORT DATE: ANALYZED BY:

131 MAIN STREET 06/16/04

RD

ANALYSIS DATE:

06/14-15/04

EXTRACTION DATE: 06/14/04

#### SEMI-VOLATILE ORGANICS

**SAMPLE NUMBER:** SAMPLE LOCATION: 149941 ESE-1

149942 ESE-2

	RESL (μg/		DETECTION LIMIT (μg/Kg)
cenaphthene	ND	ND .	50.0
Acenaphthylene	ND	ND	25.0
cetophenone	ND	ND	75.0
Aniline	ND	ND	225
Anthracene	897	ND	50.0
Azobenzene	ND	ND	50.0
Benzo [a] anthracene	1610	768	50.0
Benzo [b] fluoranthene	1670	1240	50.0
Benzo k] fluoranthene	585	468	100
Benzo [ghi] perylene	923	527	100
Benzo [a] pyrene	1120	668	20.0
Benzyl alcohol	ND	ND	100
Bis-(2-chloroethoxy)methane	ND	ND	50.0
Bis-(2-chloroethyl) ether	ND	ND	50.0
Bis-(2-chloroisopropyl) ether	ND	ND	75.0
3is-(2-ethylhexyl)phthalate	735	896	200
I-Bromophenyl phenyl ether	ND	ND	75.0
Butyl benzyl phthalate	ND	ND	125
Carbazole	563	236	75.0
I-Chloroaniline	ND	ND	250
1-Chloro-3-methylphenol	ND	ND	50.0
2-Chloronaphthalene	ND	ND	50.0
2-Chlorophenol	ND	ND	50.0
4-Chlorophenyl-phenylether	ND	ND	50.0
Chrysene	1660	1190	50.0
Dibenz [a,h] anthracene	138	169	50.0
Dibenzofuran	330	ND	50.0

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE:

SOIL 06/03/04 REPORT DATE: ANALYZED BY:

06/16/04 RD

REC'D BY LAB:

06/03/04

ANALYSIS DATE:

06/14-15/04

COLLECTED BY:

CLIENT

EXTRACTION DATE: 06/14/04

## SEMI-VOLATILE ORGANICS

SAMPLE NUMBER:

149941

149942

SAMPLE LOCATION:

ESE-1

ESE-2

	RES! (μg/		DETECTION LIMIT (μg/Kg)
,2-Dichlorobenzene	ND	ND	100
,3-Dichlorobenzene	ND	ND	100
,4-Dichiorobenzene	ND	ND	100
3,3'-dichlorobenzidine	ND	ND	250
2,4-Dichlorophenol	ND	ND	50.0
Diethyl phthalate	ND	ND	125
2,4-Dimethylphenol	ND	ND	375
Dimethylphthalate	ND	ND	175
Di-n-butylphthalate	ND	ND	75.0
Di-n-octyl phthalate	ND	ND	200
,2-Dinitrobenzene	ND	ND	50.0
1,3-Dinitrobenzene	ND	ND	75.0
,4-Dînitrobenzene	ND	ND	50.0
1,6-Dinitro-2-methylphenol	ND	ND	100
2,4-Dinitrophenol	ND	ND	25.0
2,4-Dinitrotoluene	ND	ND	50.0
2,6-Dinitrotoluene	ND	ND	25.0
luoranthene	4380	2390	50.0
Fluorene	602	ND	50.0
Hexachlorobenzene	ND	ND	100
Hexachlorobutadiene	ND	ND	50.0
Hexachlorocyclopentadiene	ND	ND	1000
lexachloroethane	ND	ND	200
ndeno [1,2,3-cd] pyrene	709	498	50.0
sophorone	ND	ND	50.0
2-Methylnaphthalene	1660	ND	75.0
2-Methylphenol	ND	ND	100
3-Methylphenol/4-methylphenol	ND	ND	150

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

SOIL

REPORT DATE:

06/16/04

COLLECTION DATE:

06/03/04

ANALYZED BY:

RD

REC'D BY LAB:

06/03/04

ANALYSIS DATE:

06/14-15/04

COLLECTED BY:

CLIENT

EXTRACTION DATE: 06/14/04

#### **SEMI-VOLATILE ORGANICS**

SAMPLE NUMBER:

149941

149942

SAMPLE LOCATION:

ESE-1

ESE-2

	RESL (µg/		ÐETECTION LIMIT (μg/Kg)
Naphthalene	304	ND	75.0
2-Nitroaniline	ND	ND .	75.0
3-Nitroaniline	ND	ND	150
4-Nitroaniline	ND	ND	100
Nitrobenzene	ND	ND	75.0
2-Nitrophenol	ND	ND	50.0
4-Nitrophenol	ND	ND	50.0
N-Nitrosodimethylamine	ND	ND	100
N-Nitrosodiphenylamine	ND	ND	50.0
N-nitroso-di-n-propylamine	ND	ND	100.0
Pentachlorophenol	ND	ND	100.0
Phenanthren <del>e</del>	4010	1380	50.0
Phenol	ND	ND	25.0
Pyrene	3580	1850	125
Pyridine	ND	ND	125
2,3,4,6-Tetrachlorophenol	ND	ND	100
1,2,4-Trichlorobenzene	ND	ND	75.0
2,4,5-Trichlorophenol	ND	ND	· 75.0
2,4,6-Trichlorophenol	ND	ND	50.0
Surrogate Recoveries			
2-Fluorophenol	61%	71%	
Phenol-d6	70%	77%	
Nitrobenzene-d5	55%	61%	
2-Fluorobiphenyl	56%	67%	
2,4,6-Tribromophenol Terphenyl-d14	104% 99%	100% 101%	
ND = NOT DETECTED	CALCULATIONS BASED ON DRY WEIGHT		

Method Reference: **EPA Method** 

8270C (1)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:

**DECOULOS & COMPANY** 

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE:

SOIL 06/03/04 PROJECT ID: REPORT DATE: 06/16/04

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT

ANALYZED BY:

RD

ANALYSIS DATE: EXTRACTION DATE: 06/14/04

06/15/04

PRESERVATIVE: N/A

#### **SEMI-VOLATILE ORGANICS**

SAMPLE NUMBER: SAMPLE LOCATION: 149943 ESE-3

149944 ESE-4

149945 ESE-5

	RESULTS (μg/Kg)		DETECTION LIMIT (µg/Kg)	
Acenaphthene	ND	ND	ND	50.0
Acenaphthylene	ND	ND	ND	25.0
Acetophenone	ND	ND	ND	75.0
Aniline	ND	ND	ND	225
Anthracene	ND	ND	ND	50.0
Azobenzene	ND	ND	ND	50.0
Benzo [a] anthracene	1190	704	219	50.0
Benzo [b] fluoranthene	1580	887	304	50.0
Benzo k] fluoranthene	486	310	ND	100
Benzo [ghi] perylene	821	385	150	100
Benzo [a] pyrene	966	539	186	20.0
Benzyl alcohol	ND	ND	ND	100
Bis-(2-chloroethoxy)methane	ND	ND	ND	50.0
Bis-(2-chloroethyl) ether	ND	ND	ND	50.0
Bis-(2-chloroisopropyl) ether	ND	ND	ND	75.0
Bis-(2-ethylhexyl)phthalate	1420	749	781	200
4-Bromophenyl phenyl ether	ND	ND	ND	75.0
Butyl benzyl phthalate	ND	ND	ND	125
Carbazole	ND	ND	ND	75.0
I-Chloroaniline	ND	ND	ND	250
4-Chloro-3-methylphenol	ND	ND	ND	50.0
2-Chloronaphthalene	ND	ND	ND	50.0
2-Chlorophenol	ND	ND	NĎ	50.0
4-Chlorophenyl-phenylether	ND	ND	ND	50.0
Chrysene	1710	941	303	50.0
Dibenz [a,h] anthracene	183	109	ND	50.0
Dibenzofuran	ND	ND	ND	50.0

CLIENT NAME: SAMPLE TYPE:

COLLECTED BY:

**DECOULOS & COMPANY** 

SOIL

COLLECTION DATE: REC'D BY LAB:

06/03/04 06/03/04 CLIENT

PROJECT ID:

131 MAIN STREET 06/16/04

REPORT DATE: ANALYZED BY:

RD

ANALYSIS DATE: EXTRACTION DATE: 06/14/04

06/15/04

#### **SEMI-VOLATILE ORGANICS**

**SAMPLE NUMBER:** 

149943

149944

149945

**\$AMPLE LOCATION:** 

ESE-3

ESE-4 ESE-5

**RESULTS DETECTION LIMIT** (μg/Kg) (µg/Kg) ND ND ND 100 1,2-Dichlorobenzene 100 ND ND ND 1,3-Dichlorobenzene ND ND ND 100 1,4-Dichlorobenzene 250 ND ND ND 3,3'-dichlorobenzidine ND ND 50.0 2,4-Dichlorophenol ND ND ND ND 125 Diethyl phthalate ND 375 2,4-Dimethylphenol ND ND ND ND ND 175 Dimethylphthalate ND ND ND 75.0 Di-n-butylphthalate 200 ND ND ND Di-n-octyl phthalate 1,2-Dinitrobenzene ND ND 50.0 ND 75.0 1,3-Dinitrobenzene ND ND ND ND 50.0 1,4-Dinitrobenzene ND ND 100 ND ND ND 4,6-Dinitro-2-methylphenol ND 25.0 2,4-Dinitrophenol ND ND 50.0 ND ND ND 2,4-Dinitrotoluene 25.0 2,6-Dinitrotoluene ND ND ND 50.0 Fluoranthene 3730 1860 451 Fluorene ND ND NĎ 50.0 ND ND 100 Hexachlorobenzene ND 50.0 Hexachlorobutadiene ND ND ND 1000 Hexachlorocyclopentadiene ND ND ND ND ND ND 200 Hexachloroethane Indeno [1,2,3-cd] pyrene 642 366 117 50.0 ND ND NĐ 50.0 Isophorone 2-Methylnaphthalene 1560 403 ND 75.0 100 ND ND 2-Methylphenol ND ND ΝĐ ND 150 3-Methylphenol/4-methylphenol

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

SOIL

REPORT DATE:

06/16/04

COLLECTION DATE:

06/03/04

ANALYZED BY:

RD

REC'D BY LAB:

06/03/04

ANALYSIS DATE:

06/15/04

COLLECTED BY:

CLIENT

EXTRACTION DATE:

06/14/04

#### SEMI-VOLATILE ORGANICS

SAMPLE NUMBER: SAMPLE LOÇATION:

149943 ESE-3 149944 ESE-4 149945

ESE-5 **RESULTS DETECTION LIMIT** (µg/Kg) (µg/Kg) Naphthalene ND ND ND 75.0 2-Nitroaniline ND ND ND 75.0 3-Nitroaniline ND ND ND 150 4-Nitroaniline ND ND ND 100 Nitrobenzene ND ND ND 75.0 2-Nitrophenol ND ND ND 50.0 4-Nitrophenol ND ND ND 50.0 N-Nitrosodimethylamine ND ND ND 100 N-Nitrosodiphenylamine ND ND ND 50.0 N-nitroso-di-n-propylamine ND ND ND 100.0 Pentachlorophenol ND. ND ND 100.0 Phenanthrene 2540 1890 200 50.0 Phenol ND ND ND 25.0 Pyrene 2900 1510 391 125 Pyridine ND ND ND 125 2,3,4,6-Tetrachiorophenol ND ND ND 100 1,2,4-Trichlorobenzene ND ND ND 75.0 2,4,5-Trichlorophenol ND ND ND 75.0 2,4,6-Trichlorophenol ND ND ND 50.0 **Surrogate Recoveries** 2-Fluorophenol 69% 66% 63% 70% 73% 72% Phenol-d6 Nitrobenzene-d5 56% 55% 56% 61% 62% 55% 2-Fluorobiphenyl 2,4,6-Tribromophenol 100% 105% 107% Terphenyl-d14 91% 97% 82%

ND = NOT DETECTED

Method Reference:

CALCULATIONS BASED ON DRY WEIGHT

EPA Method

8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE: SOIL 06/03/04 REPORT DATE: ANALYZED BY: 06<u>/</u>16/04 RD

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT ANALYSIS DATE:

06/15/04

PRESERVATIVE:

N/A

EXTRACTION DATE: 06/14/04

#### **SEMI-VOLATILE ORGANICS**

SAMPLE NUMBER:

149946

149947

SAMPLE LOCATION:

ESE-6 ESE-7

	RESULTS (μg/Kg)		DETECTION LIMIT (μg/Kg)
cenaphthene	ND	ND	50.0
cenaphthylene	ND	ND	25.0
cetophenone	ND	ND	75.0
niline	ND	ND	<b>22</b> 5
nthracene	ND	95.6	50.0
zobenzene	ND	ND	50.0
enzo [a] anthracene	ND	ND	50.0
enzo [b] fluoranthene	275	ND	50.0
enzo k] fluoranthene	ND	ND	100
enzo [ghi] perylene	159	ND	100
enzo [a] pyrene	181	ND	20.0
enzyl alcohol	ND	ND	100
is-(2-chloroethoxy)methane	ND	ND	50.0
is-(2-chloroethyl) ether	ND	NĎ	50.0
is-(2-chloroisopropyl) ether	ND	ND	75.0
is-(2-ethylhexyl)phthalate	ND	ND	200
-Bromophenyl phenyl ether	ND	ND	75.0
utyl benzyl phthalate	ND	ND	125
Carbazole	ND	NĎ	75.0
-Chloroaniline	ND	ND	250
-Chloro-3-methylphenol	ND	МD	50.0
-Chloronaphthalene	ND	ND	50.0
-Chlorophenol	ND	ND	50.0
-Chlorophenyl-phenylether	ND	ND	50.0
Chrysene	ND	ND	50.0
Dibenz [a,h] anthracene	ND	ND	50.0
Dibenzofuran	ND	ND	50.0

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

SOIL 06/03/04 REPORT DATE: ANALYZED BY:

06/16/04

COLLECTION DATE: REC'D BY LAB:

06/03/04

RD

COLLECTED BY:

CLIENT

ANALYSIS DATE:

06/15/04 EXTRACTION DATE: 06/14/04

# SEMI-VOLATILE ORGANICS

SAMPLE NUMBER:

149946

149947

SAMPLE LOCATION:

ESE-6

ESE-7

	RESU (μg//	· -	DETECTION LIMIT (μg/Kg)
1,2-Dichlorobenzene	ND	ND	100
1,3-Dichlorobenzene	ND	ND	100
1,4-Dichlorobenzene	ND	ND	100
3,3'-dichlorobenzidine	ND	ND	250
2,4-Dichlorophenol	ND	ND	50.0
Diethyl phthalate	ND	ND	125
2,4-Dimethylphenol	ND	ND	375
Dimethylphthalate	ND	ND	175
Di-n-butylphthalate	ND ·	ND	75.0
Di-n-octyl phthalate	ND	ND	200
1,2-Dinitrobenzene	NĎ	ND	50.0
1,3-Dinitrobenzene	ND	ND	75.0
1,4-Dinitrobenzene	ND	NĐ	50.0
4,6-Dinitro-2-methylphenol	ND	ND	100
2,4-Dinitrophenol	ND	ND	25.0
2,4-Dinitrotoluene	ND	ND	50.0
2,6-Dinitrotoluene	ND	ND	25.0
Fluoranthene	401	910	50.0
Fluorene	ND	ND	50.0
Hexachlorobenzene	ND	ND	100
Hexachlorobutadiene	ND	ND	50.0
Hexachlorocyclopentadiene	ND	ND	1000
Hexachloroethane	ND	ND	200
Indeno [1,2,3-cd] pyrene	118	ND	50.0
Isophorone	. ND	ND	50.0
2-Methylnaphthalene	ND	ND	75.0
2-Methylphenol	ND	ND	100
3-Methylphenol/4-methylphenol	ND	ND	150

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

**SOIL** 

REPORT DATE: ANALYZED BY:

06/16/04

COLLECTION DATE: REC'D BY LAB:

06/03/04 06/03/04

ANALYSIS DATE:

RD 06/15/04

COLLECTED BY:

CLIENT

EXTRACTION DATE: 06/14/04

#### SEMI-VOLATILE ORGANICS

SAMPLE NUMBER: **SAMPLE LOCATION:**  149946 ESE-6

149947

ESE-7

	RESI (µg/		DETECTION LIMIT (μg/Kg)
Naphthalene	ND	ND	75.0
2-Nitroaniline	ND	ND	75.0
3-Nitroaniline	ND .	ND	150
4-Nitroaniline	ND	ND	100
Nitrobenzene	ND	ND	75.0
2-Nitrophenol	ND	ND	50.0
4-Nitrophenol	ND	ND	50.0
N-Nitrosodimethylamine	ND	ND	100
N-Nitrosodiphenylamine	ND	ND	50.0
N-nitroso-di-n-propylamine	ND	ND	100.0
Pentachlorophenol	ND	ND	100.0
Phenanthrene	122	274	50.0
Phenol	ND	ND	25.0
Pyrene	355	754	125
Pyridine	ND	ND	125
2,3,4,6-Tetrachlorophenol	ND	ND	100
1,2,4-Trichlorobenzene	ND	ND	75.0
2,4,5-Trichlorophenol	ND	ND	75.0
2,4,6-Trichlorophenol	ND	ND	50.0
Surrogate Recoveries			
2-Fluorophenol	68%	76%	
Phenol-d6	72%	78%	
Nitrobenzene-d5	54%	57%	
2-Fluorobiphenyl	47%	52%	•
2,4,6-Tribromophenol Terphenyl-d14	96% 68%	101% 75%	
ND = NOT DETECTED	CALCULATIONS	BASED ON DRY WI	EIGHT

Method Reference:

**EPA** Method

8270C (1)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

SOIL

REPORT DATE:

06/16/04

COLLECTION DATE: 06/03/04

06/03/04

ANALYZED BY:

RD

REC'D BY LAB: COLLECTED BY:

CLIENT

#### **SEMI-VOLATILE ORGANICS - QC**

		Spike	
	Blank	% Rec.	Limits
Phenol	ND	77%	30-130%
2-chlorophenol	ND	76%	30-130%
1,4-Dichlorobenzene	ND	69%	40-140%
N-Nitroso-di-n-propylamine	ND	67%	40-140%
1,2,4-Trichlorobenzene	ND	71%	40-140%
4-Chloro-3-methylphenol	ND	90%	30-130%
Acenaphthene	ND	82%	40-140%
4-Nitrophenol	ND	98%	30-130%
2,4-Dinitrotoluene	ND	81%	40-140%
Pentachlorophenol	ND	98%	30-130%
Pyrene	ND	93%	40-140%

Surrogate Recoveries:	% Rec.	% Rec.	Limits
2-Fluorophenol	57%	72%	30-130%
Phenol-d6	61%	76%	30-130%
Nitrobenzene-d5	58%	63%	30-130%
2-Fluorobiphenyl	63%	68%	30-130%_
2,4,6-Tribromophenol	78%	97%	30-130%
Terphenyl-d14	91%	86%	30-130%

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

SURFACE WATER

COLLECTION DATE: REC'D BY LAB:

COLLECTED BY: PRESERVATIVE:

06/03/04

06/03/04 CLIENT

N/A

PROJECT ID:

REPORT DATE:

06/16/04 ANALYZED BY:

ANALYSIS DATE: EXTRACTION DATE: 06/07/04

RD 06/08/04

131 MAIN STREET

SEMI-VOLATILE ORGANICS

**SAMPLE NUMBER:** SAMPLE LOCATION: 149948 ESW-1

149949 ESW-2 149950 ESW-3

SAMPLE LOCATION:	ESW-1	ESW-2	ESW-3	
•		RESULTS (μg/L)		DETECTION LIMIT (μg/L)
Acenaphthene	ND	ND	ND	0.500
Acenaphthylene	ND	ND	ND	0.250
Acetophenone	ND	ND	ND	0.750
Aniline	ND	ND	ND	2.250
Anthracene	ND	ND	ND	0.500
Azobenzene	ND	ND	ND	5.000
Benzo [a] anthracene	ND	ND	ND	0.500
Benzo [b] fluoranthene	ND	ND	ND	0.500
Benzo k] fluoranthene	ИD	ND	ND	1,000
Benzo [ghi] perylene	ND	ND	ND	1.000
Benzo [a] pyrene	ND	ND	ND	0.200
Benzyi alcohol	ND	ND	ND	1.000
Bis-(2-chloroethoxy)methane	ND	ND	ND	0.500
Bis-(2-chloroethyl) ether	ND	ND	ND	0.500
Bis-(2-chloroisopropyl) ether	ND	ND	ND	0.750
Bis-(2-ethylhexyl)phthalate	6.22	10.9	5.84	2.000
1-Bromophenyl phenyl ether	ND	ND	ND	0.750
Butyl benzyl phthalate	ND	ND	ND	1.250
Carbazole	NĎ	ND	ND	0.750
4-Chloroaniline	ND	ND	ND	2.500
4-Chloro-3-methylphenol	ND	ND	ND	0.500
2-Chloronaphthalene	ND	ND	ND	0.500
2-Chlorophenol	ND	ND	ND	0.500
4-Chlorophenyl-phenylether	ND	ND	ND	0.500
Chrysene	ND	ND	ND	0.500
Dibenz [a,h] anthracene	ND	ND	ND	0.500
Dibenzofuran	ND	ND	ND	0.500

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE:

SURFACE WATER 06/03/04

REPORT DATE: ANALYZED BY:

06/16/04

REC'D BY LAB:

06/03/04

RD

ANALYSIS DATE:

06/08/04

COLLECTED BY:

CLIENT

EXTRACTION DATE: 06/07/04

# SEMI-VOLATILE ORGANICS

SAMPLE NUMBER:

149948

149949

149950

**SAMPLE LOCATION:** 

E\$W-1 ESW-2 ESW-3

		RESULTS (μg/L)	DETECTION LIMIT (µg/L)	
2-Dichlorobenzene	ND	ND	ND	1.000
3-Dichlorobenzene	ND	ND	ND	1.000
4-Dichlorobenzene	ND	ND	ND	1.000
3'-dichlorobenzidine	ND	ND	ND	2.500
4-Dichlorophenol	ND	ND	ND	0.500
iethyl phthalate	ND	ND	ND '	1.250
4-Dimethylphenol	ND	ND	ND	3.750
imethylphthalate	ND	ND	ND	1.750
i-n-butylphthalate	ND	ND	ND	0.750
i-n-octyl phthalate	ND	ND	ND	2.000
2-Dinitrobenzene	ND	ND	ND	5.000
3-Dinitrobenzene	ND	ND	ND	0.750
4-Dinitrobenzene	ND	ND	ND	5.000
6-Dinitro-2-methylphenol	ND	ND	ND	1.000
4-Dinitrophenol	ND	NĐ	ND	0.250
4-Dinitrotoluene	ND	ND	NĎ	0.500
6-Dinitrotoluene	ND	ND	ND	0.250
luoranthene	ND	1.78	ИĎ	0.500
uorene	ND	ND	ND	0.500
exachlorobenzene	ND	ND	ND	1.000
exachlorobutadiene	ND	ND	ND	0.500
exachlorocyclopentadiene	ND	ND	ND	10.000
exachloroethane	ND	ND	ND	2.000
deno [1,2,3-cd] pyrene	ND	ND ·	ND	0.500
ophorone	ND	ND	ND	0.500
-Methylnaphthalene	ND	ND	ND	0.750
-Methylphenol	ND	ND	ND	1.000
-Methylphenol/4-methylphenol	ND	ND	ND	1.500

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

SURFACE WATER 06/03/04

REPORT DATE:

06/16/04

COLLECTION DATE: REC'D BY LAB:

06/03/04

ANALYZED BY: ANALYSIS DATE:

RD 06/08/04

COLLECTED BY:

CLIENT

EXTRACTION DATE: 06/07/04

# SEMI-VOLATILE ORGANICS

SAMPLE NUMBER: SAMPLE LOCATION: 149948 E\$W-1 149949 E\$W-2 149950 ESW-3

		RESULTS (μg/L)		DETECTION LIMIT (μg/L)
Naphthalene ·	ND	ND	ND	0.750
2-Nitroaniline	ИD	ND	ND	0.750
3-Nitroaniline	ND	ND	ND	1.500
4-Nitroaniline	ND	ND	ND	1.000
Nitrobenzene	ND	ИĎ	ND	0.750
2-Nitrophenol	ND	ND	ND	0.500
4-Nitrophenol	ND	ND	ND	0.500
N-Nitrosodimethylamine	ND	ND	ND	1.000
N-Nitrosodiphenylamine	ND	ND	ND	5.000
N-nitroso-di-n-propylamine	ND	ND	ND	1.000
Pentachlorophenol	ND	ND	ND	1.000
Phenanthrene	ND	ND	ND	0.500
Phenol	ND	ND	NÖ	0.250
Pyrene	ND	2.10	ND	1.250
Pyridine	ND	ND	ND	1.250
2,3,4,6-Tetrachlorophenol	ND	ND	ND	1.000
1,2,4-Trichlorobenzene	ND	ND	ND	0.750
2,4,5-Trichlorophenol	ND	ND	ND	0.750
2,4,6-Trichlorophenol	ND	ND	ND	0.500
Surrogate Recoveries				
2-Fluorophenol	41%	43%	50%	
Phenol-d6	34%	38%	43%	
Nitrobenzene-d5	55%	59%	79%	
2-Fluorobiphenyl	47%	65%	69%	
2,4,6-Tribromophenol Terphenyl-d14	94% 95%	110% 113%	104% 114%	
ND = NOT DETECTED	CALCULAT	TIONS BASE	D ON DRY W	EIGHT

Method Reference:

EPA Method

8270C (1)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

SURFACE WATER

COLLECTION DATE: 06/03/04 REC'D BY LAB: COLLECTED BY:

06/03/04 CLIENT

N/A

PRESERVATIVE:

PROJECT ID:

REPORT DATE:

ANALYZED BY: ANALYSIS DATE: 131 MAIN STREET

06/16/04 RD

06/08/04 EXTRACTION DATE: 06/07/04

**SEMI-VOLATILE ORGANICS** 

**SAMPLE NUMBER:** 

149951

SAMPLE LOCATION:

ESW-4

	RESULTS (μg/L)	DETECTION LIMIT (µg/L)
Acenaphthene	ND	0.500
Acenaphthylene	ND	0,250
Acetophenone	ND	0.750
Aniline	ND	2.250
Anthracene	ND	0.500
Azobenzene	ND	5.000
Benzo [a] anthracene	ND	0.500
Benzo [b] fluoranthene	ND	0.500
Benzo k] fluoranthene	ND	1.000
Benzo [ghi] perylene	ND	1.000
Benzo [a] pyrene	ND	0.200
Benzyl alcohol	ND	1.000
Bis-(2-chloroethoxy)methane	ND	0.500
Bis-(2-chloroethyl) ether	ND	0.500
Bis-(2-chloroisopropyl) ether	ND	0.750
Bis-(2-ethylhexyl)phthalate	6.58	2.000
4-Bromophenyl phenyl ether	ND	0.750
Butyl benzyl phthalate	NÐ	1.250
Carbazole	ND	0.750
4-Chloroaniline	ND	2.500
4-Chloro-3-methylphenol	ND	0.500
2-Chloronaphthalene	ND	0.500
2-Chlorophenol	ND	0.500
4-Chlorophenyl-phenylether	ND	0.500
Chrysene	0.939	0.500
Dibenz [a,h] anthracene	ND	0.500
Dibenzofuran	. ND	0.500

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

SURFACE WATER

COLLECTION DATE: 06/03/04 REC'D BY LAB: COLLECTED BY:

06/03/04 CLIENT

PROJECT ID:

131 MAIN STREET

REPORT DATE: ANALYZED BY: ANALYSIS DATE: 06/16/04 RD 06/08/04

EXTRACTION DATE: 06/07/04

#### **SEMI-VOLATILE ORGANICS**

**SAMPLE NUMBER:** SAMPLE LOCATION: 149951

EŞW-4

	RESULTS (μg/L)	DETECTION LIMIT (μg/L)
1,2-Dichlorobenzene	ND	1.000
1,3-Dichlorobenzene	ND	1.000
1,4-Dichlorobenzene	ND	1.000
3,3'-dichlorobenzidine	ND	2.500
2,4-Dichlorophenol	ND	0.500
Diethyl phthalate	ND	1.250
2,4-Dimethylphenol	ND	3.750
Dimethylphthalate	ND	1.750
Di-n-butylphthalate	ND	0.750
Di-n-octyl phthalate	ND	2.000
1,2-Dinitrobenzene	ND	5.000
1,3-Dinitrobenzene	ND	0.750
1,4-Dinitrobenzene	ND	5.000
4,6-Dinitro-2-methylphenol	ND	1.000
2,4-Dinitrophenol	ND	0.250
2,4-Dinitrotoluene	ND	0.500
2,6-Dinitrotoluene	ND	0.250
Fluoranthene	0.990	0.500
Fluorene	ND	0.500
Hexachlorobenzene	ND	1.000
Hexachlorobutadiene	ND	0.500
Hexachlorocyclopentadiene	ND	10.000
Hexachloroethane	ND	2.000
Indeno [1,2,3-cd] pyrene	ND	0.500
Isophorone	ND	0.500
2-Methylnaphthalene	ND	0.750
2-Methylphenol	ND	1.000
3-Methylphenol/4-methylphenol	ND	1.500

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

SURFACE WATER

COLLECTION DATE: 06/03/04

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT

PROJECT ID:

REPORT DATE:

131 MAIN STREET 06/16/04

ANALYZED BY:

RD

ANALYSIS DATE:

06/08/04

EXTRACTION DATE: 06/07/04

# **SEMI-VOLATILE ORGANICS**

SAMPLE NUMBER: **SAMPLE LOCATION:**  149951

ESW-4

	RESULTS (μg/L)	DETECTION LIMIT (μg/L)		
Naphthalene	ND	0.750		
2-Nitroaniline	ND	0.750		
3-Nitroaniline	ND	1.500		
4-Nitroaniline	ND	1.000		
Nitrobenzene	ND	0.750		
2-Nitrophenol	ND	0.500		
4-Nitrophenol	ND	0.500		
N-Nitrosodimethylamine	ND	1.000		
N-Nitrosodiphenylamine	ND	5.000		
N-nîtroso-dî-n-propylamine	ND	1.000		
Pentachlorophenol	ND	1.000		
Phenanthrene	ND	0.500		
Phenol	ND	0,250		
Pyrene	ND	1.250		
Pyridine	ND	1.250		
2,3,4,6-Tetrachlorophenol	ND	1.000		
1,2,4-Trichlorobenzene	ND	0.750		
2,4,5-Trichlorophenol	NĎ	0.750		
2,4,6-Trichlorophenol	ND	0.500		
Surrogate Recoveries				
2-Fluorophenol	36%			
Phenol-d6	35%			
Nitrobenzene-d5	63%			
2-Fluorobiphenyl	68%			
2,4,6-Tribromophenol Terphenyl-d14	91% 117%			
ND = NOT DETECTED	CALCULATIONS BASED ON DRY WEIG	ŀНТ		

Method Reference:

CALCULATIONS BASED ON DRY WEIGHT

**EPA Method** 

8270C (1)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

SURFACE WATER

REPORT DATE:

06/16/04

COLLECTION DATE:

06/03/04

ANALYZED BY: ...

REC'D BY LAB:

06/03/04

ANALYSIS DATE:

RD 06/08/04

COLLECTED BY:

CLIENT

EXTRACTION DATE: 06/07/04

# SEMI-VOLATILE ORGANICS - QC

**	ĺ	Spike	
	Blank	% Rec.	Limits
Phenol	ND	40%	30-130%
2-chlorophenol	ND	69%	30-130%
1,4-Dichlorobenzene	ND	55%	40-140%
N-Nitroso-di-n-propylamine	ND	72%	40-140%
1,2,4-Trichlorobenzene	ND	60%	40-140%
4-Chloro-3-methylphenol	ND	93%	30-130%
Acenaphthene	ND	77%	40-140%
4-Nitrophenol	ND	67%	30-130%
2,4-Dinitrotoluene	ND	64%	40-140%
Pentachlorophenol	ND	99%	30-130%
Pyrene	ND	114%	40-140%

Surrogate Recoveries:	% Rec.	% Rec.	Limits
2-Fluorophenol	52%	47%	30-130%
Phenol-d6	42%	39%	30-130%
Nitrobenzene-d5	67%	62%	30-130%
2-Fluorobiphenyl	64%	60%	30-130%
2,4,6-Tribromophenol	107%	98%	30-130%
Terphenyl-d14	108%	106%	30-130%

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

GROUNDWATER 06/03/04

COLLECTION DATE: REC'D BY LAB: COLLECTED BY:

06/03/04 CLIENT

PRESERVATIVE:

NITRIC ACID

PROJECT ID:

REPORT DATE:

ANALYZED BY: ANALYSIS DATE: DIGESTION DATE: 06/16/04

QS / GP SEE BELOW

SEE BELOW

131 MAIN STREET

TOTAL RCRA METALS

SAMPLE NUMBER:

149939 MW-A

**SAMPLE LOCATION:** 

RESULTS **DETECTION LIMIT** DIGESTION **ANALYSIS** (mg/L) (mg/L) DATE DATE ARSENIC ND 0.05 06/08/04 06/09/04 **BARIUM** 0.0370 0.03 06/08/04 06/09/04 **CADMIUM** 0.005 ND 06/08/04 06/09/04 CHROMIUM ND 0.06 06/08/04 06/09/04 LEAD ND 0.010 06/08/04 06/09/04 **MERCURY** 0.001 ND 06/08/04 06/08/04 SELENIŲM 0.05 06/08/04 06/09/04 ND SILVER ΝĎ 0.007 06/08/04 06/09/04

#### ND = NOT DETECTED

#### Method Reference:

**EPA Method** 

3010A (1) Metal Preparation

6010B (1) Inductively Coupled Plasma

**EPA Method EPA Method** 

245.1 (2) Manual Cold Vapor (Mercury)

U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

<sup>2)</sup> U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples", Supplement I-EPA/600/R-94-111-May 1994.

CLIENT NAME:

**DECOULOS & COMPANY** 

GROUNDWATER

PROJECT ID: REPORT DATE: 131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE:

06/03/04

ANALYZED BY:

06/16/04

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT

ANALYSIS DATE:

Q\$ / GP SEE BELOW

DIGESTION DATE:

SEE BELOW

#### **METALS QC**

Ì		Spike	
	Blank	% Rec.	Limits
Arsenic	ND	90%	80-120%
Barium	ND		80-120%
Cadmium	ND	86%	80-120%
Chromium	ND	88%	80-120%
Lead	ND	91%	80-120%
Mercury	ND	105%	80-120%
		The second secon	
Selenium	ND	84%	80-120%
			!
Silver	ND	95%	80-120%

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE: SOIL 06/03/04 REPORT DATE: ANALYZED BY:

06/16/04 QS / GP

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT

ANALYSIS DATE: DIGESTION DATE: SEE BELOW SEE BELOW

**TOTAL RCRA METALS** 

**SAMPLE NUMBER:** 

149941

149942

**SAMPLE LOCATION:** 

ESE-1 ESE-2

	RESI (mg/		DETECTION LIMIT (mg/Kg)	DIGESTION DATE	ANALYSIS DATE	
ARSENIC	ND	ND	8.70	06/07/04	06/08/04	
BARIUM	5.83	9.31	3.60	06/07/04	06/08/04	
CADMIUM	ND	ND	5.94	06/07/04	06/08/04	
CHROMIUM	ND	ND	6.90	06/07/04	06/08/04	
LEAD	11.7	15.8	8.76	06/07/04	06/08/04	
MERCURY	ND	ND	0.100	06/07/04	06/07/04	
SELENIUM	ND	ND	7.59	06/07/04	06/08/04	
SILVER	ND	ND	0.33	06/08/04	06/09/04	

#### ND = NOT DETECTED

#### Method Reference:

**EPA Method** 

3050A (1) Metals Preparation

EPA Method

6010B (1) Inductively Coupled Plasma

**EPA Method** 

7471 (1) <sup>^</sup>

Manual Cold Vapor (Mercury)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

<sup>2)</sup> U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples", Supplement I-EPA/600/R-94-111-May 1994.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE: REC'D BY LAB:

SOIL 06/03/04 06/03/04 REPORT DATE: ANALYZED BY: ANALYSIS DATE: 06/16/04 Q\$ / GP SEE BELOW

COLLECTED BY:

CLIENT

DIGESTION DATE:

SEE BELOW

# TOTAL RCRAMETALS

SAMPLE NUMBER:

149943

149944

SAMPLE LOCATION:

ESE-3 ESE-4

		ULTS /Kg)	DETECTION LIMIT (mg/Kg)	DIGESTION DATE	ANALYSIS DATE
ARSENIC	ND	ND	8.70	06/07/04	06/08/04
BARIUM	10.5	7.63	3.60	06/07/04	06/08/04
CADMIUM	ND	ND	5.94	06/07/04	06/08/04
CHROMIUM	7.47	ND	6.90	06/07/04	06/08/04
LEAD .	18.4	ND	8.76	06/07/04	06/08/04
MERCURY	ND	0.577	0.100	06/07/04	06/07/04
SELENIUM	ND	ND	7.59	06/07/04	06/08/04
SILVER	ND	ND	0.33	06/08/04	06/09/04

#### ND = NOT DETECTED

#### Method Reference:

**EPA Method** 

3050A (1) Metals Preparation

**EPA Method EPA Method** 

6010B (1) Inductively Coupled Plasma

7471 (1)

Manual Cold Vapor (Mercury)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,

<sup>1997, 3</sup>rd Edition.
2) U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples", Supplement I-EPA/600/R-94-111-May 1994.

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE: COLLECTION DATE: REC'D BY LAB:

COLLECTED BY:

SOIL 06/03/04 06/03/04 CLIENT

PROJECT ID: REPORT DATE:

131 MAIN STREET 06/16/04 QS / GP

ANALYZED BY: ANALYSIS DATE: DIGESTION DATE:

SEE BELOW SEE BELOW

#### **TOTAL RCRAMETALS**

SAMPLE NUMBER: SAMPLE LOCATION: 149945

149946 ESE-5 ESE-6

	RESU (mg/	•	DETECTION LIMIT (mg/Kg)	DIGESTION DATE	ANALYSIS DATE
ARSENIC	ND	ND	8.70	06/07/04	06/08/04
BARIUM	24.2	43.3	3.60	06/07/04	06/08/04
CADMIUM	ND	ND	5.94	06/07/04	06/08/04
CHROMIUM	ND	20.7	6.90	06/07/04	06/08/04
LEAD	61.1	172	8.76	06/07/04	06/08/04
MERCURY	0.164	ND	0.100	06/07/04	06/07/04
SELENIUM	ND	ND	7.59	06/07/04	06/08/04
SILVER	ND	1.42	0.33	06/08/04	06/09/04

#### ND = NOT DETECTED

#### Method Reference:

**EPA Method EPA Method**  Metals Preparation

3050A (1) 6010B (1)

Inductively Coupled Plasma

**EPA Method** 

7471 (1) Manual Cold Vapor (Mercury)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,

<sup>1997, 3</sup>rd Edition.

2) U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples", Supplement I-EPA/600/R-94-111-May 1994.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: **COLLECTION DATE:** 

SOIL 06/03/04 06/03/04 REPORT DATE: ANALYZED BY: ANALYSIS DATE:

DIGESTION DATE:

06/16/04 Q\$ / GP SEE BELOW SEE BELOW

REC'D BY LAB: COLLECTED BY:

CLIENT

#### **TOTAL RCRA METALS**

SAMPLE NUMBER:

149947

SAMPLE LOCATION: ESE-7

	RESULTS (mg/Kg)	DETECTION LIMIT (mg/Kg)	DIGESTION DATE	ANALYSIS DATE
ARSENIC	ND	8.70	06/07/04	06/08/04
BARIUM	87.2	3.60	06/07/04	06/08/04
CADMIUM	ND	5.94	06/07/04	06/08/04
CHROMIUM	18.8	6.90	06/07/04	06/08/04
LEAD	226	8.76	06/07/04	06/08/04
MERCURY	1.45	0.100	06/07/04	06/07/04
SELENIUM	ND	7.59	06/07/04	06/08/04
SILVER	1.66	0.33	06/08/04	06/09/04

#### ND = NOT DETECTED

#### Method Reference:

**EPA Method** 

3050A (1) Metals Preparation

EPA Method

6010B (1) Inductively Coupled Plasma

EPA Method

7471 (1) Manual Cold Vapor (Mercury)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,

<sup>1997, 3</sup>rd Edition.
2) U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples", Supplement I-EPA/600/R-94-111-May 1994.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE:

SOIL 06/03/04 REPORT DATE: ANALYZED BY: 06/16/04 QS / GP

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT

METALS QC

		Spike	
	Blank	% Rec.	Limits
Arsenic	THE PROPERTY OF THE PERSON NAMED IN COLUMN TWO IN COLUMN T	85%	80-120%
Barium	W ND	91%	80-120%
	Tiene ned misselficieries Tiene ned misselficieries	01074/0107079341914377777777434 1134/	
Cadmium	ND	83%	80-120%
Chromium	him ND in the same	87%	80-120%
	Projektarianian	aria aria aria aria da	
Lead	ND	<b>87</b> %	80-120%
l		1912-1919-5-1945/374/1767-17-161g- 1912-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5-1919-5	1
Mercury	ND	111%	80-120%
	and representation of the control of	The Colored States of the Colored States of	
Selenium	MD:	88%	80-120%
		(1) - 13 (1) - 13 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
Silver	ND.	83%	80-120%

CLIENT NAME:

**DECOULOS & COMPANY** 

SAMPLE TYPE:

GROUNDWATER

COLLECTION DATE: REC'D BY LAB: COLLECTED BY:

06/03/04 06/03/04

CLIENT

PROJECT ID:

REPORT DATE:

ANALYZED BY:

EXTRACTION DATE: 06/04/04 DIGESTION DATE:

06/16/04 CL 06/07/04

1.0

131 MAIN STREET

N/A

#### PETROLEUM HYDROCARBON SCAN

SAMPLE NUMBER: SAMPLE LOCATION: 149938

DCW-1

	RESULTS (%)	DETECTION LIMIT (%)
DIESEL/FUEL #2	ND	1.0
FUEL OIL #4	ND	1.0
FUEL OIL #6	ND	1.0
GASOLINE	ND	1.0
KEROSENE/JET FUEL	ND	1.0
MOTOR OIL	ND	1.0
TRANSFORMER OIL	ND	1.0
PARAFIN OIL	NĐ	1.0
		·
UNKNOWN HYDROCARBON QUANTITATED USING THE		
MOST SIMILAR STANDARD:		

90.2

# ND = NOT DETECTED

# Method Reference:

**DIESEL FUEL #2** 

EPA Method

Modified 8100 (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,

CLIENT NAME: SAMPLE TYPE:

**DECOULOS & COMPANY** 

SOIL

COLLECTION DATE: REC'D BY LAB: COLLECTED BY: 06/03/04 06/03/04 CLIENT PROJECT ID:

131 MAIN STREET

REPORT DATE: ANALYZED BY:

ANALYZED BY: CL ANALYSIS DATE: 06/

06/10/04

06/16/04

EXTRACTION DATE: 06/07/04

# POLYCHLORINATED BIPHENYLS

SAMPLE NUMBER: SAMPLE LOCATION: 149941 ESE-1 149942 ESE-2 149943 ESE-3

		RESULTS (μg/Kg)	DETECTION LIMIT (μg/Kg)	
Arochlor 1221	ND	ND	ND	50.0
Arochlor 1232	NÞ	ND	ND	50.0
Arochlor 1016/1242	ND	ND	ND .	50.0
Arochlor 1248	ND	ND	ND	50.0
Arochlor 1254	ND	ND	ND	50.0
Arochlor 1260	ND ·	ND	ND	50.0
Arochlor 1262	ND	ND	ND	50.0
Arochlor 1268	ND	ND	NĎ	50.0
Recovery: (30-150%)				Limit
TCMX Signal 1	78%	82%	82%	30-150%
DCBP Signal 1	88%	110%	92%	30-150%
TCMX Signal 2 DCBP Signal 2	7 <b>4</b> %	84%	82%	30-150%

# ND = NOT DETECTED Method Reference:

CALCULATIONS BASED ON DRY WEIGHT

**EPA Method** 

8082 Arochlor (1)

U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE:

SOIL 06/03/04 REPORT DATE: ANALYZED BY:

06/16/04 CL

REC'D BY LAB: **COLLECTED BY:**  06/03/04 CLIENT

ANALYSIS DATE: EXTRACTION DATE: 06/07/04

06/10/04

#### POLYCHLORINATED BIPHENYLS

SAMPLE NUMBER: SAMPLE LOCATION:

149944 ESE-4

149945 ESE-5

149946 ESE-6

	RESULTS (μg/Kg)			DETECTION LIMIT (μg/Kg)	
Arochlor 1221	ND	ND	ND	50.0	
Arochlor 1232	ND	ND	ND	50.0	
Arochlor 1016/1242	ND	ND	ND	50.0	
Arochior 1248	ND	ND	ND	50.0	
Arochlor 1254	ND .	ND	ND	50.0	
Arochlor 1260	ND	ND	ND	50.0	
Arochlor 1262	ND	ND	ND	50.0	
Arochlor 1268	ND	ND	ND	50.0	
Recovery: (30-150%)				Limit	
TCMX Signal 1	82%	68%	78%	30-150%	
DCBP Signal 1	. 98%	54%	76%	30-150%	
TCMX Signal 2	74%	64%	76%	30-150%	
DCBP Signal 2	114%	84%	98%	30-150%	

#### ND = NOT DETECTED Method Reference:

EPA Method

8082 Arochlor (1)

CALCULATIONS BASED ON DRY WEIGHT

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

CLIENT NAME:

**DECOULOS & COMPANY** 

SOIL

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE:

06/03/04

REPORT DATE: ANALYZED BY:

06/16/04 CL

REC'D BY LAB: COLLECTED BY:

06/03/04 CLIENT

ANALYSIS DATE: EXTRACTION DATE: 06/07/04

06/10/04

#### POLYCHLORINATED BIPHENYLS

SAMPLE NUMBER:

149947

SAMPLE LOCATION:

ESE-7

	RESULTS (μg/Kg)	DETECTION LIMIT (μg/Kg)
Arochlor 1221	ND	50.0
Arochior 1232	ND	50.0
Arochlor 1016/1242	ND	50.0
Arochlor 1248	ND	50.0
Arochlor 1254	ND	50.0
Arochlor 1260	ND	50.0
Arochlor 1262	ND	50.0
Arochlor 1268	ND	50.0
Recovery: (30-150%)		Limit
TCMX Signal 1	72%	30-150%
DCBP Signal 1	62%	30-150%
TCMX Signal 2	68%	30-150%
DCBP Signal 2	66%	30-150%
ND - NOT DETECTED	OALOU ATIONO DAOED OVER	

#### ND = NOT DETECTED Method Reference:

CALCULATIONS BASED ON DRY WEIGHT

**EPA Method** 

8082 Arochlor (1)

<sup>1)</sup> U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE: COLLECTION DATE: SOIL

REPORT DATE:

06/16/04

REC'D BY LAB:

06/03/04 06/03/04 CLIENT

ANALYZED BY:

CL

COLLECTED BY:

#### PCB SOLID MCP QC SHEET

BLANK = ND

 $MDL = 50 \mu g/Kg$  -

	LCS %	MS	MSD	% Rec. Limits	RPD	LIMIT
Arochlor 1221	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1232	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1016	61	N/A	: N/A	40-140	N/A	50
Arochlor 1248	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1254	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1260	84	N/A	N/A	40-140	N/A	50
SURROGATE: (30-150%)	BLANK	LCS				
TCMX SIGNAL 1	48%	48%				
DCBP SIGNAL 1	66%	94%				
TCMX SIGNAL 2	48%	50%				
DCBP SIGNAL 2	62%	88%				

CLIENT NAME:

**DECOULOS & COMPANY** 

PROJECT ID:

131 MAIN STREET

SAMPLE TYPE:

SOIL COLLECTION DATE: 06/03/04 REPORT DATE: ANALYZED BY:

06/16/04

REC'D BY LAB: COLLECTED BY: 06/03/04 CLIENT

ANALYSIS DATE:

MA-0071 06/11/04

EXTRACTION DATE: N/A

#### **TOTAL ORGANIC CARBON**

SAMPLE NUMBER	SAMPLE LOCATION	TOTAL ORGANIC CARBON (mg/Kg)	DETECTION LIMIT (mg/Kg)
•			
149941	ESE-1	4650	100
149942	ESE-2	2990	100
149943	ESE-3	14000	100
149944	ESE-4	6380	100
149945	ESE-5	36200	100
149946	ESE-6	35400	100
149947	ESE-7	68500	100

#### ND = NOT DETECTED

CALCULATIONS BASED ON DRY WEIGHT

#### Method Reference:

**EPA Method** 

9060 (1)

- 1) U.S. EPA. Test for Evaluating Solid Waste, Physical Chemical Methods, SW-846, 1986 3rd Edition.
- 1) U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples", -Supplement I-EPA/600/R-94-111-May 1994.

GEOLABS, INC. 45 JOHNSON LANE BRAINTREE, MA 02184 M-MA015

# **LIMITATIONS & EXCLUSIONS**

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

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GeoLabs, Inc.		######################################	海路の中 田田川 大学 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			2	र केन्यु हो प्रोड्स एके १६४ए अस्स एक भारताताल स	1005				Page of	7		П
Environmental Laboratories		5	である。 サルマ・ 田神神・ 音楽者・	24hrs	parties non-te non-te non-	<b>7</b>	4 p. 3			S	킮	SPECIAL INSTRUCTIONS	SNO		
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Phone: 781-848-7844 Fax: 781-848-7811	्रीचार्यक्ष भिन्नायम् विविधितसम्बद्ध	richt der Seine Laberer Bild Legaranischen Auf	Commission of a commission of		marki atili kiri Bashiranasa	हार के देवें के में एक के टीक्स का का और एक देवें किए के साम अंग्रेस एक देवें के सम्बद्ध	According to the control of the cont		Λ΄ <u>7</u> 2 Ξ 3 Ξ	- 12 kg	14	PH Wates 149948-51			
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CONTAINER CODES: A = Amber	MATRIX CODES: GW = Ground Water	₫ +	RESER = HCI	PRESERVATIVE CODES: $1 = HCI$ $7 = ICE$	/E COD!	ES:	Relinfedished By:	12/9	pate/Time  Z   M.  ≦	ેં	Redelly	2 :Kgpa	/Alsenme:	<i>Т</i> іте	1,
<b>B</b> = Bag	WW = Wastewater		= HNO <sub>3</sub>				Relinquished B#:	T~~`		T .	Peceiv	Received By:			
G = Glass	<b>DW</b> = Drinking Water	ტ .	= H <sub>2</sub> SO <sub>4</sub>	ი* ი			M. C+1	18/10	cx/a/	_	1			- - -	$\prod$
P = Ptastic S = Summa Canister	SL = Sludge S = Soil A = Air	4 r.	= Na <sub>2</sub> √ <sub>2</sub> ∪ <sub>3</sub> = NaOH	Ž I			Refinquished By:				kece.	Received By GeoLabs:	sge /	<u> </u>	7
= Other V = VOA		<u> </u>	= MeOH	: <u>I</u>				GEOLABS	18S (	CHAI		CUSTODY		1	Ţ
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Page/	Fingerprint on 149938 July	ANALYSES REQUESTED		RCRA-B	<b>3</b>							<u> </u>	7		Received By: Date/Time:	_	Received By:		Received By GeoLabs: 0/3/	CHAMOF CUSTODY	//
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क करते के के किस के क्रिकेट के का कर कर की तुसार के कुछ कर कर कर कर कर कर कर कर कर कर कर कर कर	roject N roject L	Purchase Ord Collected By:	CONTAINER		l			$\vdash$				47	ď	~s ~/	A.	11			4 K	9 (5	┨
Anger 10 - Tours of the second	0, 01923 2995	br 76-	٥	SAMPLE	Same 3		47	<b>~</b>	47	<b>4</b>	62	-	~>	<b>∀</b> ≈	MATRIX CODES:	GW = Ground Water	WW = Wastewater	. <b>DW</b> = Drinking Water	SL = Sludge S = Soil A = Air	_	
borator.	estonics	2842	CTION	_ ∾ ∢ ≅ ບ ¬ ⊡ ♡ ⊞ ≻	Ş	2	ह	8	Š	0	9	~	0	~							]
abs, Inc. nmental Lat Ison Lane ee, MA 02184 781-848-7811	Coule Stars	233. James	COLLECTION	O 4 ⊢ m → ⊢ − Σ m	20:6 6/0		1) pio	00:11 6/	00:11 6/	00:1 8/	1/3 1:00	1.15	B. B. B	13 2:15	cones:				rataine		5
GeoLabs, Inc. Environmental Laboratories 45 Johnson Lane Braintree, MA 02184 Phone: 781-848-7844 Fax: 781-848-7811	ة ا≪كٍ≋ننا	Fax: Contact: (C	J	SAMPLE	12B	13 p. 1 6	BP-3 6	Dcw-3 6	DCW3A 6	Daw 1 6	KE1-4 6	1) cw. 1 6	. MW-A 6	19 1-AIW	CONTAINER CODES:	A = Amber	<b>B</b> = Bag	<b>G</b> = Glass	P = Plastic S = Summa Canister	O = Other V = VOA	, 1210

# GeoLabs, Inc.

**Environmental Laboratories** 

#### LABORATORY REPORT

PREPARED FOR:

Decoulos & Company 3 Electronics Avenue Danvers, MA 01923

Attn: Jim Decoulos

PROJECT ID:

616

Eagle Gas

Carver

**GEOLABS CERTIFICATION #:** 

M-MA015

SAMPLE NUMBER:

153961 - 153963

**DATE PREPARED:** 

August 27, 2004

PREPARED BY:

Sherry Modestino

APPROVED BY:

Jim Chen, Laboratory Director

# MADEP MCP Response Action Analytical Report Certification Form

Laboratory N Project Loca		GeoLabs, Inc. Eagle Gas	_	Project #: MADEP RT		616	
This form pr	ovides certif	ications for the following	g data set:	153961 - 15	53963		
Sample mat	trices:	Groundwater ( )	Soil / Sedin	nent(x)	Drinking Wa	ater ( )	Other ( )
MCP SW-84 Methods U	sed	8260B() 8151A() 8270C() 8081A() 8082 () 8021B()	8330( ) VPH (× ) EPH ( )	6020 ( ) 7000 S <sup>3</sup> ( )	7470/1A ( ) 9014M <sup>2</sup> ( )	Other: ( )	
As specified Compendiu Analytical M (Check all t	m of //ethods	1- List Release Trackir 2- M - SW-846 Method 3- S - SW-846 Method	19014 or MA	DEP Physiol	ogically Ava		
An affirmat	tive respon	se to questions A, B, a	and C is req	uired for "Pi	resumptive	Certainty"	status
A		mples received by the I					No <sup>1</sup> ( )
В	Were all Qoincluded in discuss in a	A/QC procedures requir this report followed, inc a narrative QC data that or guidelines?	ed for the sp luding the re	ecified analy quirement to	tical method note and	Yes(x)	No <sup>1</sup> ()
С							
A respons	e to questic	ons D and E below is r	equired for	"Presumpti	ve Certainty	" status	
D		C performance standare nethods achieved?	ds and recon	nmendations	for the	Yes (x	) No <sup>1</sup> ( )
E		ts for all analyte-list cor	mpounds/elei	nents for the	specified	Yes (x	) No <sup>1</sup> ( )
		sweres must be addres	sed in an atta	ached Enviro	nmental Lab	oratory case	e narrative.
inquiry of	those resp	test under the pains a onsible for obtaining t of my knowledge and	he informat	ion, the mat	erial contai	upon my po ned in this a	ersonal analytical
Signature:	,	Mark Reskert	<del></del>	Position:	Lab Direct	or	_
Printed Na	ime:	Jim Chen		Date:	<u> 8/30/i</u>	m/	_

# GeoLabs, Inc.

Environmental Laboratories

# **Case Narrative**

Project ID: 616

Client Name: Decoulos & Company

Sample Number: 153961 - 153963

Received: 08/20/04

#### **Physical Condition of Samples**

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged, in appropriate containers with the correct preservation., with the following exception:

Samples received on ice at a temperature of 9 deg

#### **Project Documentation**

This project was accompanied by satisfactory Chain of Custody documentation. The sample container label(s) agreed with the Chain of Custody.

#### Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s).

SAMP		

	oil 🖾 Şedim	ent 🗆 🤇	Other			
	Broken 🖽 L	~				
l <u> </u>		pH > 2 Com				
			n MeOH or air		ers	ml MeOH
	received in N		Covering so	il? □ Not		区1:1 <u>+</u> 25%
1	d in air tight c					□ Other
Temperature  Received on ice	☐ Receive	edat4°C □	Other			
VDU ANALYTICAL DEGUNTO						
VPH ANALYTICAL RESULTS	10 1		A!: 16.1		DOM 7B	
Method for Ranges: MADEP VPH GC/N			Client ID:	DCW-4C	DCW-7B	
Method for Target Analytes: MA VPH -	GC/MS	B	Lab ID:	153961	153962	
VPH Surrogate Standards			e Collected:	8/17/04	8/18/04	
2,5-Dibromot	oluene		e Received:	8/20/04	8/20/04	
1,2-DCE			e Analyzed:	8/27/04	8/25/04	
Toluene-d8			ition Factor:	1	7	
BFB			solids (%):	100	100	
Range/Target Analyte	Elut. Range	RL	Units			
Unadjusted C5-C8 Aliphatics1	N/A	1.50	mg/Kg	ND	162	
Unadjusted C9-C12 Aliphatics1	N/A	0.50	mg/Kg	ND	56.2	
Benzene	C5-C8 Aliph	0.50	mg/Kg	ND	ND	
Ethylbenzene	C5-C8 Aliph	0.50	mg/Kg	ND	3.41	
Methyl-tert-butyl ether	C5-C8 Allph	0.25	mg/Kg	ND	ND	
Naphthalene	N/A	1.00	mg/Kg	ND	9.20	
Toluene	C5-C8 Aliph	0.50	mg/Kg	ND	1.89	
m-,p-Xylenes	C5-C8 Aliph	0.50	mg/Kg	ND	13.4	
o-Xylene	C9-C12 Aliph.	0.50	mg/Kg	ND	5.52	
C5-C8 Aliphatic Hydrocarbons2	N/A	1.50	mg/Kg	D	143	
C9-C12 Aliphatic Hydrocarbons3	N/A	0.50	mg/Kg	ND	ND	
C9-C10 Aromatic Hydrocarbons	N/A	0.50	mg/Kg	ND	108	
1,2-DCE Surrogate Recovery				103%		
Toluene-d8 Surrogate % Recovery				100%	100%	
BFB Surrogate % Recovery				96%	140%	
2,5-Dibromotoluene Surrogate % Re	ecovery				149%	AND SECURITION OF SECURITION
Surrogate Acceptance Range				70-130%	70-130%	

<sup>&</sup>lt;sup>1</sup>Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

# **CERTIFICATION**

Were all QA/QC procedures REQUIRED by the VPH Method follower Were all QA/QC performance /acceptance standards achieved?	d? ⊠ Yes □ No - Details attached □ ⊠ Yes □ No - Details attached
Were any significant modifications made to the VPH method?	□ No ⊠ Yes - Details below
Aromatic and aliphatic ranges are quantitated by GC/MS Total Ion Ch quantitated by GC/MS Selected Ion Measurements.	romatogram and all targets are
I attest under the pains and penalties of perjury that, based upon my immedately responsible for obtaining the information, the material cou the best of my knowledge, accurate and complete.	
SIGNATURE: Mark Revise	POSITION: Lab Director
PRINTED NAME: Jim Chen	DATE: 8/27/04

<sup>&</sup>lt;sup>2</sup>C<sub>5</sub>-C<sub>6</sub> Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

<sup>&</sup>lt;sup>3</sup>C<sub>9</sub>·C<sub>12</sub> Allphatic HCs exclude concentrations of Target Analytes AND C <sub>9</sub>·C<sub>10</sub> Aromatic Hydrocarbons eluting in that range

Matrix	☐ Aque		oil 🛭 Sedime		Other			
Containers			Broken 🗖 Le		"			
	Aqueous		l pH <u>≤</u> 2 □ 1					
Sample	Soil or		Samples NO				ers	mi MeÖH
Preservative	Sediment		received in M		Covering so	oil? □ Not		图1:1 <u>+</u> 25%
	,		d in air tight co					□ Other
Temperature	⊠ Rece	ived on ice	☐ Receive	:dat4°C E	] Other			
VPH ANAL								
		EP VPH GC/N				DCW-7C		
		es: MA VPH -	GC/MS [		Lab ID:	153963		
VPH Surroga	ate Standards				e Collected:	8/18/04		
	_	2,5-Dibromot	oluene		e Received:	8/20/04		
Į.	-	1,2-DCE	L		te Analyzed:	8/26/04		
1		Toluene-d8	L		ition Factor:	5		
		BFB			ıl solids (%):	100		
Range/Targ			Elut. Range	RL	Units			
Unadjusted			N/A	7.50	mg/Kg	975		
	C9-C12 Ali	phatics1	N/A	2.50	mg/Kg	1740		
Benzene			C5-C8 Aliph	2.50	mg/Kg	ND		
		C5-C8 Aliph	2.50	mg/Kg	21.5			
Methyl-tert			C5-C8 Aliph	1.25	mg/Kg	ND		
Naphthaler	<u>ie</u>		N/A	5.00	mg/Kg	60.0		<u></u>
Toluene			C5-C8 Aliph	2.50	mg/Kg	10.7		
m-,p-Xylen	es		C5-C8 Aliph	2.50	mg/Kg	84.4		
o-Xylene	kadia I bialas.	O	C9-C12 Aliph.	2.50	mg/Kg	32.0		ļ
	hatic Hydro		N/A	7.50	mg/Kg	858		ļ
	phatic Hydro		N/A N/A	2.50 2.50	mg/Kg	1627 80.7		
	omatic Hydr		IN/A	2.50	mg/Kg_	104%		erroropy unappyrophilatel
	urrogate Re	% Recovery				100%		
	gate % Rec				<del> </del>	407%		
		urrogate % R	2001001			140%		
	Acceptance		T		<del> </del>	70-130%		
		i varige de concentration	of any autropa	to(s) and/or in	tomal standards		ranco	
		ns exclude conce					1011A	

# CERTIFICATION

OLIVII IOATION	
Were all QA/QC procedures REQUIRED by the VPH Method to Were all QA/QC performance /acceptance standards achieved?	llowed? ⊠ Yes □ No - Details attached □ ☑ Yes □ No - Details attached □
Were any significant modifications made to the VPH method?	□ No ⊠ Yes - Details below
Aromatic and aliphatic ranges are quantitated by GC/MS Total I quantitated by GC/MS Selected Ion Measurements.	on Chromatogram and all targets are
I attest under the pains and penalties of perjury that, based upon immedately responsible for obtaining the information, the materi the best of my knowledge, accurate and complete.	
SIGNATURE: How Kerry	POSITION: Lab Director
PRINTED NAME: Jim Chen	DATE: 8/27/04

#### GeoLabs, Inc. Environmental Laboratories

#### VPH QC

#### 08/25/04

Matrix:	Soil (mg/Kg)	LCS	Limit	BLANK
MTBE			70-130%	ND
Benzene		95%	70-130%	NO
Toluene		98%	70-130%	NE
Ethyl Benze	ene		70-130%	NB
m.p-xylene		100%	70-130%	ND
o-xylene		103%	70-130%	ND
Naphthalen	е .	14286	70-130%	ND
Surrogate	Recoveries:			
1,2-Dichlore	oethane	104%	70-130%	106%
Toluene-D8	3	100%	70-130%	101%
BFB		98%	70-130%	97%
2,5-Dibrom	otoluene	104%	70-130%	118%

#### 08/26/04

Matrix:	Soil (mg/Kg)	LCS	Limit	BLANK
MTBE		97%	70-130%	ND
Benzene		/100%	70-130%	W ND
Toluene		namentakikaka	70-130%	ND.
Ethyl Benze	ene	116%	70-130%	ND
m,p-xylene		1140/	70-130%	· ND
o-xylene		117%	70-130%	ND
Naphthalen	ė	7440/07 T	70-130%	NE
	Recoveries:			
1,2-Dichlore	oethane		70-130%	107%
Toluene-D8	}	102%	70-130%	100%
BFB		95%	70-130%	96%
2,5-Dibrom	otoluene	109%	70-130%	//129%

#### 08/27/04

Matrix:	Soil (mg/Kg)	LCS	Limit	BLANK
MTBE			70-130%	ND /
Benzene		107%	70-130%	NO
Toluene		117%	70-130%	ND
Ethyl Benze	ene	122%	70-130%	ND//
m,p-xylene		120%	70-130%	MD
o-xylene		4 <b>2</b> 3%	70-130%	ND "
Naphthalen	e	419%	70-130%	NO
Surrogate	Recoveries:			
1,2-Dichlor	oethane	103%	70-130%	106%
Toluene-D8	3	LO196	70-130%	··· 100%
BFB		94%	70-130%	95%
2,5-Dibrom	otoluene	1129/	70-130%	130%

GEOLABS, INC. 45 JOHNSON LANE BRAINTREE, MA 02184 M-MA015

#### **LIMITATIONS & EXCLUSIONS**

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

This lab report meets all requirements of NELAC unless otherwise noted.

Any and all subsequent pages of this report are chain(s) of custody.

		at interest included included as an accomplished graph of	e to the first of		garak e garak e garak			35	SPECIAL INSTRUCTIONS	ICTIONS		
Environmental Laboratories 45 Johnson Lane Braintree, MA 02184 Phone: 781-848-7841 Fax: 781-848-7811		क्षेत्र के क्षेत्र के स्वतंत्र के स्वत क्षेत्र के स्वतंत्र के स्	and the property of the Page of the Comment of the Page of the Comment of the Page of the Comment of the Commen	0,5,0,5,0,4,5,6,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4	The second of th		ena Sobel a para minara respective de la Sobela respective de la Sobela de la Sobel	5				İ
600105 A	COMMAN 15 AVE	Project N Project L	tumber: .ocation:	'	3000	7 7	245					
THANKSTO	195 DECOULDS.	Purchase Order #: Collected By:	e Orde d By:	J !!!			-, 'V A	YON'S COND.	ANALYSES REQUESTED	QUESTED		
COLLECTION		CONTAIN	监		<u> </u>						3	
≥= ≥= ≥= >=	SAMPLE	⊢ ≻		<b>Σ</b> ∢⊢α−×	002F	O C U	GEOLABS SAMPLE NUMBER	HUN			AUTAЯЭЯМЭТ (	⊣∢œ⊽∓
8/17/8/00	//Dec	<b>100</b>	,	5	$\times$	4	13881	×			7	İ
8/18 1330 JD					겍	- - /		ν.			+	
8/0/400			<u></u>	<u> </u>	쑤	<u>&gt;</u>	153465	X			+	1
. 1					_	_						
					+						+	
		<u> </u>			!		٠, ١				$\dashv$	
CONTAINER CODES: A = Amber	MATRIX CODES: GW = Ground Water	<u>a</u> -	PRESERVATIVE CODES: 1 = HCl 7 = ICE	ATME 7	= ICE	ES:	Relinguished By:	Date/Time	Repaired By:	Je Je	Date/Time:	., ℃
	WW = Wastewater	21 6	2 = HNO <sub>3</sub>	m : =			Redinguished By:		Received By:			!
	SL = Sludge	4 (	SeN =	္ တ္လို -			Relinquished By:		Received By GeoLabs:	GeoLabs:	200	$ \overline{\mathcal{F}} $
S = Summa Canister	$S = Soil \qquad A = Aur$	O 9		<b>-</b> :				CEOI ARCCHAIN OF	4	TODY		ĺ

## GeoLabs, Inc.

#### **Environmental Laboratories**

#### LABORATORY REPORT

#### PREPARED FOR:

Decoulos & Company 3 Electronics Avenue Danvers, MA 01923

Attn: Jim Decoulos

**PROJECT ID:** 

616

131 Main Street

Carver, MA

**GEOLABS CERTIFICATION #:** 

M-MA015

**SAMPLE NUMBER:** 

154340

**DATE PREPARED:** 

September 2, 2004

PREPARED BY:

Karen Mullally

**APPROVED BY:** 

Jim Chen Laboratory Director

Location:

45 Johnson Lane

Braintree, MA 02184

Phone: (781) 848-7844

1 of 4

Fax: (781) 848-7811

#### GeoLabs, Inc.

#### Environmental Laboratories

SAMPLE IN	FORMATION						
Matrix	☐ Aqueous ☐	Soil o Sedir		Other-Air			
Containers			☐ Leaking			_	
		H <u>&lt;</u> 2 □ pH					
Sample				n MeOH or ai		ners	ml MeOH
Preservative				Covering soil			□1:1 <u>+</u> 25%
_				ma Canister			☐ Other
Temperature	☐ Received on ice	☐ Receiv	ed at 4° C E	Other			
ADLI ANAL	YTICAL RESULTS				Client ID:	EGA-1	
1				<del> — .</del>			
1	langes: MADEP APH				Lab ID:	154340	
APH Surroga	ate Standards			Dat	e Collected:	08/27/04	
	PID (2,5-Dibromotoluene	e)		Dat	e Received:	08/27/04	
	FID (2,5-Dibromotoluene	e)	ate Fraction	s Analyzed:	08/30/04		
Method for T	arget Analytes: EPA-TO14/	4		Date Targe	ets Analyzed:	08/30/04	
				Ranges Dilu	tion Factor:	1.0	
				Targets Dilu	ition Factor:	1.0	
Range/Targ	get Analyte	Elut. Range	RL (ppbv)	RL (ug/m3)	Units		
Unadjusted	C5-C8 Aliphatic Hydroca	N/A		78.0	ug/m³	ND	
Unadjusted	C9-C12 Aliphatic Hydroc	N/A		78.0	ug/m³	ND	
Benzene	-	C5-C8 Aliph	0.386	1.23	ppbv/ug/m3	0.860/2.74	
1,3-Butadie	ene	N/A	2.18	5.00	ppbv/ug/m3	ND	
Ethylbenzei	ne	C5-C8 Aliph	0.54	2.34	ppbv/ug/m3	0.700/3.03	
Methyl-tert-	butyl ether	C5-C8 Aliph	1.39	5.00	ppbv/ug/m3	ND	
2-Methylna	phthalene*	N/A	2.38	20.0	ppbv/ug/m3	ND	<u> </u>

0.940

0.95

0.38

0.46

5.00

3.58

1.65

2.00

78.0

78.0

78.0

ND

2.74/10.3

2.36/10.2

0.850/3.68

ND

ND

ND

129%

70-130%

ppbv/ug/m3

ppbv/ug/m3

ppbv/ug/m3

ppbv/ug/m3

ug/m<sup>3</sup>

ug/m³ ug/m³

N/A

C5-C8 Aliph

C5-C8 Aliph

C9-C12 Aliph.

N/A

N/A

N/A

C5-C8 Aliphatic Hydrocarbons<sup>1</sup>

C9-C12 Aliphatic Hydrocarbons<sup>2</sup>

C9-C10 Aromatic Hydrocarbons

Surrogate Acceptance Range

2,5-Dibromotoluene (PID) Surrogate Recovery 2,5-Dibromotoluene (FID) Surrogate Recovery

#### **CERTIFICATION**

Naphthalene\*

m-,p-Xylenes

Toluene

o-Xylene

CENTIFICATION	
Were all QA/QC procedures REQUIRED by the APH Method follo Were all QA/QC performance /acceptance standards achieved? Were any significant modifications made to the APH method??	✓ Yes □ No - Details attached
Aliphatic and Aromatic ranges quantitated by GC PID/FID.	
I attest under the pains and penalties of perjury that, based immedately responsible for obtaining the information, the matthe best of my knowledge, accurate and demplete.	upon my inquiry of those individuals aterial contained in this report is, to
SIGNATURE: h/j///	POSITION: Lab Director
PRINTED NAME: Jim Chen	DATE: 09/02/04

<sup>&</sup>lt;sup>1</sup>C<sub>s</sub>.C<sub>s</sub> Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

<sup>&</sup>lt;sup>2</sup>C<sub>9</sub>.C<sub>12</sub> Aliphatic HCs exclude concentrations of Target Analytes AND C<sub>9</sub>.C<sub>10</sub> Aromatic Hydrocarbons eluting in that range

<sup>\*</sup>Compounds quantitated by TICS

#### GEOLABS, INC. 45 JOHNSON LANE BRAINTREE, MA 02184 M-MA015

#### **LIMITATIONS & EXCLUSIONS**

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Any and all subsequent pages of this report are chain(s) of custody.

GeoLai	os, In	C.	<del></del>								ime 📑			•		Page		of(			
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	1-848-7																				
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E-mail:	1			ECONOS COM		TAINER	<u> </u>	$\overline{}$		_	[	├─	1	А	NALY	SES I	REQU	ESIE	<u> </u>		
SAMPLE ID	D	T I M E	S A M B L E D	SAMPLE LOCATION	T Y P E	Q U A N T	M A T R I X	C O M P	GRAB	P R E S	GEOLABS SAMPLE NUMBER	HOH								TEMPERATURE	L A B P H
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G = Glass				<b>DW</b> = Drinking Wa		3 = H	-			'	Jul 932	88	/27	64		1		//	_	ı	
P = Plastic				<b>SL</b> = Sludge			a <sub>2</sub> S <sub>2</sub> O <sub>3</sub>				Relinquish <b>ed</b> By:	/	7	7	Rece	iyed i	By Ge	byabs	» X	12	7
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#### ALPHA ANALYTICAL LABORATORIES

## Eight Walkup Drive Westborough, Massachusetts 01581-1019 (508) 898-9220 www.alphalab.com

#### MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

#### CERTIFICATE OF ANALYSIS

Client: Decoulos & Company Laboratory Job Number: L0409661

Address: 3 Electronics Ave

Danvers, MA 01923 Date Received: 02-SEP-2004

Attn: Mr. Jim Decoulos Date Reported: 10-SEP-2004

Project Number: 616 Delivery Method: Alpha

Site: EAGLE GAS

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0409661-01 L0409661-02	DCW-7 ERW-2	131 MAIN, CARVER 131 MAIN, CARVER
L0409661-03	BP-5RR	131 MAIN, CARVER

Authorized by: <u>James Todaro</u>

This document electronically signed

09100411:08 Page 1 of 9

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

## ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0409661

TPH-8100M

L0409661-01 through -03 and the associated Laboratory Duplicate have elevated limits of detection due to the 20x dilutions required by the elevated concentrations of target compounds in the sample. The Surrogate % Recoveries were not recovered due to the dilutions required to quantitate the samples.

09100411:08 Page 2 of 9

#### ALPHA ANALYTICAL LABORATORIES CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0409661-01

DCW-7

Date Collected: 26-AUG-2004 13:30

Sample Matrix:

OIL

Date Received: 02-SEP-2004 Date Reported: 10-SEP-2004

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 1-Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA PREP	TE ANAL	ID
Hydrocarbon Scan by GC 8100M				1	8100M	0903 16:30	0906 20:2:	ı MS
Mineral Spirits	ND	mg/kg	200000					
Gasoline	ND	mg/kg	200000					
Fuel Oil #2/Diesel	940000	mg/kg	200000					
Fuel Oil #4	ND	mg/kg	200000					
Fuel Oil #6	ND	mg/kg	200000					
Motor Oil	ND	mg/kg	200000					
Kerosene	ND	mg/kg	200000					
Transformer Oil	ND	mg/kg	200000					
Unknown Hydrocarbon	ND	mg/kg	200000					
Surrogate(s)	Recovery		QC Crit	teria	a.			
o-Terphenyl	ND	<del>g</del>	40-140					

Comments: Complete list of References and Glossary of Terms found in Addendum I

09100411:08 Page 3 of 9

#### ALPHA ANALYTICAL LABORATORIES CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0409661-02

ERW-2

Date Collected: 26-AUG-2004 14:00

Sample Matrix: OIL Date Received: 02-SEP-2004 Date Reported: 10-SEP-2004

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 1-Glass

PARAMETER	RESULT	UNITS	RDL	REF 1	ÆTHOD	DA PREP	TE ANAL	ID
Hydrocarbon Scan by GC 8100M			_	: (	9100M	0903 16:30	0906 21:2	5 MS
Mineral Spirits	ND	mg/kg	200000					
Gasoline	ND	mg/kg	200000					
Fuel Oil #2/Diesel	870000	mg/kg	200000					
Fuel Oil #4	ND	mg/kg	200000					
Fuel Oil #6	ND	mg/kg	200000					
Motor Oil	ND	mg/kg	200000					
Kerosene	ND	mg/kg	200000					
Transformer Oil	ND	mg/kg	200000					
Unknown Hydrocarbon	ND	mg/kg	200000					
Surrogate(s)	Recovery		QC Crit	eria				
o-Terphenyl	ND	<del>§</del>	40-140					

#### ALPHA ANALYTICAL LABORATORIES CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0409661-03 Date Collected

109661-03 Date Collected: 26-AUG-2004 14:30

 BP-5RR
 Date Received : 02-SEP-2004

 Sample Matrix:
 OIL
 Date Reported : 10-SEP-2004

Condition of Sample: Satisfactory Field Prep: None

Number & Type of Containers: 1-Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA PREP	TE ANAL	ID
Hydrocarbon Scan by GC 8100				1	8100M	0903 16:30	0906 22:29	MS
Mineral Spirits	ND	mg/kg	200000					
Gasoline	ND	mg/kg	200000					
Fuel Oil #2/Diesel	940000	mg/kg	200000					
Fuel Oil #4	ND	mg/kg	200000					
Fuel Oil #6	ND	mg/kg	200000					
Motor Oil	ND	mg/kg	200000					
Kerosene	ND	mg/kg	200000					
Transformer Oil	ND	mg/kg	200000					
Unknown Hydrocarbon	ND	mg/kg	200000					
Surrogate(s)	Recovery		QC Crit	teria	ì			
o-Terphenyl	ND	ŧ	40-140					

Comments: Complete list of References and Glossary of Terms found in Addendum I

## ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0409661

Parameter	Value 1	Value 2	Units	RPD	RPD	Limits
Hydrocarbon	Scan by GC 8100M	for sample	e(s) 01-03	(L040966	1-01, 1	WG180056)
Mineral Spirits	ND	ND	mg/kg	NC	40	
Gasoline	ND	ND	mg/kg	NC	40	
Fuel Oil #2/Diesel	940000	950000	mg/kg	1	40	
Fuel Oil #4	ND	ND	mg/kg	NC	40	
Fuel Oil #6	ND	ND	mg/kg	NC	40	
Motor Oil	ND	ND	mg/kg	NC	40	
Kerosene	ND	ND	mg/kg	NC	40	
Transformer Oil	ND	ND	mg/kg	NC	40	
Unknown Hydrocarbon	ND	ND	mg/kg	NC	40	
Surrogate(s)	Reco	very				QC Criteria
o-Terphenyl	ND	ND	%	NC		40-140

## ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0409661

Parameter		% Recovery QC Criteria			
Hydrocarbon Petroleum Spike	Scan by GC	8100M LCS for	sample(s)	01-03 (WG180056) 40-140	
Surrogate(s) o-Terphenyl			101	40-140	

## ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0409661

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA PREP	TE ANAL	ID
Blank Analysis	for samp	le(s) 01-03	(WG180	056-:	1)			
Hydrocarbon Scan by GC 8100M	_			1	8100M	0903 16:30	0905 00:5	O MS
Mineral Spirits	ND	mg/kg	10000					
Gasoline	ND	mg/kg	10000					
Fuel Oil #2/Diesel	ND	mg/kg	10000					
Fuel Oil #4	ND	mg/kg	10000					
Fuel Oil #6	ND	mg/kg	10000					
Motor Oil	ND	mg/kg	10000					
Kerosene	ND	mg/kg	10000					
Transformer Oil	ND	mg/kg	10000					
Unknown Hydrocarbon	ND	mg/kg	10000					
Surrogate(s)	Recovery		QC Cri	teri	a			
o-Terphenyl	103.	8	40-140					

## ALPHA ANALYTICAL LABORATORIES ADDENDUM I

#### REFERENCES

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

#### GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found. METHOD Method number by which analysis was performed.

ID Initials of the analyst.

ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

#### LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

Eight Walkup Drive, Westborough, MA 01581-1019

Tel: 508-898-9220 or 800-624-9220 x179

Fax: 508-898-9193 Visit us at: www.alphalab.com

Michelle M. (Wilta) Morris, Client Services

Direct Phone Line: 508-439-5179 Email: mwlita@alphalab.com



# **Fax**

To: Jim Decoulos	From: Michelle M. (Wiita) Morris
company: Decoulous & Company	Pages: 4
Fax: 877-842-9629	Date: 9/17/04
Re: Chromatograms	GC:
L0409661	

• Comments:

Bata File: \\Orgservi\ee\chem\GCEXT\Petro6a.i\040906a.b\004F0101.B

Date : 06-SEP-2004 20:21

Client ID:

Sample Info: 10409661-01, 8100-s, x20 rr

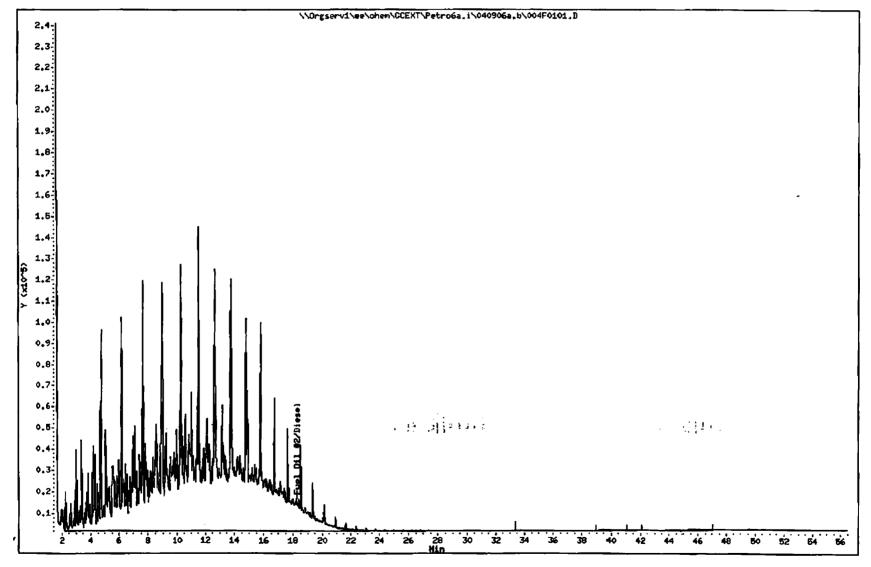
Column phase:

Instrument: Petro6a,i

Page 3

Operator: msh

Column diameter: 0.53



Data File: \\Orgservi\ee\ohem\GCEXT\Petro6a.i\040906a.b\008F0101.D

Date : 06-SEP-2004 21:25

Client ID:

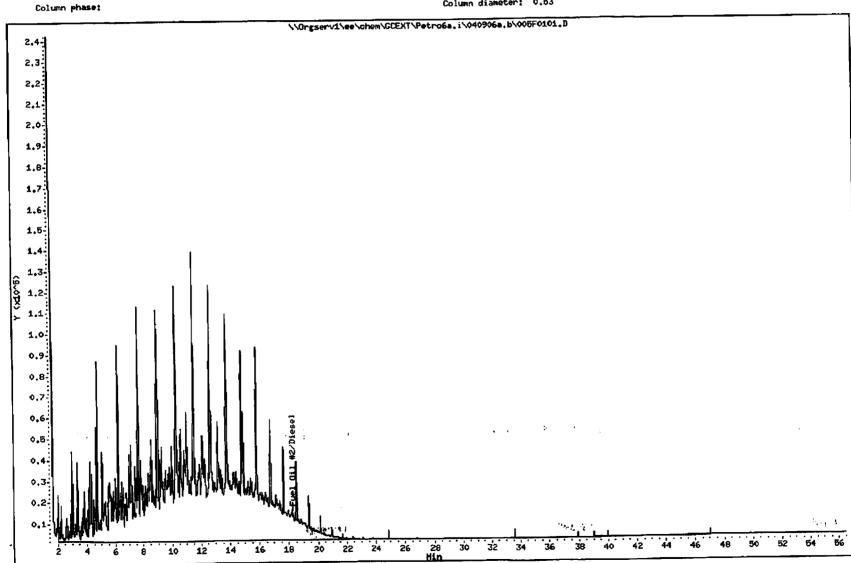
Sample Info: 10409661-02, 8100-s, x20 rr

Instrument: Petro6a.i

Page 3

Operator: msh

Column diameter: 0.53



Data File: \\Orgserv1\ee\chem\CCEXT\Petro6a.i\040906a.b\006F0101.B

Date : 06-SEP-2004 22:29

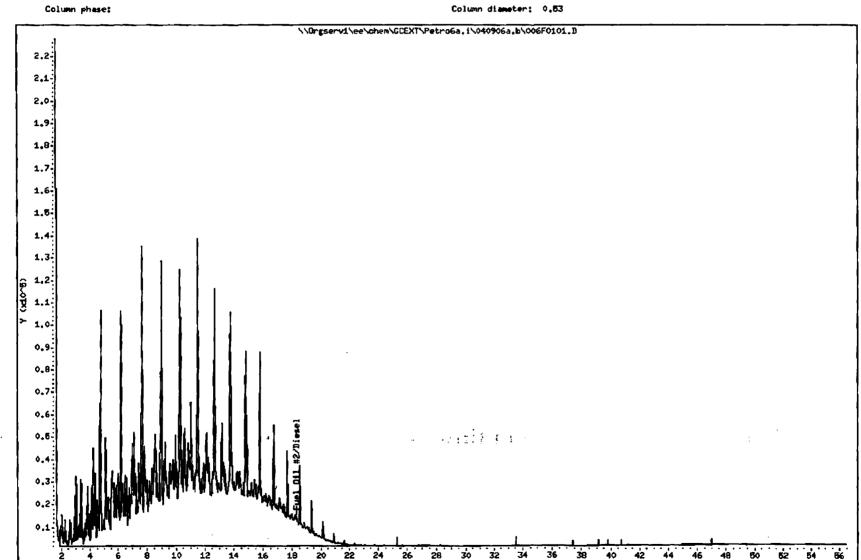
Client ID:

Sample Info: 10409661-03, 8100-s, x20 rr

Instrument: Petro6a.i

Page 3

Operator: msh



APPENDIX B
NAPL WITHDRAWAL FORMS

#### NAPL WITHDRAWAL FORM EAGLE GAS, INC. 131 MAIN STREET, CARVER, MA DEP RTN 4-17582

DATE	TIME	THICKNESS OF DIESEL NAPL ERW-2 (IN)	EST. VOLUME OF DIESEL NAPL WITHDRAWN ERW-2 (GAL)	THICKNESS OF DIESEL NAPL ERW-4 (IN)	EST. VOLUME OF DIESEL NAPL WITHDRAWN ERW-4 (GAL)
10/7	380	40	4	<u>22</u>	3*
10/13	98M	38	4*		
10/14	10.30 AM	4	0.5		
10/14	6.30PM	12			
81/01	9 pm	3	0.5	15	<u> 3*</u>
10/19	98m	_ 2	0.5	4	*
10/20	98m	3			
10/22	IRM			0.5	0.05
10125	9 PM	<u> </u>	000		0.6
10/27	9pm	2	0.5	0.5	0.05
	-				
					-

I hereby certify that the following measurements and withdrawals occurred from the above referenced monitoring wells and that the diesel fuel withdrawn from the wells was completely emptied into the dedicated 55 gallon drum located on the southerly side of the building at 131 Main Street in Carver, MA.

Najib Badaoul, President Eagle Gas, Inc. Date

\* Mix with water

# NAPL WITHDRAWAL FORM EAGLE GAS, INC. 131 MAIN STREET, CARVER, MA DEP RTN 4-17582

<u>DATE</u>	TIVE	THICKNESS OF DIESEL NAPL ERW-1 (IN)	EST. VOLUME OF DIESEL NAPL WITHDRAWN ERW-1 GALL  N. KSTER	EST. VOLUME OF DIESEL NAPL FROM CANNISTER ERW-2 1950	THICKNESS OF DIESEL NAPL ERW-4 (III)	EST. VOLUME OF DIESEL NAFL WITHDRAWN ERVV-4 (CAL)
10/28/2004	4.00 PM	<u>4</u>	0.20	1.5		~
10/28	10pm			1.86	<del></del>	
10/29	10AM		**************************************	.46		
10(29	900			156		
10/30	IPM			.56		
10131	gf~					
M	yem	5	0.5	1.06		
		<del></del>	TOTAL	4.2		
		<del></del>			<del></del>	
		<del></del>				
	<del></del>	<del></del>	<del></del>			
<del></del>						

I hereby certify that the following measurements and withdrawals occurred from the above referenced monitoring wells and that the diesel fuel withdrawn from the wells was completely emptied into the dedicated 55 gallon drum located on the southerly side of the building at 131 Main Street in Carver, MA.

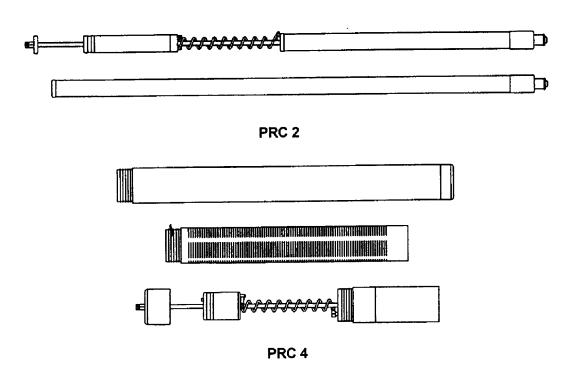
Najib Badaoui, President Eagle Gas, Inc. 1111/04

APPENDIX C KECK PRC SKIMMER SPECIFICATIONS AND SCHEMATICS



# Product Recovery Canister

Installation and Operation Manual



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Function and Theory	p. 03
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System Components	p. 04
Chapter 2: System Installation / Operation	<b>p. 0</b> 6
Chapter 3: System Maintenance	p. 07
Chapter 4: System Troubleshooting	p. 08
Chapter 5: System Specifications	n 10
Chapter 5: System Specifications	- 11
Chapter 6: System Schematic	p. 11
Chapter 7: Replacement Parts List	p. 12
Warranty and Repair	p. 20
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### **System Components**

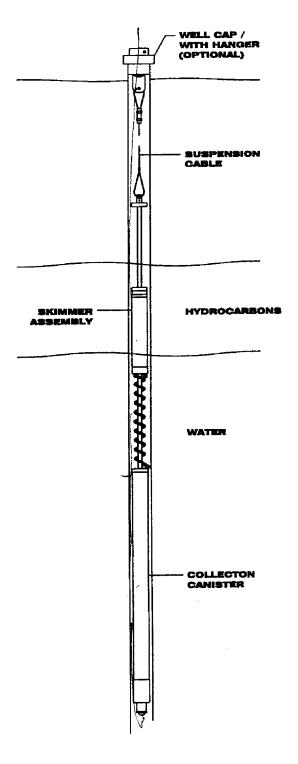
The Keck Canister consists of two (2) major components; a product skimmer assembly and a collection canister (see page 5 figures 1-3). On the 4" model, the skimmer assembly is protected by a slotted screen which pre-filters the incoming product and protects the intake assembly from damage. The skimmer assembly collects free product and passes it through a coiled hose to the collection canister. Recovered product is evacuated by removing the Keck Canister from the well and opening the drain on the bottom of the device. Increased capacity collection canisters are available and easily installed by simply unscrewing the collection canister section and replacing it with a larger collection canister and weight assembly. When going from smaller to larger collection canisters, consideration must be made for weight. Going from larger to smaller is not a problem.

## **Chapter 1: System Description**

## **Function and Theory**

The Keck Canister is a passive, skimmer device designed to recover light floating hydrocarbons (such as gasoline and diesel fuel) from the ground water in wells that are 2 inches and larger. Featuring a floating oleophilic/hydrophobic intake assembly, the Keck Canister will automatically collect and skim floating product down to a sheen. The skimmer assembly features over 12 inches of intake travel to accommodate water level fluctuations. The unit is suspended in the well at the desired recovery depth by the 25 feet of supplied stainless steel suspension cable.

Chapter 6: System Schematic



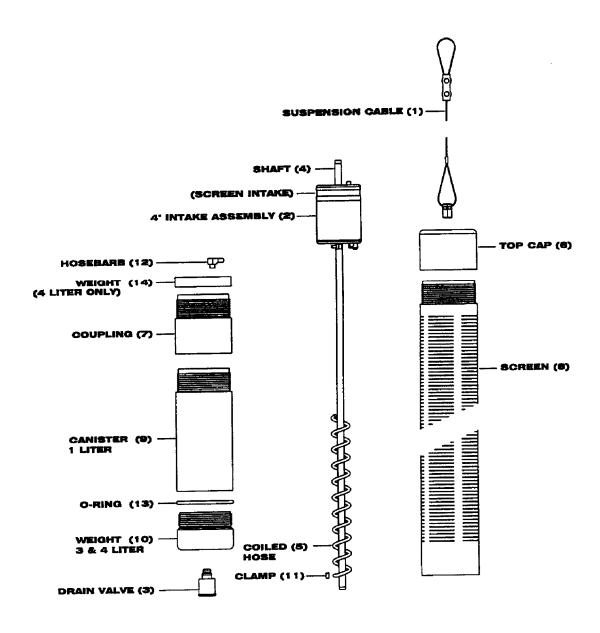


Figure 6 – Standard 4" PRC Skimmer Assembly (3&4 Liter) Parts List 16