# ATTACHMENT A LABORATORY ANALYTICAL REPORTS

Friedman & Bruya, Inc. #605167

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 7, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 10, 2016 from the TOC\_01-600\_20160510 WORFDB8, F&BI 605167 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0607R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 10, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160510 WORFDB8, F&BI 605167 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605167 -01	01MW37-20160510
605167 -02	01MW38-20160510

Sample 01MW37-20160510 was sent to Aquatic Research for sulfate analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605167 Date Extracted: 05/11/16 Date Analyzed: 05/11/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW37-20160510 605167-01	<1	<1	<1	<3	<100	95
01MW38-20160510 605167-02	1.7	<1	2.0	<3	<100	102
Method Blank 06-896 MB	<1	<1	<1	<3	<100	95

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605167 Date Extracted: 05/12/16 Date Analyzed: 05/12/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW37-20160510 605167-01	380 x	<250	100
01MW38-20160510 605167-02	930 x	<250	116
Method Blank 06-959 MB	<50	<250	97

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605167

### **QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER** SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, **XYLENES, AND TPH AS GASOLINE** USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605167-01 (Duplicate)						
	Reporting	Sample	Duplicate	RPD		
Analyte	Units	Result	Result	(Limit 20)		
Benzene	ug/L (ppb)	<1	<1	nm		
Toluene	ug/L (ppb)	<1	<1	nm		
Ethylbenzene	ug/L (ppb)	<1	<1	nm		
Xylenes	ug/L (ppb)	<3	<3	nm		
Gasoline	ug/L (ppb)	<100	<100	nm		

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/L (ppb)	50	92	65-118
Toluene	ug/L (ppb)	50	94	72-122
Ethylbenzene	ug/L (ppb)	50	96	73-126
Xylenes	ug/L (ppb)	150	94	74-118
Gasoline	ug/L (ppb)	1,000	95	69-134

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605167

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	97	96	63-142	1

### ENVIRONMENTAL CHEMISTS

## **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

 $\ensuremath{\text{ip}}$  - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

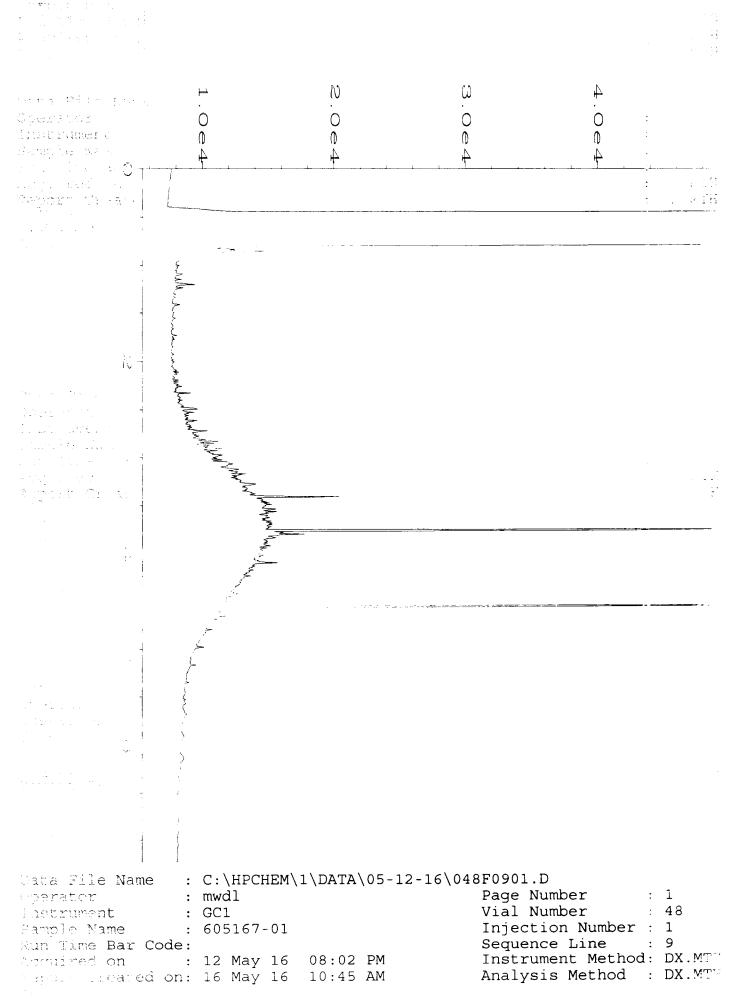
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

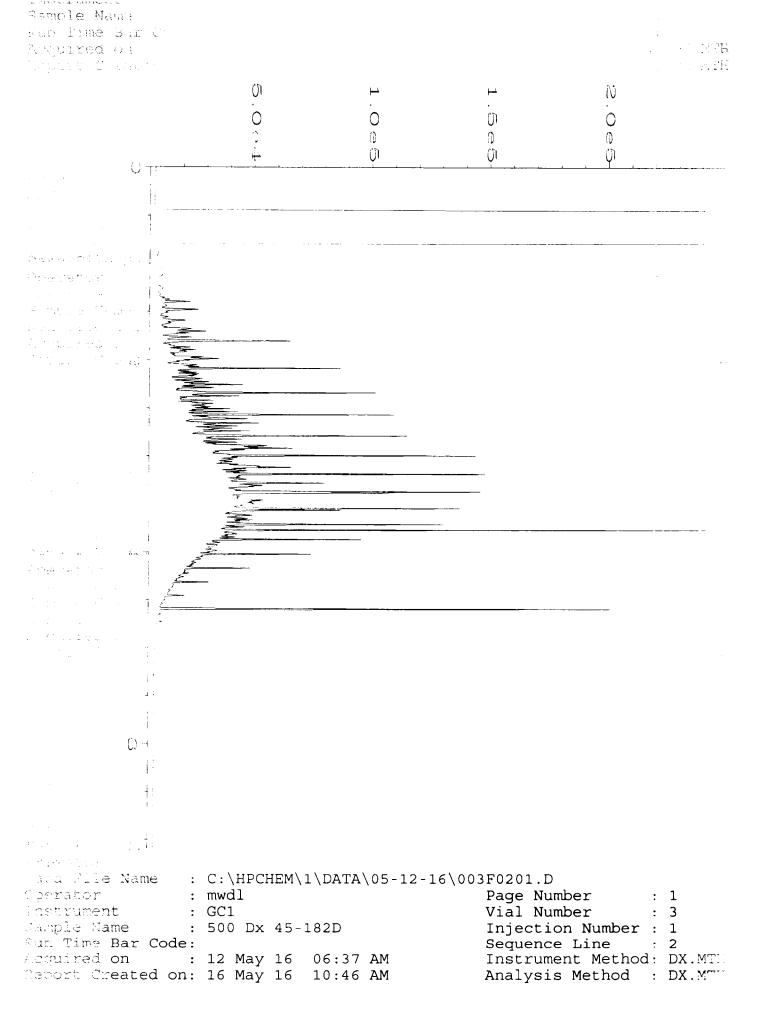


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# IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-63	PA	GE 1	
REPORT DATE:	06/02/16			
DATE SAMPLED:	05/10/16	DATE RECEIVED:	05/12/16	
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER				
SAMPLES FROM FRIEDMAN & BRUYA, IN	C. / PROJECT NO. 605167			

#### CASE NARRATIVE

One water sample was received by the laboratory in good condition and analyzed according to the chain of custody. No other difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	SULFATE
SAMPLE ID	(mg/L)
01MW37-20160510	67.7



# **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-63	PAG	E 2		
REPORT DATE:	06/02/16				
DATE SAMPLED:	05/10/16	DATE RECEIVED:	05/12/16		
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER					
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605167					

#### QA/QC DATA

OC DADAMETED	
QC PARAMETER	SULFATE
	(mg/L)
METHOD	SM184500SO4E
DATE ANALYZED	06/01/16
DETECTION LIMIT	1.00
DUPLICATE	
SAMPLE ID	BATCH
ORIGINAL	2.43
DUPLICATE	2.40
RPD	1.27%
14.5	112770
SPIKE SAMPLE	
STIKE STANDED	
SAMPLE ID	BATCH
ORIGINAL	2.43
SPIKED SAMPLE	12.4
SPIKE ADDED	10.0
% RECOVERY	100.08%
% RECOVER I	100.08%
OC CUECK	
QC CHECK	
FOUND	0.00
FOUND	9.88
TRUE	10.0
% RECOVERY	98.80%
BLANK	<1.00

RPD = RELATIVE PERCENT DIFFERENCE.

NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Mamien Hademsh"

Damien Gadomski Project Manager

FB1014-63 subcontract sample chain of custody

Send Report <u>To Micha</u>	<u>el Erdahl</u>		· · ·	SUBCO	ONTRA	CTER	Aa,	Reso	rch						age # IRNA	{ ROUND	_of TIME	
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Phone # <u>(206) 285-8282</u>	Fax #_	(206) 283	-5044		Please	Emai	il Resi	ults 			· · ·		. 0	Return	ı samı		· · ·	
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01MW37-20160510		5/10/16	1415	water	1					X								
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605167	SAMPLE CHAIN OF CUSTODY	ME OS/1	0/16 VI/C03/A
Send Report To <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (signature)	an a	Page #ur
Company SoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	Kstandard (2 Weeks) RUSH
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS 1 low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Sample ID	Sample Location	Samp <del>le</del> Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
	OIMW37		OLA-E	5/10/16	1415	H20	5	X	×	×			$\times$					
1MW38-20160510	OIMW38	·	02A-D	5/10/16	1507	H2O	4	×	×	×								
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by	JONATHAN LOEFFLER	SOUNDEARTH	5/10/16	4:20
Seattle, WA 98119-2029	Received by:	Elizabeth Rofford	FBR	5/10/16	4.20
Ph. (206) 285-8282	Relinquished by:	- Server Lattora			7:20
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605168

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

May 27, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 10, 2016 from the TOC\_01-600\_20160510 WORFDB8, F&BI 605168 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0527R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 10, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160510 WORFDB8, F&BI 605168 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605168 -01	01MW100-20160510
605168 -02	01MW99-20160510
605168 -03	01MW17-20160510
605168 -04	01MW39-20160510
605168 -05	FD02-20160510

The 8270D surrogate phenol-d6 failed the acceptance criteria for the samples. The data were flagged accordingly. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/27/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605168 Date Extracted: 05/11/16 Date Analyzed: 05/11/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW100-20160510 605168-01	<1	<1	<1	<3	<100	97
01MW99-20160510 605168-02	<1	<1	<1	<3	<100	97
01MW17-20160510 605168-03	<1	<1	<1	<3	<100	96
01MW39-20160510 605168-04	<1	<1	<1	<3	<100	96
FD02-20160510 605168-05	<1	<1	<1	<3	<100	95
Method Blank 06-896 MB	<1	<1	<1	<3	<100	95

Results Reported as ug/L (ppb)

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/27/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605168 Date Extracted: 05/12/16 Date Analyzed: 05/12/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW100-20160510 605168-01	<50	<250	102
01MW99-20160510 605168-02	850 x	<250	110
01MW17-20160510 605168-03	330 x	<250	105
01MW39-20160510 605168-04	220 x	<250	110
FD02-20160510 605168-05	310 x	<250	102
Method Blank 06-959 MB	<50	<250	97

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW100-20160510 05/10/16 05/17/16 05/18/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160510 WORFDB8 605168-01 051807.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromopheno	% Recovery: 53 32 vo 01 79	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds: Pentachlorophenol	Concentration ug/L (ppb) <0.2		

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW99-20160510 05/10/16 05/17/16 05/18/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160510 WORFDB8 605168-02 051808.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recovery: 55 36 vo 01 125	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:	Concentration ug/L (ppb)		
Pentachlorophenol	<0.2		

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicable 05/17/16 05/18/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160510 WORFDB8 06-982 mb 051806.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophene	% Recovery: 53 33 vo ol 79	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds: Pentachlorophenol	Concentration ug/L (ppb) <0.2		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/27/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605168

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605167-01 (Duplicate)

5	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

		Percent					
	Reporting	Spike	Recovery	Acceptance			
Analyte	Units	Level	LCS	Criteria			
Benzene	ug/L (ppb)	50	92	65-118			
Toluene	ug/L (ppb)	50	94	72-122			
Ethylbenzene	ug/L (ppb)	50	96	73-126			
Xylenes	ug/L (ppb)	150	94	74-118			
Gasoline	ug/L (ppb)	1,000	95	69-134			

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/27/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605168

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	97	96	63-142	1

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/27/16 Date Received: 05/10/16 Project: TOC\_01-600\_20160510 WORFDB8, F&BI 605168

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

5 5	Reporting	Spike	Percent Recovery	Percent Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

ENVIRONMENTAL CHEMISTS

# **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

 $\ensuremath{\mathsf{ca}}$  - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

 $hr\ \text{-}\ The\ sample\ and\ duplicate\ were\ reextracted\ and\ reanalyzed.\ RPD\ results\ were\ still\ outside\ of\ control\ limits.\ Variability\ is\ attributed\ to\ sample\ inhomogeneity.$ 

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

 $\ensuremath{\text{ip}}$  - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

 ${\rm J}$  - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

605168	SAMPLE CHAIN OF CUSTODY	ME 05-10-	-16 COU/V(
Send Report To Tim Brown, cc: Jessica Brown, Courtney			Page #
Send Report To <u>Tim Brown, CC. Jessica Brown, CCCIII Cy</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	PROJECT NAME/NO.	PO #	X Standard (2 Weeks) RUSH
CompanySoundEarth Strategies, Inc.	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
Address 2811 Fairview Ave E. Suite 2000	REMARKS	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days
City, State, ZIP <u>Seattle, WA 98102</u>	low level detection limit of 0.219 ug/L for PCP.		Return samples Will call with instructions

Sample ID	Sample Location	Samp <del>le</del> Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
olm Wioo -zalla	510 DIANU	0 25	011-6	5/10/11.	1212	H20	5	X	X	X	X							
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01mW39-2016 051	O CIMW39	1 14	041	5/10/16	1522	H20	4	X	X	L X								
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	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Friedman & Bruya, Inc. 3012 16th Avenue West	Pelinguished by: T 1172	Trovis Zundi	Sound Earth	5/10/16	4:28
5012 1011 2010 2010 2010	mand irans bacalt	Trovis Candi			11:2
Seattle, WA 98119-2029	Received by: alunt the	Clizabeth Rafford	13B	5/10/16	4:20
Ph. (206) 285-8282	Relinquished by:	3			
Fax (206) 283-5044	Received by:				

187

and the

Friedman & Bruya, Inc. #605195

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 14, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 11, 2016 from the TOC\_01-600\_20160511 WORFDB8, F&BI 605195 project. There are 15 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0614R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 11, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160511 WORFDB8, F&BI 605195 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605195 -01	L2-20160511
605195 -02	01MW13-20160511
605195 -03	01MW90-20160511

Sample 01MW13-20160511 was sent to Aquatic Research for sulfate, nitrate, nitrite, total phosphorus, hardness, alkalinity, TKN, and sulfide analyses. In addition, the sample was sent to Amtest for ferrous iron analysis. The reports are enclosed.

Several 8270D surrogates failed the laboratory acceptance criteria in sample L2-20160511 and the method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605195 Date Extracted: 05/12/16 Date Analyzed: 05/12/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW13-20160511 605195-02	<1	<1	<1	<3	<100	97
01MW90-20160511 605195-03	<1	<1	<1	<3	<100	96
Method Blank 06-943 MB	<1	<1	<1	<3	<100	96

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605195 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	Surrogate <u>(% Recovery)</u> (Limit 47-140)
01MW13-20160511 605195-02	2,000 x	590 x	79
01MW90-20160511 605195-03	4,500 x	1,400 x	76
Method Blank 06-980 MB	<50	<250	99

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	01MW13-20160511	Client:	SoundEarth Strategies
Date Received:	05/11/16	Project:	TOC_01-600_20160511, F&BI 605195
Date Extracted:	05/23/16	Lab ID:	605195-02
Date Analyzed:	05/24/16	Data File:	605195-02.123
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	1,540		
Manganese	957		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID: Date Received: Date Extracted:	Method Blank NA 05/23/16	Client: Project: Lab ID:	SoundEarth Strategies TOC_01-600_20160511, F&BI 605195 I6-325 mb
Date Analyzed:	05/23/16	Data File:	I6-325 mb.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	<50		
Manganese	<1		

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	L2-20160512 05/11/16 05/17/16 05/18/16 Water ug/L (ppb)	1	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511, F&BI 605195 605195-01 051809.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromopher	nol	% Recovery: 62 38 vo 116	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blar Not Applical 05/17/16 05/18/16 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511, F&BI 605195 06-982 mb 051806.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 53 33 vo 79	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	01MW13-20160511	Client:	SoundEarth Strategies
Date Received:	05/11/16	Project:	TOC_01-600_20160511, F&BI 605195
Date Extracted:	05/23/16	Lab ID:	605195-02
Date Analyzed:	05/23/16	Data File:	021F2101.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	150		
Ethane	<10		

<10

## ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Method Blank NA 05/23/16 05/23/16 Water	Client: Project: Lab ID: Data File: Instrument:	SoundEarth Strategies TOC_01-600_20160511, F&BI 605195 06-1023 mb 014F1401.D GC8
Units:	ug/L (ppb)	Operator:	JS
Compounds:	Concentration ug/L (ppb)		
Methane Ethane	<5 <10		

<10

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605195

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605188-05 (Duplicate) Reporting Sample Duplicate RPD Analyte Units Result Result (Limit 20) Benzene ug/L (ppb) <1 <1 nm Toluene ug/L (ppb) <1 <1 nm Ethylbenzene ug/L (ppb) <1 <1 nm Xylenes ug/L (ppb) <3 <3 nm Gasoline ug/L (ppb) <100 <100 nm

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Benzene	ug/L (ppb)	50	95	65-118		
Toluene	ug/L (ppb)	50	97	72-122		
Ethylbenzene	ug/L (ppb)	50	97	73-126		
Xylenes	ug/L (ppb)	150	96	74-118		
Gasoline	ug/L (ppb)	1,000	93	69-134		

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605195

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	106	108	61-133	2

### ENVIRONMENTAL CHEMISTS

### Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605195

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Cod	le: 605188-01 x	10 (Matri	x Spike)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron Manganese	ug/L (ppb) ug/L (ppb)	100 20	766 9,890	152 b 274 b	108 b 223 b	70-130 70-130	34 b 21 b

Laboratory Code: 605188-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	103	85-115
Manganese	ug/L (ppb)	20	106	85-115

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605195

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605195

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED GASSES USING METHOD RSK 175

Laboratory Code: 605344-03 (Duplicate)

5	Reporting	Sample	Duplicate	Relative Percent Difference
Analyte	Units	Result	Result	(Limit 20)
Methane	ug/L (ppb)	<5	<5	nm
Ethane	ug/L (ppb)	<10	<10	nm
Ethene	ug/L (ppb)	<10	<10	nm

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Methane	ug/L (ppb)	59	81	81	50-150	0
Ethane	ug/L (ppb)	110	75	74	50-150	1
Ethene	ug/L (ppb)	102	108	99	50-150	9

### ENVIRONMENTAL CHEMISTS

## **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

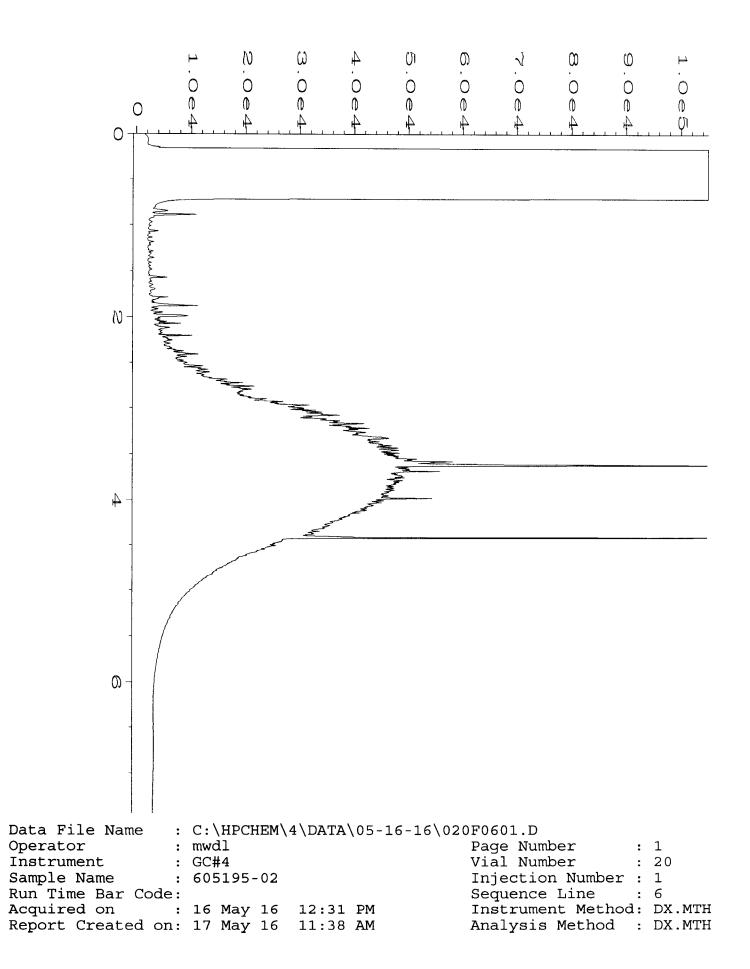
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

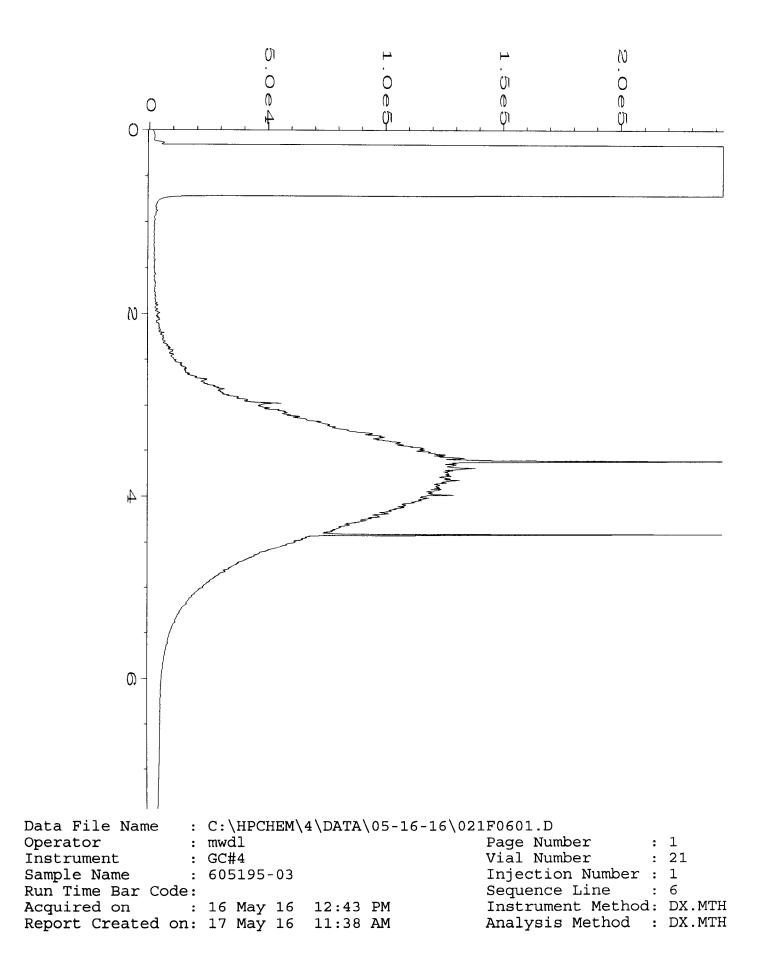
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

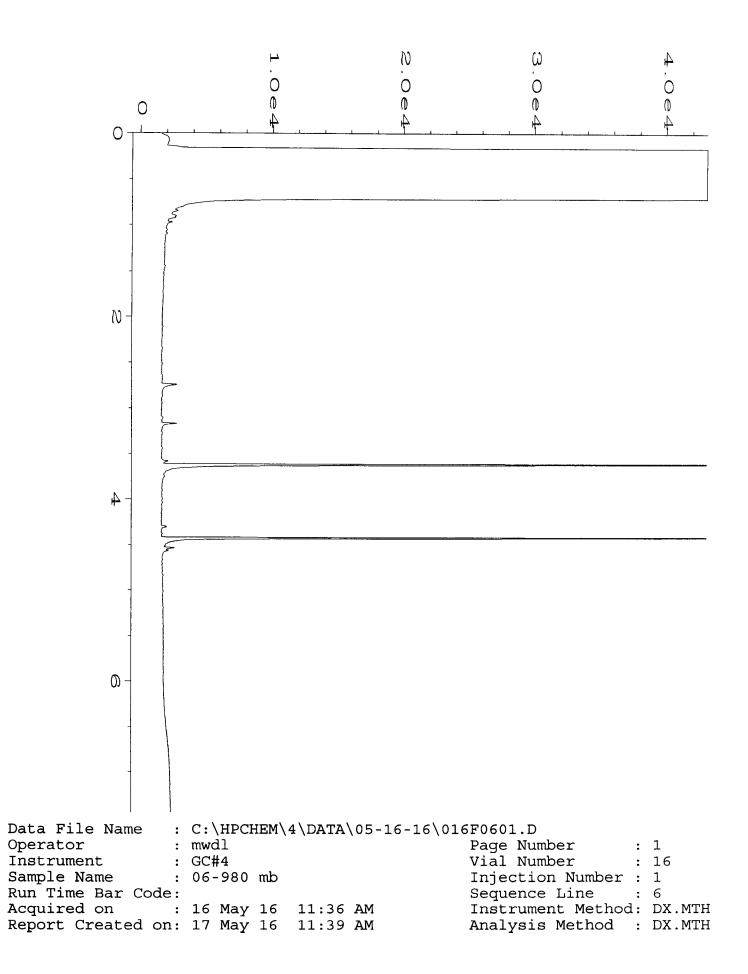
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

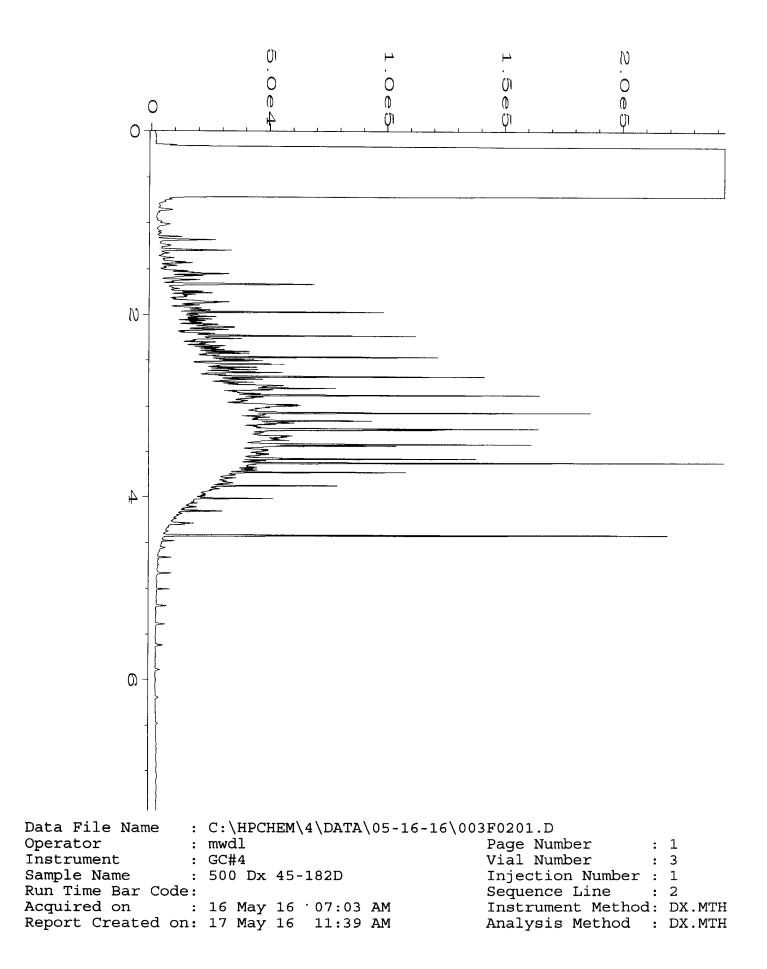
vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.











Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

May 19 2016 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 605195 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID T	TEST
01MW13-20160511	Soil	16-A008316 M	MET

Your sample was received on Thursday, May 12, 2016. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young Laboratory Manager

Project #: 605195 PO Number: D-964

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

### **ANALYSIS REPORT**

Date Received: 05/12/16 Date Reported: 5/19/16

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 605195 Project #: 605195 PO Number: D-964 All results reported on an as received basis.

AMTEST Identification Number	16-A008316
Client Identification	01MW13-20160511
Sampling Date	05/11/16, 09:00

### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	0.82	mg/l		0.01	SM 3500Fe D	MJ	05/12/16

aron W Aaron W. Young Laboratory Manager

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



### QC Summary for sample number: 16-A008316

### **MATRIX SPIKES**

SAMPLE # ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
16-A008248 Ferrous Iron	mg/l	4.25	9.31	5.00	101.20 %
16-A008248 Ferrous Iron	mg/l	4.25	9.33	5.00	101.60 %
MATRIX SPIKE DUPLICATES					
SAMPLE # ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE		RPD
Spike Ferrous Iron	mg/l	9.31	9.33		0.21
	_				
STANDARD REFERENCE MATERIAL	_S				
ANALYTE	UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Ferrous Iron	mg/l	0.50	0.46		92.0 %
BLANKS					
ANALYTE	UNITS	RESULT			
Ferrous Iron	mg/l	< 0.01			

## SUBCONTRACT SAMPLE CHAIN OF CUSTODY

				SUBCON'	TRACTER	A.						] _		Pag	e #	L	of [
Send Report <u>To</u> Michae	l Erdahl					An	₽ر•						1	TUF	NAF	OUND	rime d
CompanyFriedma	in and Bruya	, Inc.			NAME/NO	•				PO #			Standard (2 Weeks)				
Address3012 16	th Ave W			6	05195				D - 4	964			Rush			uthorize	
City, State, ZIP <u>Seattle</u> ,	WA 98119			REMARK	S									pose	after	E DISPO 30 days	
Phone #(206) 285-8282	Fax #(2	<u>06) 283-50</u> 4	44	P	lease Email	Res	ults						□ Ret □ Wil			les instruct	ions
									ANA	LYSES	REQU	JEST	red				
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Typ	# of containers	Total Fe	Hardness	Sulfate	Ferrow Iron Nitrate	Nitrite	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses		Notes
OIMW13-20160511		5/11/16	1305	water	1				X							S.	516
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Ph. (206) 285-8282	Relinquished l	oy:														,	
Fax (206) 283-5044	Received by:																

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## IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

#### 3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-66	PAGE 1				
REPORT DATE:	06/10/16					
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16			
FINAL REPORT, LABORATORY ANAL	YSIS OF SELECTED PARAMETE	RS ON WATER				
AMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605195						

#### CASE NARRATIVE

One water sample was received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on subsequent pages.

#### **SAMPLE DATA**

	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
SAMPLE ID	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
01MW13-20160511	448	9.29	0.32	0.022	0.483

	NITRATE	NITRITE	HARDNESS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)
01MW13-20160511	< 0.010	0.002	392



## IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-66	PAGE 2						
REPORT DATE:	06/10/16							
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16					
FINAL REPORT, LABORATORY ANAL	FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER							
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605195								

#### QA/QC DATA

QC PARAMETER	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
METHOD	SM18 2320B	SM184500SO4E	EPA 376.1	EPA 365.1	EPA 351.1
DATE ANALYZED	05/23/16	06/02/16	05/18/16	06/01/16	06/08/16
DETECTION LIMIT	1.00	1.00	0.05	0.002	0.200
DUPLICATE					
SAMPLE ID	BATCH	BATCH	BATCH	BATCH	BATCH
ORIGINAL	61.5	2.43	0.28	0.029	0.508
DUPLICATE	61.0	2.40	0.28	0.029	0.509
RPD	0.82%	1.27%	0.00%	2.01%	0.17%
SAMPLE ID		BATCH		ВАТСН	ВАТСН
ORIGINAL		2.43		0.029	0.508
SPIKED SAMPLE		2.43		0.029	2.46
SPIKED SAMPLE		12.4			2.46
~	NT 4		NT 4	0.050	
% RECOVERY	NA	100.08%	NA	107.56%	97.59%
QC CHECK					
FOUND	105	9.88		0.095	6.74
TRUE	100	10.0		0.094	6.70
% RECOVERY	105.00%	98.80%	NA	101.06%	100.60%
BLANK	NA	<1.00	< 0.05	< 0.002	< 0.200

RPD = RELATIVE PERCENT DIFFERENCE.

ND = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.



### **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-66	PAGE 3					
REPORT DATE:	06/10/16						
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16				
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER							
SAMPLES FROM FRIEDMAN & BRUY	SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605195						

#### QA/QC DATA

QC PARAMETER	NITRATE	NITRITE	HARDNESS
	(mg/L)	(mg/L)	(mgCaCO3/L)
METHOD	SM184500N03F	EPA 353.2	SM18 2340C
DATE ANALYZED	05/12/16	05/12/16	06/07/16
DETECTION LIMIT	0.010	0.002	2.00
DUPLICATE			
SAMPLE ID	BATCH	BATCH	BATCH
ORIGINAL	0.012	0.002	131
DUPLICATE	0.011	0.002	134
RPD	2.33%	0.00%	2.26%
SPIKE SAMPLE			
SAMPLE ID	BATCH	BATCH	
ORIGINAL	0.012	0.002	
SPIKED SAMPLE	0.209	0.041	
SPIKE ADDED	0.200	0.040	
% RECOVERY	98.66%	97.50%	NA
QC CHECK			
FOUND	0.405	0.040	39.5
TRUE	0.408	0.040	40.0
% RECOVERY	99.26%	100.00%	98.75%
BLANK	< 0.010	< 0.002	<2.00

RPD = RELATIVE PERCENT DIFFERENCE.

ND - NELATIVE FIRECENT DIFFERENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

#### SUBMITTED BY:

Mamien Hadomsh"

Damien Gadomski Project Manager

FB1014- <b>Bb</b> Send Report <u>To Michae</u>	el Erdahl			SUE	BCONT	RACTER	Asi	Res	end	<u>.</u>					Pag TU	ge # RNAI	1 ROUNE	of( TIME
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City, State, ZIP <u>Seattle, WA 98119</u> Phone # <u>(206) 285-8282</u> Fax # <u>(206) 283-5044</u>			REN	REMARKS SAMPLE Dispose after 3 Please Email Results Will call with i						30 day les	9							
		·····		1	·				 F	ANÃ	LYSE	SREG	UE	STED				
Sample ID	Lab ID	Date Sampled	Time Sampled	Samp	Іе Туре	# of containers	Total Fe	Hardness	Sulfate	Nitrate	Nitrite -	Alkalinity	01£.1_	TKN	Total Phosphorus	Dissolved Gasses		Notes
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605195	SAMPLE CHAIN OF CUSTODY	IE 05/11	116 1 12/
Send Report To_ <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (signure)		TURNAROUND TIME
Company SoundEarth Strategies, Inc.	PROJECT NAME/NO. TOC Holdings Co. Facility No. 01-600	PO # 01-600	RUSH Rush charges authorized by:
Address 2811 Fairview Ave E, Suite 2000	Seattle Terminal		
City, State, ZIP <u>Seattle, WA 98102</u>	<sup>1</sup> low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	Dispose after 30 days Return samples Will call with instructions

															ş			
Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardne and Alkalinity		TKN, Sulfide, and Fe 2+	Notes
12-20160511	12			5/11/16	1040	Gu	1				X							
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01mw90-20160511	01MW90		0335	5/11/16	1442	GW	4	X	X	$\mathcal{A}$					······			
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	Kenn Bartelt	SEC	SILIL	1620
Seattle, WA 98119-2029	Received by:	Nhan Phan	FEBT	Stille	1620
Ph. (206) 285-8282	Relinquished by:				/000
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605196

### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 8, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 11, 2016 from the TOC\_01-600\_20160511 WORFDB8, F&BI 605196 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0608R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 11, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160511 WORFDB8, F&BI 605196 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605196 -01	01MW42-20160511
605196 -02	01MW12-20160511
605196 -03	Q9-20160511

Sample 01MW42-20160511 was sent to Aquatic Research for sulfate analysis. Sample Q9-20160511 was sent to Aquatic Research for sulfate, nitrate, nitrite, total phosphorus, hardness, alkalinity, TKN, and sulfide analyses. In addition, sample Q9-20160511 was sent to Amtest for ferrous iron analysis. The reports are enclosed.

Several 8270D surrogates failed the laboratory acceptance criteria in sample Q9-20160511 and the method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605196 Date Extracted: 05/12/16 Date Analyzed: 05/12/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Sample ID Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW42-20160511 605196-01	<1	<1	<1	<3	<100	97
01MW12-20160511 605196-02	5.7	1.5	3.2	<3	210	95
Q9-20160511 605196-03	<1	<1	<1	<3	<100	96
Method Blank 06-943 MB	<1	<1	<1	<3	<100	96

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605196 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 47-140)
01MW42-20160511 605196-01	560 x	520 x	92
01MW12-20160511 605196-02	1,900 x	630 x	85
<b>Q9-20160511</b> 605196-03	960 x	360 x	87
Method Blank 06-980 MB	<50	<250	99

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Q9-20160511 05/11/16 05/23/16 05/24/16 Water	Client: Project: Lab ID: Data File: Instrument:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 605196-03 605196-03.124 ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron Manganese	1,870 1,550		

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	NA	Project:	TOC_01-600_20160511 WORFDB8
Date Extracted:	05/23/16	Lab ID:	I6-325 mb
Date Analyzed:	05/23/16	Data File:	I6-325 mb.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron Manganese	<50 <1		

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Q9-20160511 05/11/16 05/17/16 05/18/16 Water ug/L (ppb)	L	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 605196-03 051810.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophene	ol	% Recovery: 65 43 vo 153 vo	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds: Pentachlorophenol		Concentration ug/L (ppb) <0.2		

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicable 05/17/16 05/18/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 06-982 mb 051806.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophene	% Recovery: 53 33 vo	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds: Pentachlorophenol	Concentration ug/L (ppb) <0.2		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605196

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605188-05 (Duplicate)

0	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Benzene	ug/L (ppb)	50	95	65-118		
Toluene	ug/L (ppb)	50	97	72-122		
Ethylbenzene	ug/L (ppb)	50	97	73-126		
Xylenes	ug/L (ppb)	150	96	74-118		
Gasoline	ug/L (ppb)	1,000	93	69-134		

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605196

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	106	108	61-133	2

### ENVIRONMENTAL CHEMISTS

### Date of Report: 06/08/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605196

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron	ug/L (ppb)	100	766	152 b	108 b	70-130	34 b
Manganese	ug/L (ppb)	20	9,890	274 b	223 b	70-130	21 b

Laboratory Code: 605188-01 x10 (Matrix Spike)

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Iron	ug/L (ppb)	100	103	85-115		
Manganese	ug/L (ppb)	20	106	85-115		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/08/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605196

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

5 5	Reporting	Spike	Percent Recovery	Percent Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

#### ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

 ${\rm J}$  - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

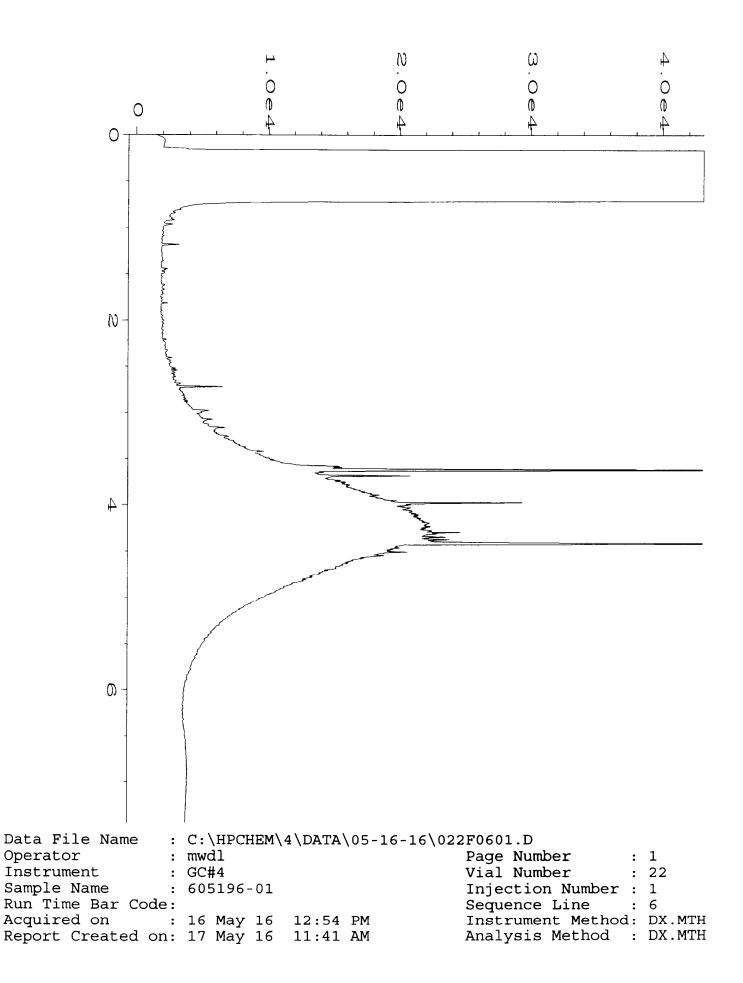
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

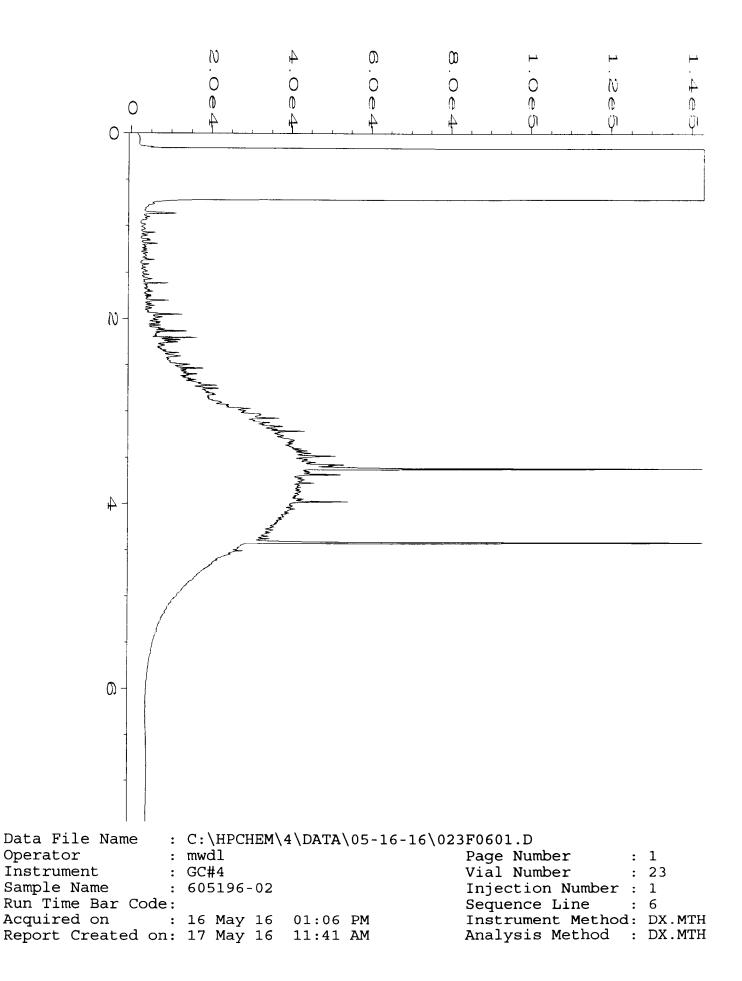
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

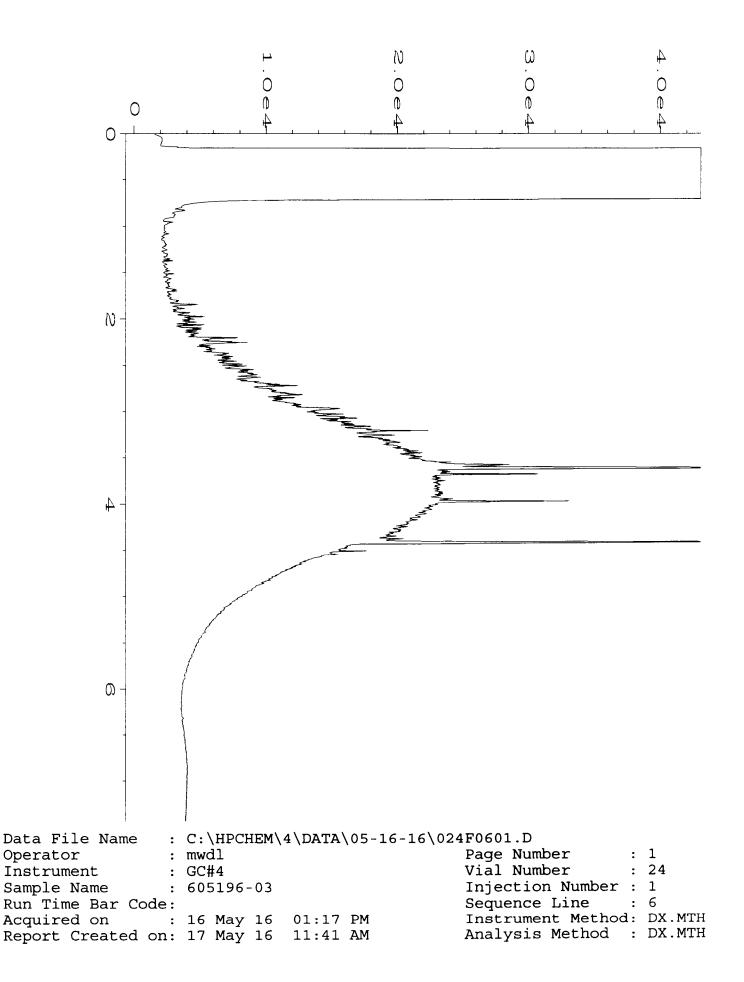
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

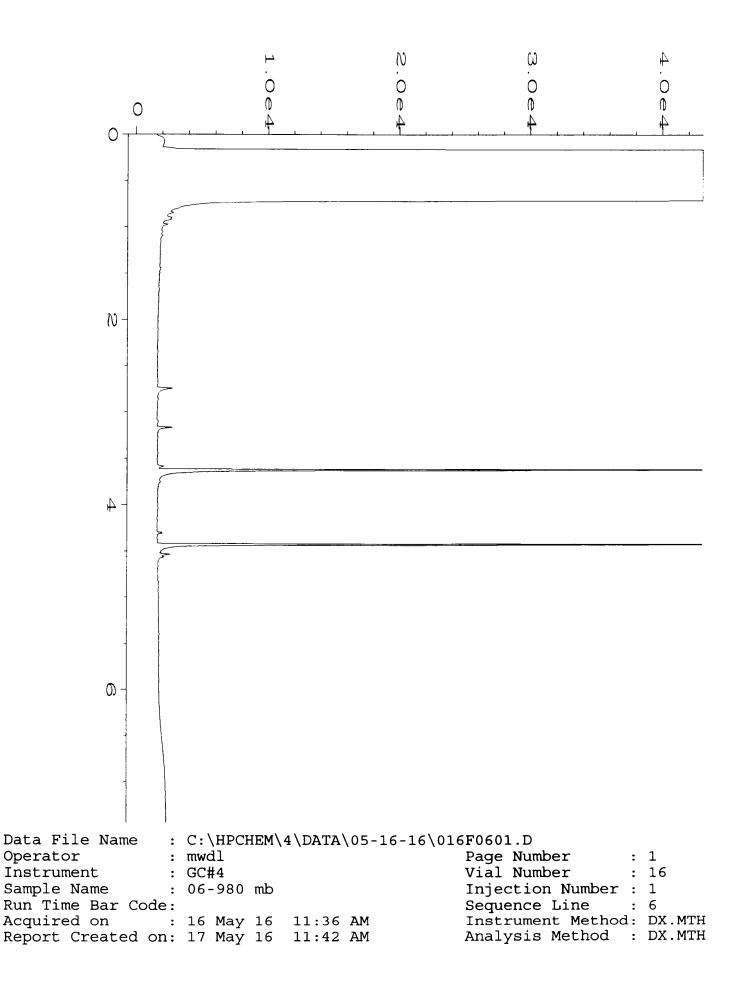
vo - The value reported fell outside the control limits established for this analyte.

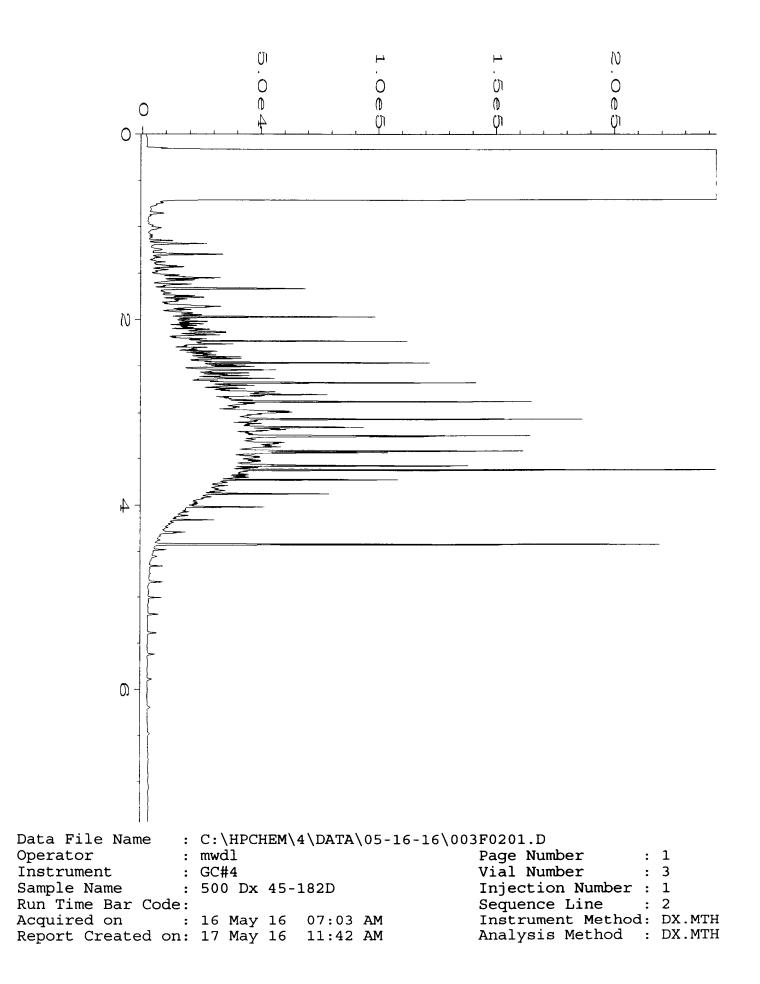
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.













Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

May 19 2016 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 605196 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
Q9-20160511	Soil	16-A008317	MET

Your sample was received on Thursday, May 12, 2016. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young Laboratory Manager

Project #: 605196 PO Number: D-964

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

#### **ANALYSIS REPORT**

Date Received: 05/12/16 Date Reported: 5/19/16

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 605196 Project #: 605196 PO Number: D-964 All results reported on an as received basis.

AMTEST Identification Number	16-A008317
Client Identification	Q9-20160511
Sampling Date	05/11/16, 13:05

#### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	1.39	mg/l		0.01	SM 3500Fe D	MJ	05/12/16

aron W Aaron W. Young Laboratory Manager

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



#### QC Summary for sample number: 16-A008317

#### **MATRIX SPIKES**

SAMPLE # ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
16-A008248 Ferrous Iron	mg/l	4.25	9.31	5.00	101.20 %
16-A008248 Ferrous Iron	mg/l	4.25	9.33	5.00	101.60 %
MATRIX SPIKE DUPLICATES					
SAMPLE # ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE		RPD
Spike Ferrous Iron	mg/l	9.31	9.33		0.21
STANDARD REFERENCE MATERIA	ALS				
ANALYTE	UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Ferrous Iron	mg/l	0.50	0.46		92.0 %
BLANKS					
ANALYTE	UNITS	RESULT			
Ferrous Iron	mg/l	< 0.01			

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Send Report <u>To Michae</u>	el Erdahl			SUBCO	NTRAC	TER	Ant	est					[	Pag TUF	e # RNAF	L ROUND T	.f	]
CompanyFriedm	an and B			6			PROJECT NAME/NO. PO # * 605196 D-964				Standard (2 Weeks)  RUSH Rush charges authorized by:							
Address	<u>6th Ave W</u>	<u>.</u>						]	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- 10	L						•	
City, State, ZIP <u>Seattle</u>	, WA 981	19		REMAR	KS Please	Email	Recui	to							after	E DISPOS 30 days	SAL	
Phone # <u>(206) 285-8282</u>	Fax #_	(206) 283-	5044						,,	<u></u>						instructi	ons	]
·									ANAL	YSES	SREG	UES	TED					]
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	НЧЛ	Nitrate	Sulfate	. Alkalinity	TOC-9060M	Ferrestar			N	Notes	
01MWB-20160511		5/11/2	1305	Inter	1								X			Shi	1.7	1
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Friedman & Bruya, Inc.	ſ	CIONA	הוכון זוי	<u> </u>								001						14.2
3012 16th Avenue West	Relinquis	SIGNA Red by	TURE	M	ichael F		JT NA	ME			Fried		PAN and B			DATE /11/16	TIME 08:/04#	_
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Ph. (206) 285-8282	Relinquisl	r \	<u> </u>		<u>·                                     </u>			KUA	¥							11-116	102.	-
Fax (206) 283-5044	Received h	by:												· · · ,				-
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### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

#### 3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-64	PA	GE 1					
REPORT DATE:	06/07/16							
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16					
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER								
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605196								

#### CASE NARRATIVE

Two water samples were received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
SAMPLE ID	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
01MW42-20160511		32.5			
Q9-20160511	227	2.43	0.36	0.299	0.475

	NITRATE	NITRITE	HARDNESS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)
Q9-20160511	0.027	0.003	196



### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-64		PAGE 2				
REPORT DATE:	06/07/16						
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16				
FINAL REPORT, LABORATORY ANAI	LYSIS OF SELECTED PARAMETH	ERS ON WATER					
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605196							

#### QA/QC DATA

ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
SM18 2320B	SM184500SO4E	EPA 376.1	EPA 365.1	EPA 351.1
05/23/16	06/02/16	05/18/16	06/01/16	05/19/16
1.00	1.00	0.05	0.002	0.200
BATCH	Q9-20160511	BATCH	BATCH	BATCH
61.5	2.43	0.28	0.029	0.542
61.0	2.40	0.28	0.029	0.546
0.82%	1.27%	0.00%	2.01%	0.70%
	Q9-20160511		BATCH	BATCH
	2.43		0.029	0.542
	12.4		0.083	2.83
	10.0		0.050	2.00
NA	100.08%	NA	107.56%	114.25%
105	9.88		0.095	6.17
100	10.0		0.094	6.70
105.00%	98.80%	NA	101.06%	92.09%
NA	<1.00	< 0.05	< 0.002	< 0.200
	(mgCaCO3/l) SM18 2320B 05/23/16 1.00 BATCH 61.5 61.0 0.82% NA 105 100 105.00%	(mgCaCO3/l)         (mg/L)           SM18 2320B         SM184500SO4E           05/23/16         06/02/16           1.00         1.00           BATCH         Q9-20160511           61.5         2.43           61.0         2.40           0.82%         1.27%           Q9-20160511         2.43           1.27%         10.0           NA         100.08%           100         100.08%	Image: Constraint of the second sec	Image (mgCaCO3/l)         (mg/L)         (mg/L)         (mg/L)           SM18 2320B         SM184500SO4E         EPA 376.1         EPA 365.1           05/23/16         06/02/16         05/18/16         06/01/16           1.00         1.00         0.05         0.002           BATCH         Q9-20160511         BATCH         BATCH           61.5         2.43         0.28         0.029           61.0         2.40         0.28         0.029           0.82%         1.27%         0.00%         2.01%           Q9-20160511           2.43         0.029           0.82%         1.27%         0.00%         2.01%           10.0         0.050         0.050         0.050           NA         100.08%         NA         107.56%           105         9.88         0.095         0.094           105.00%         98.80%         NA         101.06%

RPD = RELATIVE PERCENT DIFFERENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.



#### **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-64	PA	AGE 3					
REPORT DATE:	06/07/16							
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16					
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER								
SAMPLES FROM FRIEDMAN & BRUYA	SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605196							

#### QA/QC DATA

QC PARAMETER	NITRATE	NITRITE	HARDNESS
	(mg/L)	(mg/L)	(mgCaCO3/L)
METHOD	SM184500N03F	EPA 353.2	SM18 2340C
DATE ANALYZED	05/12/16	05/12/16	06/07/16
DETECTION LIMIT	0.010	0.002	2.00
DUPLICATE			
SAMPLE ID	BATCH	BATCH	BATCH
ORIGINAL	0.012	0.002	131
DUPLICATE	0.011	0.002	134
RPD	2.33%	0.00%	2.26%
SPIKE SAMPLE			
SAMPLE ID	BATCH	BATCH	
ORIGINAL	0.012	0.002	
SPIKED SAMPLE	0.209	0.041	
SPIKE ADDED	0.200	0.040	
% RECOVERY	98.66%	97.50%	NA
QC CHECK			
FOUND	0.405	0.040	39.5
TRUE	0.408	0.040	40.0
% RECOVERY	99.26%	100.00%	98.75%
	·		
BLANK	< 0.010	< 0.002	<2.00

RPD = RELATIVE PERCENT DIFFERENCE.

ND - NELATIVE FIRENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

#### SUBMITTED BY:

Mamien Hadomsh"

Damien Gadomski Project Manager

FB1014-1	64	SU	BCONTI	RACT SA	MPLE CH	IAI	N (	<b>DF</b>	CUSI	rody	r ·					<b>.</b> .	
Send Report <u>To Michae</u>	·			SUBCON	TRACTER	Aq	. R.	المحدد	rch			7,					
	an and Bruy:	a. Inc.			T NAME/NC					PO #		TURNAROUND TIME					
	th Ave W				605196 D-9				-974	<b>RUSH</b> <b>Rush charges authorized by</b>			ed by:				
City, State, ZIPSeattle, WA_98119			REMAR	(S								SAMPLE DISPOSAL					
Phone #(206) 285-8282Fax #(206) 283-5044			]	Please Email Results						<ul> <li>Dispose after 30 days</li> <li>Return samples</li> <li>Will call with instructions</li> </ul>							
				1			<b>r</b>		AŇ	ALYSE	S REQ	UES'	TED		·		
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Tyr	e # of containers	Total Fe	Hardness	Sulfate	Nitrate	Nitrite	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses		Notes
01MW42-62016 2016051	2.	5/11/16	1204	water	1			×									<u> </u>
99-20160511	4	<b>↓ ↓</b>	1415	4	4		X	X	×	×	×	×	×	×			
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Send Report To Brown, cc: Jessica Brown, Courtney Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLE CHAIN OF CUSTODY	ME 05/11/	Page # V2/12 TURNAROUND TIME
CompanySoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	Kistandard (2 Weeks)
Address_ 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS Reaper 3A& 5/13/1	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

\_\_\_\_\_ --- ---

AFE:

Sample ID	Sampl <del>e</del> Location	Sample Depth	Lab 1D	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinitv	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Note
01MW42-20160511	01MW42		0/8	5/11/16	1204	HZO	5	$\times$	$\boldsymbol{\times}$	×			X					
01MW12-20160511	OIMW12		62 AS	5/0/16	1255	HZO	4	×	×	$\bigotimes$								
Q9-20160511	Qq	·	02 AS 03 ~ K	5/11/16	1415	HZO	11	X	×	$\times$	$\boldsymbol{\times}$		X		X	×	$\times$	
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	JONATHON LOEFFLER	SOUNDEARTH	5/41/16	1620
Seattle, WA 98119-2029	Received by: MAA	T Mhan Phan	FEBT	5/11/16	1620
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:		Samples receive	ed at <u>4</u> •c	

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Friedman & Bruya, Inc. #605197

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 14, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 11, 2016 from the TOC\_01-600\_20160511 WORFDB8, F&BI 605197 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0614R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 11, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies 01-600 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SoundEarth Strategies</u>
605197 -01	O6-20160511
605197 -02	N7-20160511
605197 -03	M5-20160511
605197 -04	G10-20160511

Sample G10-20160511 was sent to Aquatic Research for sulfate analysis. Samples N7-20160511 and M5-20160511 were sent to Aquatic Research for sulfate, nitrate, nitrite, total phosphorus, hardness, alkalinity, TKN, and sulfide analyses. In addition, samples N7-20160511 and M5-20160511 were sent to Amtest for ferrous iron analysis. The reports are enclosed.

Phenol-d6 failed the laboratory acceptance criteria in the pentachlorophenol samples and the associated method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605197 Date Extracted: 05/12/16 Date Analyzed: 05/12/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
N7-20160511 605197-02	<1	<1	<1	<3	<100	98
M5-20160511 605197-03	<1	<1	<1	<3	<100	97
G10-20160511 605197-04	<1	<1	2.0	<3	<100	97
Method Blank 06-943 MB	<1	<1	<1	<3	<100	96

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605197 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 47-140)
N7-20160511 605197-02	200 x	<250	91
M5-20160511 605197-03	220 x	<250	107
G10-20160511 605197-04	2,000 x	560 x	89
Method Blank 06-980 MB	<50	<250	99

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	N7-20160511	Client:	SoundEarth Strategies
Date Received:	05/11/16	Project:	TOC_01-600_20160511 WORFDB8
Date Extracted:	05/23/16	Lab ID:	605197-02
Date Analyzed:	05/24/16	Data File:	605197-02.125
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	238		
Manganese	364		

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	M5-20160511	Client:	SoundEarth Strategies
Date Received:	05/11/16	Project:	TOC_01-600_20160511 WORFDB8
Date Extracted:	05/23/16	Lab ID:	605197-03 x10
Date Analyzed:	05/25/16	Data File:	605197-03 x10.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	10,500		
Manganese	295		

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	NA	Project:	TOC_01-600_20160511 WORFDB8
Date Extracted:	05/23/16	Lab ID:	I6-325 mb
Date Analyzed:	05/23/16	Data File:	I6-325 mb.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	<50		
Manganese	<1		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	O6-2016051 05/11/16 05/17/16 05/18/16 Water ug/L (ppb)	1	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 605197-01 051811.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 56 41 vo 139	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	N7-2016051 05/11/16 05/17/16 05/18/16 Water ug/L (ppb)	1	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 605197-02 051812.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 63 38 vo 136	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	M5-2016051 05/11/16 05/17/16 05/18/16 Water ug/L (ppb)	1	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 605197-03 051813.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 62 38 vo 127	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		1.7		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	G10-2016051 05/11/16 05/17/16 05/18/16 Water ug/L (ppb)	1	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 605197-04 051814.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 56 41 vo 134	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicable 05/17/16 05/18/16 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth 5 TOC_01-600_ 06-982 mb 051806.D GCMS10 VM	Strategies 20160511 WORFDB8
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen		Recovery: 53 33 vo 79	Lower Limit: 50 50 50	Li	pper imit: 150 150 150
Compounds:		centration g/L (ppb)			
Pentachlorophenol		< 0.2			

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	N7-20160511	Client:	SoundEarth Strategies
Date Received:	05/11/16	Project:	TOC_01-600_20160511 WORFDB8
Date Extracted:	05/23/16	Lab ID:	605197-02
Date Analyzed:	05/23/16	Data File:	022F2201.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	83		
Ethane	<10		

<10

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	M5-20160511	Client:	SoundEarth Strategies
Date Received:	05/11/16	Project:	TOC_01-600_20160511 WORFDB8
Date Extracted:	05/23/16	Lab ID:	605197-03
Date Analyzed:	05/23/16	Data File:	023F2301.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	18		
Ethane	<10		

<10

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID: Date Received: Date Extracted:	Method Blank NA 05/23/16 05/20/10	Client: Project: Lab ID:	SoundEarth Strategies TOC_01-600_20160511 WORFDB8 06-1023 mb
Date Analyzed:	05/23/16	Data File:	014F1401.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
Compounds:	Concentration ug/L (ppb)		
Methane	<5		
Ethane	<10		

<10

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605197

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605188-05 (Duplicate) Reporting Sample Duplicate RPD Analyte Units Result Result (Limit 20) Benzene ug/L (ppb) <1 <1 nm Toluene ug/L (ppb) <1 <1 nm Ethylbenzene ug/L (ppb) <1 <1 nm Xylenes ug/L (ppb) <3 <3 nm Gasoline ug/L (ppb) <100 <100 nm

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Benzene	ug/L (ppb)	50	95	65-118		
Toluene	ug/L (ppb)	50	97	72-122		
Ethylbenzene	ug/L (ppb)	50	97	73-126		
Xylenes	ug/L (ppb)	150	96	74-118		
Gasoline	ug/L (ppb)	1,000	93	69-134		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605197

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	106	108	61-133	2

#### ENVIRONMENTAL CHEMISTS

#### Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605197

#### **QUALITY ASSURANCE RESULTS** FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 605188-01 x10 (Matrix Spike)									
				Percent	Percent				
	Reporting	Spike	Sample	<b>Recovery</b>	Recovery	Acceptance	RPD		
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)		
Iron	ug/L (ppb)	100	766	152 b	108 b	70-130	34 b		
Manganese	ug/L (ppb)	20	9,890	274 b	223 b	70-130	21 b		

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	103	85-115
Manganese	ug/L (ppb)	20	106	85-115

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605197

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

5	Reporting	Spike	Percent Recoverv	Percent Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/11/16 Project: TOC\_01-600\_20160511 WORFDB8, F&BI 605197

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED GASSES USING METHOD RSK 175

Laboratory Code: 605344-03 (Duplicate)

5	Reporting	Sample	Duplicate	Relative Percent Differ ence
Analyte	Units	Result	Result	(Limit 20)
Methane	ug/L (ppb)	<5	<5	nm
Ethane	ug/L (ppb)	<10	<10	nm
Ethene	ug/L (ppb)	<10	<10	nm

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Methane	ug/L (ppb)	59	81	81	50-150	0
Ethane	ug/L (ppb)	110	75	74	50-150	1
Ethene	ug/L (ppb)	102	108	99	50-150	9

#### ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

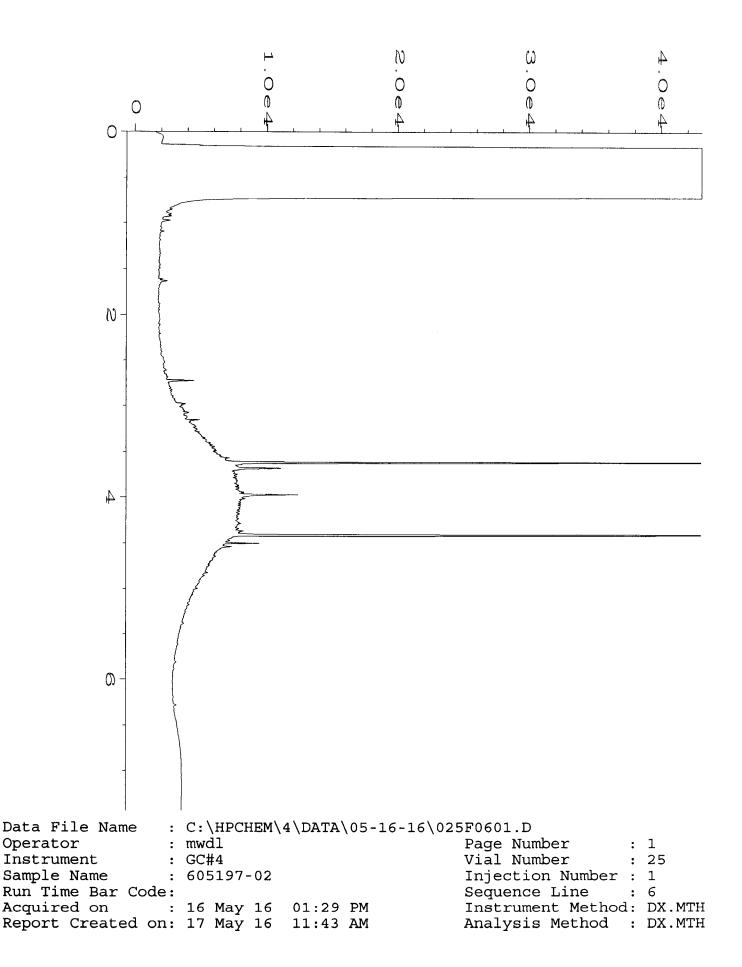
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

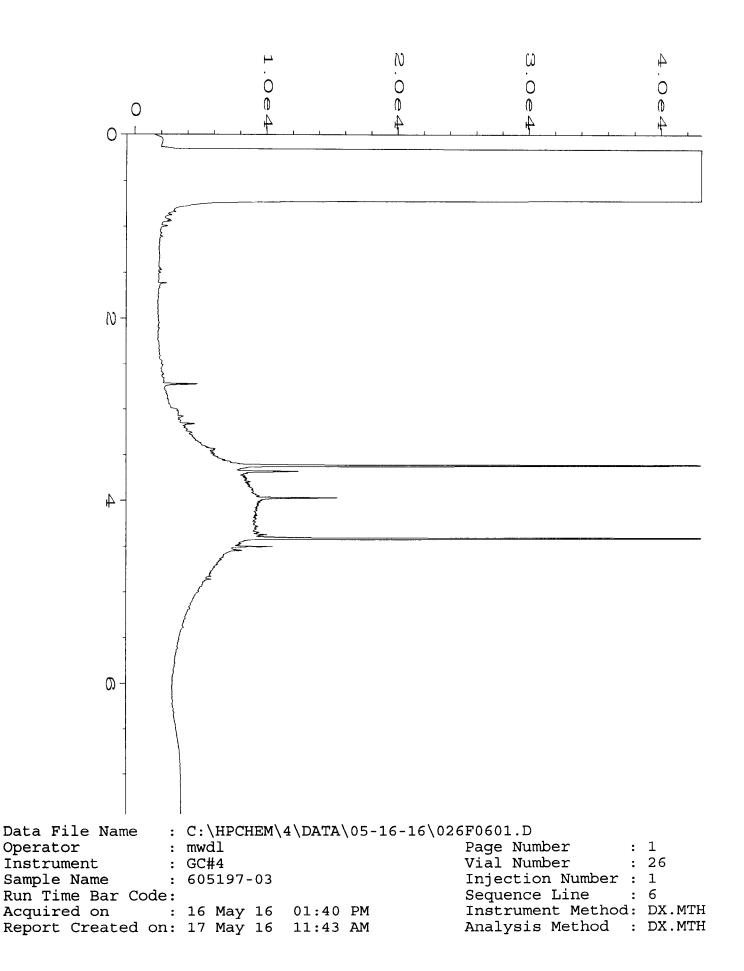
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

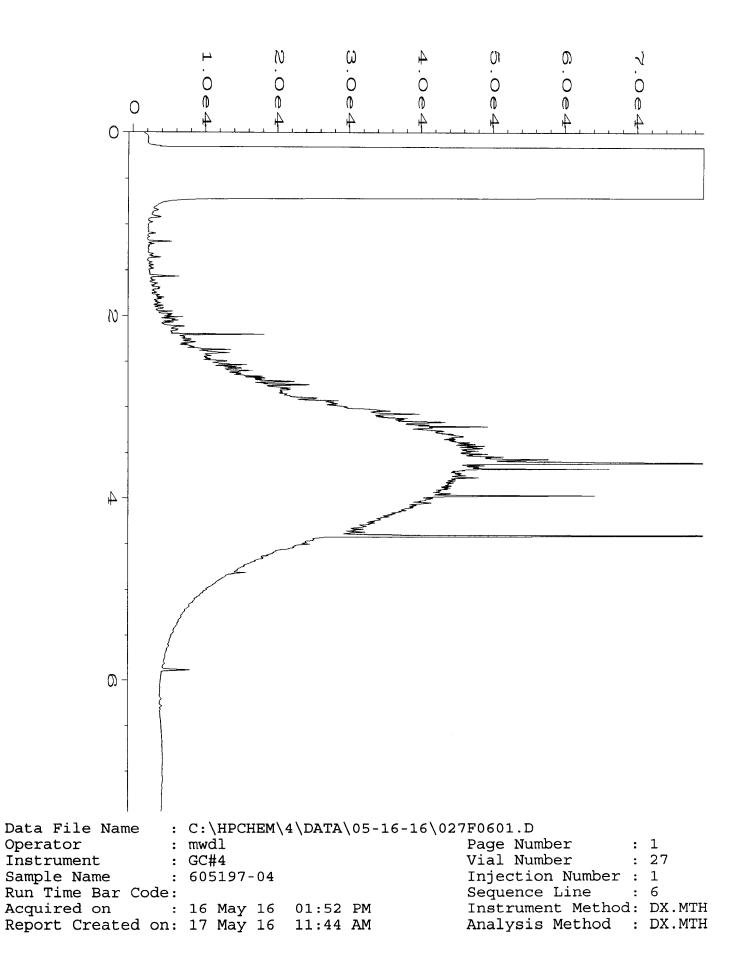
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

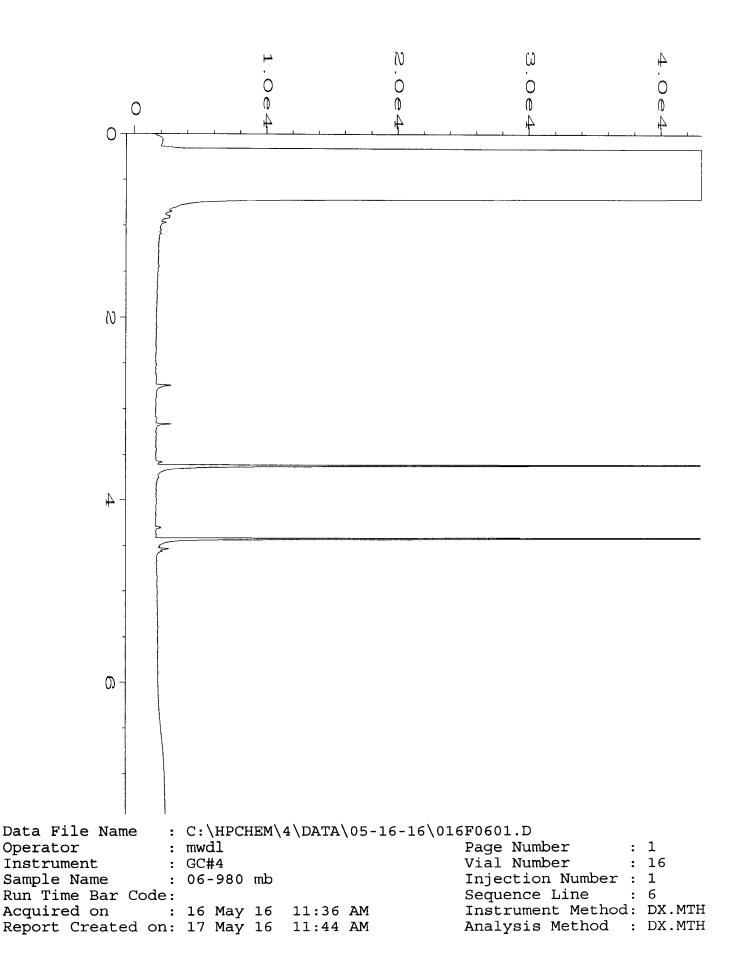
vo - The value reported fell outside the control limits established for this analyte.

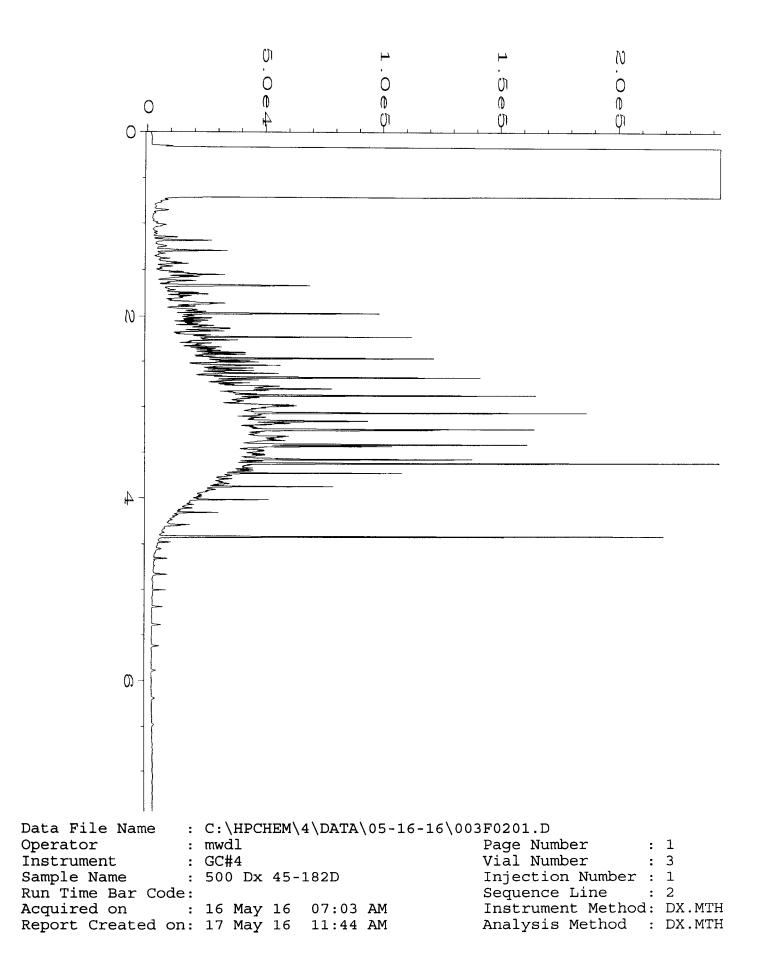
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.













Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

May 19 2016 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 605197 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
N7-20160511	Soil	16-A008318	MET
M5-20160511	Soil	16-A008319	MET

Your samples were received on Thursday, May 12, 2016. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young Laboratory Manager

Project #: 605197 PO Number: D-964

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

#### **ANALYSIS REPORT**

Date Received: 05/12/16 Date Reported: 5/19/16

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 605197 Project #: 605197 PO Number: D-964 All results reported on an as received basis.

AMTEST Identification Number	16-A008318
Client Identification	N7-20160511
Sampling Date	05/11/16, 10:53

#### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	< 0.01	mg/l		0.01	SM 3500Fe D	MJ	05/12/16

AMTEST Identification Number	16-A008319
Client Identification	M5-20160511
Sampling Date	05/11/16, 13:41

#### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	2.93	mg/l		0.01	SM 3500Fe D	MJ	05/12/16

WV aron Aaron W. Young Laboratory Manager

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



#### QC Summary for sample numbers: 16-A008318 to 16-A008319

#### **MATRIX SPIKES**

		1	1	1		
SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
16-A008248	Ferrous Iron	mg/l	4.25	9.31	5.00	101.20 %
16-A008248	Ferrous Iron	mg/l	4.25	9.33	5.00	101.60 %
	PIKE DUPLICATES					
						חחח
SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE		RPD
Spike	Ferrous Iron	mg/l	9.31	9.33		0.21
-						
STANDARD	D REFERENCE MATERIAL	.S				
ANALYTE		UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Ferrous Iron		mg/l	0.50	0.46		92.0 %
BLANKS						
ANALYTE		UNITS	RESULT			
Ferrous Iron		mg/l	< 0.01			

# SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report <u>To Michael</u>	l Erdahl			SUBCONT PROJECT		-	teg	<del>.</del>		<u></u>		] [			NAF	ROUND	of 1 TIME C
CompanyFriedma	an and Bruya	<u>, Inc.</u>		PROJECT	NAME/NO	•			PO # Standard (2 Weeks)								
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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	Total Fe	Hardness	Sulfate	Nitrate	Ferrers Iron Nitmite	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses		Notes
N7-20160511		5/11/16	1053	water						¥						9531	2
M5-20160511		5/11/14	(341	water.						r						1	9
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Friedman & Bruya, Inc.		SIGNATU	JRE		PRIN	ΤN	AMI	£			CON			l		DATE	TIME
3012 16th Avenue West	Relinquisher	2 Cc	$\nu_{\perp}$	Mich	ael Erdahl					Fried	lman	& B	ruya		5/	12/4	0758
Seattle, WA 98119-2029	Received by:	Ph		T-2	22	Pel	dE.	$\mathcal{C}$							S		1165
Ph. (206) 285-8282	Relinquished b	y:				1		<u>`.</u>				·			- Corry	<u> </u>	
Fax (206) 283-5044	Received by:				······									· · · · · ·	1		

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### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

#### 3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-65	PA	GE 1
REPORT DATE:	06/07/16		
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16
FINAL REPORT, LABORATORY ANAL	YSIS OF SELECTED PARAMETE	RS ON WATER	
SAMPLES FROM FRIEDMAN & BRUY	A, INC. / PROJECT NO. 605197		

#### CASE NARRATIVE

Three water samples were received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
SAMPLE ID	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
N7-20160511	115	19.8	< 0.05	0.067	0.436
M5-20160511	56.5	46.9	0.24	0.234	0.542
G10-20160511		128			

	NITRATE	NITRITE	HARDNESS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)
N7-20160511	0.018	0.002	104
M5-20160511	0.012	0.002	78.4



### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-65		PAGE 2				
REPORT DATE:	06/07/16						
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16				
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER							
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605197							

#### QA/QC DATA

ALKALINITY (mgCaCO3/l) SM18 2320B	SULFATE (mg/L)	SULFIDE (mg/L)	TOTAL-P	TKN
	(mg/L)	(ma/I)	<i>(</i> <b>( ) )</b>	
SM18 2320B		(IIIg/L)	(mg/L)	(mg/L)
	SM184500SO4E	EPA 376.1	EPA 365.1	EPA 351.1
05/23/16	06/02/16	05/18/16	06/01/16	05/19/16
1.00	1.00	0.05	0.002	0.200
BATCH	BATCH	BATCH	BATCH	M5-20160511
61.5	2.43	0.28	0.029	0.542
61.0	2.40	0.28	0.029	0.546
0.82%	1.27%	0.00%	2.01%	0.70%
	BATCH		BATCH	M5-20160511
	2.43		0.029	0.542
	12.4		0.083	2.83
	10.0		0.050	2.00
NA	100.08%	NA	107.56%	114.25%
105	9.88		0.095	6.17
100	10.0		0.094	6.70
105.00%	98.80%	NA	101.06%	92.09%
NA	<1.00	< 0.05	< 0.002	< 0.200
	BATCH 61.5 61.0 0.82% NA 105 100 105.00%	BATCH         BATCH           61.5         2.43           61.0         2.40           0.82%         1.27%           BATCH         2.43           1.27%         1.27%           BATCH         2.43           1.24         10.0           NA         100.08%           105         9.88           100         10.0           105.00%         98.80%	BATCH         BATCH         BATCH           61.5         2.43         0.28           61.0         2.40         0.28           0.82%         1.27%         0.00%           BATCH           2.43         1.27%           0.82%         1.27%         0.00%           Image: Second Sec	BATCH         BATCH         BATCH         BATCH         BATCH           61.5         2.43         0.28         0.029           61.0         2.40         0.28         0.029           0.82%         1.27%         0.00%         2.01%           BATCH           2.43         0.00%         2.01%           0.82%         1.27%         0.00%         2.01%           0.82%         1.27%         0.00%         2.01%           0.029         0.00%         2.01%         0.029           0.82%         1.27%         0.00%         2.01%           10.4         2.43         0.029         0.029           12.4         0.083         0.050           10.0         100.08%         NA         107.56%           100         10.0         0.094           105.00%         98.80%         NA         101.06%

RPD = RELATIVE PERCENT DIFFERENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.



#### **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-65	PA	AGE 3				
REPORT DATE:	06/07/16						
DATE SAMPLED:	05/11/16	DATE RECEIVED:	05/12/16				
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER							
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605197							

#### QA/QC DATA

QC PARAMETER	NITRATE	NITRITE	HARDNESS	
	(mg/L)	(mg/L)	(mgCaCO3/L)	
METHOD	SM184500N03F	EPA 353.2	SM18 2340C	
DATE ANALYZED	05/12/16	05/12/16	06/07/16	
DETECTION LIMIT	0.010	0.002	2.00	
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.012	0.002	131	
DUPLICATE	0.011	0.002	134	
RPD	2.33%	0.00%	2.26%	
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH		
ORIGINAL	0.012	0.002		
SPIKED SAMPLE	0.209	0.041		
SPIKE ADDED	0.200	0.040		
% RECOVERY	98.66%	97.50%	NA	
QC CHECK				
FOUND	0.405	0.040	39.5	
TRUE	0.408	0.040	40.0	
% RECOVERY	99.26%	100.00%	98.75%	
BLANK	< 0.010	< 0.002	<2.00	

RPD = RELATIVE PERCENT DIFFERENCE.

ND - NELATIVE FIRENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

#### SUBMITTED BY:

Mamien Hadomsh"

Damien Gadomski Project Manager

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605197

Send Report To<u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr

Company\_\_\_\_SoundEarth Strategies, Inc.\_\_

Address 2811 Fairview Ave E, Suite 2000

City, State, ZIP\_\_\_Seattle, WA 98102\_\_

	SAMPLE CHAIN OF CUSTODY ME	05/11/16	U2/ATAI
<u>wn, Courtney</u>	SAMPLERS (signature)		Page #U
	PROJECT NAME/NO.	PO #	Standard (2 Weeks)
	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	RUSH Rush charges authorized by:
	REMARKS 1 low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

.

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (Iow-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity		TKN, Sulfide, and Fe 2+	Notes
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Seattle, WA 98119-2029	Received by: M M M	Nhan Chan	FEBT	5/11/16	IRID
Ph. (206) 285-8282	Relinquished by:		10-		100-
Fax (206) 283-5044	Received by:				
10x (200) 285-3044	Received by:		Samples receiv	4	

Friedman & Bruya, Inc. #605225 and amended

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 14, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 12, 2016 from the TOC\_01-600\_20160512 WORFDB8, F&BI 605225 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0614R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 12, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160512 WORFDB8, F&BI 605225 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SoundEarth Strategies</u>
605225 -01	01MW67-20160512
605225 -02	01MW66-20160512
605225 -03	A6-20160512
605225 -04	01MW07-20160512

Samples 01MW66-20160512 and 01MW07-20160512 were sent to Aquatic Research for sulfate, nitrate, nitrite, total phosphorus, hardness, alkalinity, TKN, and sulfide analyses. In addition, the samples were sent to Amtest for ferrous iron analysis. The reports are enclosed.

The NWTPH-Dx surrogate of sample 01MW67-20160512 failed below the acceptance criteria. The results are flagged accordingly.

Phenol-d6 failed the laboratory acceptance criteria in samples 01MW66-20160512, A6-20160512 and the associated method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225 Date Extracted: 05/13/16 Date Analyzed: 05/13/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 50-150)
01MW67-20160512 605225-01	2 <1	<1	<1	<3	<100	77
01MW66-20160512 605225-02	2 <1	<1	<1	<3	<100	81
01MW07-20160512 605225-04	2 <1	2.5	<1	<3	<100	81
Method Blank 06-945 MB	<1	<1	<1	<3	<100	97

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW67-20160512 605225-01	<50	<250	33 vo
01MW66-20160512 605225-02	270 x	<250	109
01MW07-20160512 605225-04	180 x	<250	102
Method Blank 06-981 MB	<50	<250	104

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Manganese

Client ID:	01MW66-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-02
Date Analyzed:	05/24/16	Data File:	605225-02.127
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	157		

1,510

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	01MW07-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-04
Date Analyzed:	05/24/16	Data File:	605225-04.128
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	1,140		
Manganese	693		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID: Date Received: Date Extracted: Date Analyzed	Method Blank NA 05/23/16 05/22/16	Client: Project: Lab ID: Data Film	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 I6-325 mb
Date Analyzed:	05/23/16	Data File:	I6-325 mb.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	<50		
Manganese	<1		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW67-20 05/12/16 05/17/16 05/18/16 Water ug/L (ppb)	160512	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-01 051815.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 67 53 128	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW66-20 05/12/16 05/17/16 05/18/16 Water ug/L (ppb)	160512	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-02 051816.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 58 46 vo 133	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds: Pentachlorophenol		Concentration ug/L (ppb) 0.54		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	A6-2016051 05/12/16 05/17/16 05/20/16 Water ug/L (ppb)	2	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-03 052017.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 76 46 vo 109	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW07-20160512 05/12/16 05/17/16 05/20/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-04 1/10 052018.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Reco 59 39	d 50 d 50	Upper Limit: 150 150 150
Compounds: Pentachlorophenol	Concen ug/L 18		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicabl 05/17/16 05/18/16 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 06-982 mb 051806.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen		% Recovery: 53 33 vo 79	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:	(	Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	01MW66-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-02
Date Analyzed:	05/23/16	Data File:	024F2401.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	36		
Ethane	<10		

<10

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	01MW07-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-04
Date Analyzed:	05/23/16	Data File:	025F2501.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	170		
Ethane	<10		

<10

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	NA	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	06-1023 mb
Date Analyzed:	05/23/16	Data File:	014F1401.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	<5		
Ethane	<10		

<10

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code:	605224-06 (Duplica	ate)		
	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

		Percent			
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Benzene	ug/L (ppb)	50	97	65-118	
Toluene	ug/L (ppb)	50	99	72-122	
Ethylbenzene	ug/L (ppb)	50	100	73-126	
Xylenes	ug/L (ppb)	150	98	74-118	
Gasoline	ug/L (ppb)	1,000	93	69-134	

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	104	63-142	0

#### ENVIRONMENTAL CHEMISTS

#### Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 605188-01 x10 (Matrix Spike)							
				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron	ug/L (ppb)	100	766	152 b	108 b	70-130	34 b
Manganese	ug/L (ppb)	20	9,890	274 b	223 b	70-130	21 b

Laboratory Code: 605188-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	103	85-115
Manganese	ug/L (ppb)	20	106	85-115

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Labor atory couct. Laborator	5	I.	Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED GASSES USING METHOD RSK 175

Laboratory Code: 605344-03 (Duplicate)

5	Reporting	Sample	Duplicate	Relative Percent Difference
Analyte	Units	Result	Result	(Limit 20)
Methane	ug/L (ppb)	<5	<5	nm
Ethane	ug/L (ppb)	<10	<10	nm
Ethene	ug/L (ppb)	<10	<10	nm

Laboratory Code: Laboratory Control Sample

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Methane	ug/L (ppb)	59	81	81	50-150	0
Ethane	ug/L (ppb)	110	75	74	50-150	1
Ethene	ug/L (ppb)	102	108	99	50-150	9

#### ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

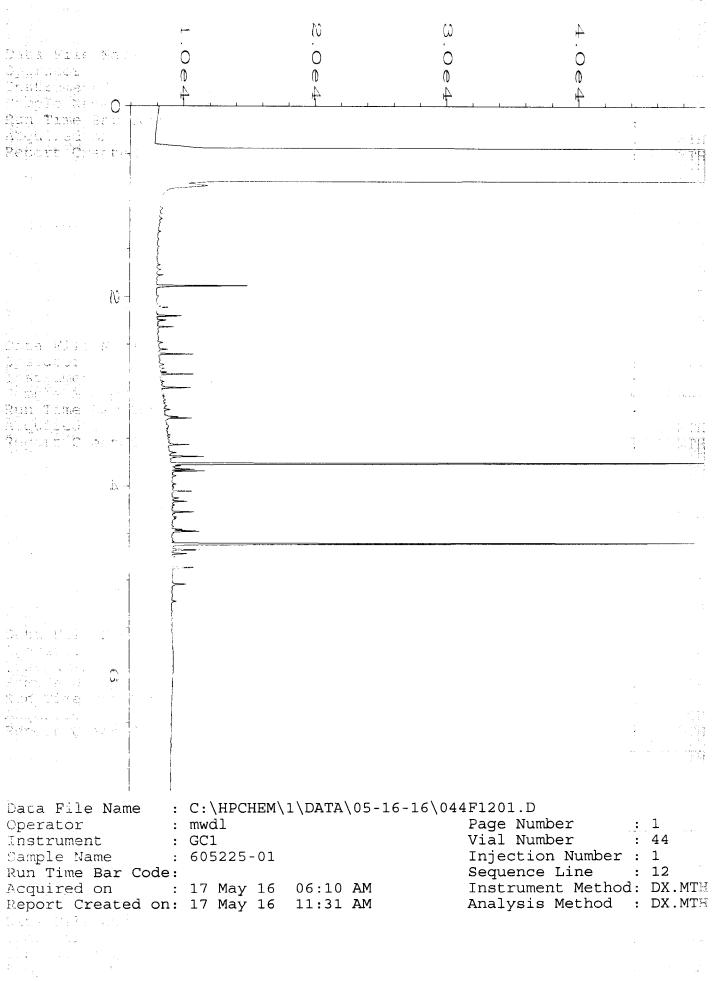
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



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Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

May 19 2016 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 605225 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
01MW66-20160512	Water	16-A008428	MET
01MW01-20160512	Water	16-A008429	MET

Your samples were received on Friday, May 13, 2016. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young Laboratory Manager

Project #: 605225 PO Number: D-933

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

#### **ANALYSIS REPORT**

Date Received: 05/13/16 Date Reported: 5/19/16

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 605225 Project #: 605225 PO Number: D-933 All results reported on an as received basis.

AMTEST Identification Number	16-A008428
Client Identification	01MW66-20160512
Sampling Date	05/12/16, 12:00

#### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	< 0.01	mg/l		0.01	SM 3500Fe D	MJ	05/13/16

<b>AMTEST Identification Nu</b>	mber
Client Identification	
Sampling Date	

16-A008429 01MW01-20160512 05/12/16, 14:49

### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	1.09	mg/l		0.01	SM 3500Fe D	MJ	05/13/16

W ron 71 Aaron W. Young Laboratory Manager

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



#### QC Summary for sample numbers: 16-A008428 to 16-A008429

#### **MATRIX SPIKES**

SAMPLE # ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
16-A008432 Ferrous Iron	mg/l	2.23	7.19	5.00	99.20 %
16-A008432 Ferrous Iron	mg/l	2.23	7.28	5.00	101.00 %
MATRIX SPIKE DUPLICATES					
SAMPLE # ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE		RPD
Spike Ferrous Iron	mg/l	7.19	7.28		1.2
STANDARD REFERENCE MATERIAL	c				
STANDARD REFERENCE WATERIAL	-				
ANALYTE	UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Ferrous Iron	mg/l	0.50	0.52		104. %
BLANKS					
ANALYTE	UNITS	RESULT			
Ferrous Iron	mg/l	< 0.01			

### SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report <u>To Michael</u>	Erdahl			SUBCONTRACTER Amtest									] [	***		e # RNAF	( ROUND '	of ( TIME C
CompanyFriedma	<u>n and Bruya</u>	Inc		PROJE	CTN	NAME/NO	•				PO #			Sta	ndard	d (2 V	Weeks)	
	th Ave W	, mc.		605225 D-0						933	RUSH Rush charges authorized					d by:		
City, State, ZIP <u>Seattle</u>	WA 98119	<u> </u>		REMARKS Please Email Results									SAMPLE DISPOSAL <ul> <li>Dispose after 30 days</li> <li>Return samples</li> </ul>					
Phone #(206) 285-8282	Fax #(20	0 <u>6) 283-50</u> 4	44									🗆 Wil			instruct	tions		
										ANA	LYSES	REQU	JESI	TED				
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample I	ype	# of containers	Total Fo	Hardness	Sulfate	Nitrate	Nitrite	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses		Notes
01MW66-20160512	8428	5/12/16	1200	water.		1	x											
01mw01-20160512	29	5/12/16	1449	I		I	x											
Friedman & Bruya, Inc.	AA	SIGNATU	JRE A			PRIN	ΤN	AMI	3			CON				Ī	DATE	TIME
3012 16th Avenue West	Belinghished		- P	N	Aicha	ael Erdahl					Fried	lman	& B	ruya		5/	13/16	0803
Seattle, WA 98119-2029	Received by:	ved by: M		T	21	5.9	Ţ	ed	Ēκ							and a	12/10	1138
Ph. (206) 285-8282	Relinquished b	nished by:							<del>~ (</del> "								· WILVE	NI 0 - U
Fax (206) 283-5044	Received by:																<del></del>	



### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

#### 3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-69	PA	AGE 1
REPORT DATE:	06/10/16		
DATE SAMPLED:	05/12/16	DATE RECEIVED:	05/13/16
FINAL REPORT, LABORATORY ANAL	YSIS OF SELECTED PARAMETE	RS ON WATER	
SAMPLES FROM FRIEDMAN & BRUYA	A, INC. / PROJECT NO. 605225		

#### CASE NARRATIVE

Two water samples were received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

#### **SAMPLE DATA**

	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
SAMPLE ID	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
01MW66-20160512	131	24.9	0.28	0.036	0.540
01MW01-20160512	51.5	21.5	0.28	0.089	0.508

	NITRATE	NITRITE	HARDNESS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)
01MW66-20160512	0.045	< 0.002	98.2
01MW01-20160512	0.014	0.004	40.3



### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-69	P	PAGE 2
REPORT DATE:	06/10/16		
DATE SAMPLED:	05/12/16	DATE RECEIVED:	05/13/16
FINAL REPORT, LABORATORY ANAL	YSIS OF SELECTED PARAMETE	RS ON WATER	
SAMPLES FROM FRIEDMAN & BRUY	A, INC. / PROJECT NO. 605225		

#### QA/QC DATA

QC PARAMETER	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
METHOD	SM18 2320B	SM184500SO4E	EPA 376.1	EPA 365.1	EPA 351.1
DATE ANALYZED	05/23/16	06/02/16	05/18/16	06/07/16	06/08/16
DETECTION LIMIT	1.00	1.00	0.05	0.002	0.200
DUPLICATE					
SAMPLE ID	BATCH	BATCH	01MW01- 20160512	01MW01- 20160512	01MW01- 20160512
ORIGINAL	61.5	2.43	0.28	0.089	0.508
DUPLICATE	61.0	2.40	0.28	0.090	0.509
RPD	0.82%	1.27%	0.00%	1.18%	0.17%
SAMPLE ID		BATCH		01MW01- 20160512	01MW01- 20160512
ORIGINAL		2.43		0.089	0.508
SPIKED SAMPLE		12.4		0.139	2.46
SPIKE ADDED		10.0		0.050	2.40
% RECOVERY	NA	100.08%	NA	100.72%	97.59%
QC CHECK					1 2.022.0
FOUND	105	9.88		0.095	6.74
TRUE	100	10.0		0.094	6.70
% RECOVERY	105.00%	98.80%	NA	101.06%	100.60%
BLANK	NA	<1.00	< 0.05	< 0.002	< 0.200

RPD = RELATIVE PERCENT DIFFERENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.



#### **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-69	PA	GE 3
REPORT DATE:	06/10/16		
DATE SAMPLED:	05/12/16	DATE RECEIVED:	05/13/16
FINAL REPORT, LABORATORY ANAL	YSIS OF SELECTED PARAMETER	RS ON WATER	
SAMPLES FROM FRIEDMAN & BRUY	A, INC. / PROJECT NO. 605225		

#### QA/QC DATA

QC PARAMETER	NITRATE	NITRITE	HARDNESS
	(mg/L)	(mg/L)	(mgCaCO3/L)
METHOD	SM184500N03F	EPA 353.2	SM18 2340C
DATE ANALYZED	05/13/16	05/13/16	06/07/16
DETECTION LIMIT	0.010	0.002	2.00
DUPLICATE			
SAMPLE ID	BATCH	BATCH	BATCH
ORIGINAL	0.234	0.004	131
DUPLICATE	0.231	0.004	134
RPD	1.01%	0.00%	2.26%
SPIKE SAMPLE			
SAMPLE ID	BATCH	BATCH	
ORIGINAL	0.234	0.004	
SPIKED SAMPLE	0.444	0.044	
SPIKE ADDED	0.200	0.040	
% RECOVERY	105.03%	100.00%	NA
QC CHECK			
FOUND	0.412	0.040	39.5
TRUE	0.408	0.040	40.0
% RECOVERY	100.98%	100.00%	98.75%
BLANK	< 0.010	< 0.002	<2.00

RPD = RELATIVE PERCENT DIFFERENCE.

ND - NELATIVE FIRENCEN DIFFRENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

#### SUBMITTED BY:

Mamien Hadomsh"

Damien Gadomski Project Manager

### TB1014-69 SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To       Michael Erdahl         Company       Friedman and Bruya, Inc         Address       3012 16th Ave W					JECT	RACTER NAME/NO		. Reg	search	·	PO #			Page # of TURNAROUND TIME Standard (2 Weeks) □ RUSH Rush charges authorized by:					
Address <u>3012 16</u>	th Ave W											itusii charges authorized by.							
City, State, ZIP <u>Seattle,</u> Phone # <u>(206) 285-8282</u>		06) 283-50	44	REN	REMARKS Please Email Results							SAMPLE DISPOSAL □ Dispose after 30 days □ Return samples □ Will call with instructions							
									<b></b> .	AN	LYSE	S REQ	UES'	FED					
Sample ID	Lab ID	Date Sampled	Time Sampled	Samp	le Type	# of containers	Total Fe	Hardness	Sulfate	Nitrate	Nitrite	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses		Notes	
01MW66-20160512		5/12/16	1200	wite	r.			Х	¥	×	¥	×	×	×	×				
01mw01 - 2016 0512		5/12/16	1449	÷				X	¥	×	۶	×	×	×	×				
Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029	Received by: N	SIGNATU	JRE			PRIN ael Erdahl	TN	AMI			Frie	CON				5/	DATE //3//6	TIM 0 8 o	7
Ph. (206) 285-8282	Relinquished b	adj W	y, F		Da	N.J. 13	2,	ng.	51	<u> </u>		-6-1-	1			<u>      </u>	3-16	1000	2
Fax (206) 283-5044	Received by:					e						·							
	(8) %	W	13.2	00	•											1			

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605225	SAMPLE CHAIN OF CUSTODY M	E 05/1	2/16 12/
Send Report To <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (sign ~, ure)		TURNAROUND TIME
CompanySoundEarth Strategies, Inc.	BROJECT NAME/NO.	PO #	Standard (2) Weeks) RUSH
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS ' low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Tim <del>e</del> Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (Iow-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01 MW67-20260512		16	OF E	5/12/16	1059	HLO.	5	X	$\times$	$\times$	$\times$							
OIMW66-ZOI6051Z	Olmwic	i7	02 M	1	1200	1	i3	X	X	X	$\mathbf{X}$		X	×	X	×	X	
A6-20160512	A6	16.5	03		1348		t				X							*** *
Gimwoi-20160512	OIMWO?	ĩ <b>3</b> ,5	04 24		1449		13	×	X	X	×		X	X	×	X	Х	
							35											
						5/13	/16											
	······																	

Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	Lugin Schemacher	SometEwill	5/12/16	1606
Seattle, WA 98119-2029	Received by:	Matt Lungston	FBtue	5/12/10	1606
Ph. (206) 285-8282	Relinquished by:				1000
Fax (206) 283-5044	Received by:		Samples received	at_4	с

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 22, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included is the amended report from the testing of material submitted on May 12, 2016 from the TOC\_01-600\_20160512 WORFDB8, F&BI 605225 project. The sample ID 01MW07-20160512 has been corrected to 01MW01-20160512.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0614R.DOC

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 14, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 12, 2016 from the TOC\_01-600\_20160512 WORFDB8, F&BI 605225 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0614R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 12, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160512 WORFDB8, F&BI 605225 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SoundEarth Strategies</u>
605225 -01	01MW67-20160512
605225 -02	01MW66-20160512
605225 -03	A6-20160512
605225 -04	01MW01-20160512
605225 -04	01MW01-20160512

Samples 01MW66-20160512 and 01MW01-20160512 were sent to Aquatic Research for sulfate, nitrate, nitrite, total phosphorus, hardness, alkalinity, TKN, and sulfide analyses. In addition, the samples were sent to Amtest for ferrous iron analysis. The reports are enclosed.

The NWTPH-Dx surrogate of sample 01MW67-20160512 failed below the acceptance criteria. The results are flagged accordingly.

Phenol-d6 failed the laboratory acceptance criteria in samples 01MW66-20160512, A6-20160512 and the associated method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225 Date Extracted: 05/13/16 Date Analyzed: 05/13/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 50-150)
01MW67-20160512 605225-01	2 <1	<1	<1	<3	<100	77
01MW66-20160512 605225-02	2 <1	<1	<1	<3	<100	81
01MW01-20160512 605225-04	2 <1	2.5	<1	<3	<100	81
Method Blank 06-945 MB	<1	<1	<1	<3	<100	97

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW67-20160512 605225-01	<50	<250	33 vo
01MW66-20160512 605225-02	270 x	<250	109
01MW01-20160512 605225-04	180 x	<250	102
Method Blank 06-981 MB	<50	<250	104

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Manganese

Client ID:	01MW66-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-02
Date Analyzed:	05/24/16	Data File:	605225-02.127
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	157		

1,510

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	01MW01-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-04
Date Analyzed:	05/24/16	Data File:	605225-04.128
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	1,140		
Manganese	693		

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	NA	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	I6-325 mb
Date Analyzed:	05/23/16	Data File:	I6-325 mb.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	<50		
Manganese	<1		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW67-20 05/12/16 05/17/16 05/18/16 Water ug/L (ppb)	0160512	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-01 051815.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 67 53 128	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW66-202 05/12/16 05/17/16 05/18/16 Water ug/L (ppb)	160512	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-02 051816.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 58 46 vo 133	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds: Pentachlorophenol		Concentration ug/L (ppb) 0.54		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	A6-2016051 05/12/16 05/17/16 05/20/16 Water ug/L (ppb)	2	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-03 052017.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 76 46 vo 109	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW01-20 05/12/16 05/17/16 05/20/16 Water ug/L (ppb)	160512	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 605225-04 1/10 052018.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 59 d 39 d 129 d	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		18		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicabl 05/17/16 05/18/16 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 06-982 mb 051806.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen		% Recovery: 53 33 vo 79	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:	(	Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	01MW66-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-02
Date Analyzed:	05/23/16	Data File:	024F2401.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	36		
Ethane	<10		

<10

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	01MW01-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512, F&BI 605225
Date Extracted:	05/23/16	Lab ID:	605225-04
Date Analyzed:	05/23/16	Data File:	025F2501.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	170		
Ethane	<10		

<10

### ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID: Date Received: Date Extracted: Date Analyzed:	Method Blank NA 05/23/16 05/23/16	Client: Project: Lab ID: Data File:	SoundEarth Strategies TOC_01-600_20160512, F&BI 605225 06-1023 mb 014F1401.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
Compounds:	Concentration ug/L (ppb)		
Methane Ethane	<5 <10		

<10

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605224-06 (Duplicate)						
	Reporting	Sample	Duplicate	RPD		
Analyte	Units	Result	Result	(Limit 20)		
Benzene	ug/L (ppb)	<1	<1	nm		
Toluene	ug/L (ppb)	<1	<1	nm		
Ethylbenzene	ug/L (ppb)	<1	<1	nm		
Xylenes	ug/L (ppb)	<3	<3	nm		
Gasoline	ug/L (ppb)	<100	<100	nm		

Laboratory Code: Laboratory Control Sample

		Percent			
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Benzene	ug/L (ppb)	50	97	65-118	
Toluene	ug/L (ppb)	50	99	72-122	
Ethylbenzene	ug/L (ppb)	50	100	73-126	
Xylenes	ug/L (ppb)	150	98	74-118	
Gasoline	ug/L (ppb)	1,000	93	69-134	

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	104	63-142	0

### ENVIRONMENTAL CHEMISTS

### Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

### **QUALITY ASSURANCE RESULTS** FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 605188-01 x10 (Matrix Spike)							
				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron	ug/L (ppb)	100	766	152 b	108 b	70-130	34 b
Manganese	ug/L (ppb)	20	9,890	274 b	223 b	70-130	21 b

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	103	85-115
Manganese	ug/L (ppb)	20	106	85-115

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

Laboratory couct Laborator	<b>J</b>	I.	Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605225

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED GASSES USING METHOD RSK 175

Laboratory Code: 605344-03 (Duplicate)

5	Reporting	Sample	Duplicate	Relative Percent Difference
Analyte	Units	Result	Result	(Limit 20)
Methane	ug/L (ppb)	<5	<5	nm
Ethane	ug/L (ppb)	<10	<10	nm
Ethene	ug/L (ppb)	<10	<10	nm

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Methane	ug/L (ppb)	59	81	81	50-150	0
Ethane	ug/L (ppb)	110	75	74	50-150	1
Ethene	ug/L (ppb)	102	108	99	50-150	9

#### ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Friedman & Bruya, Inc. #605226

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 14, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 12, 2016 from the TOC\_01-600\_20160512 WORFDB8, F&BI 605226 project. There are 17 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0614R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 12, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160512 WORFDB8, F&BI 605226 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SoundEarth Strategies</u>
605226 -01	01MW40-20160512
605226 -02	01MW75-20160512
605226 -03	01MW74-20160512
605226 -04	N10-20160512

Samples 01MW75-20160512 and 01MW74-20160512 were sent to Aquatic Research for sulfate, nitrate, nitrite, total phosphorus, hardness, alkalinity, TKN, and sulfide analyses. In addition, the samples were sent to Amtest for ferrous iron analysis. The reports are enclosed.

Several 8270D surrogates failed the laboratory acceptance criteria in sample N10-20160512 and the method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605226 Date Extracted: 05/13/16 Date Analyzed: 05/13/16 and 05/16/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW40-20160512 605226-01	<1	<1	<1	<3	<100	94
01MW75-20160512 605226-02	<1	<1	1.7	<3	<100	97
01MW74-20160512 605226-03	<1	<1	<1	<3	<100	100
N10-20160512 605226-04	110	15	28	34	830	81
Method Blank <sup>06-945 MB</sup>	<1	<1	<1	<3	<100	97

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605226 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 47-140)
01MW40-20160512 605226-01	1,900 x	530 x	81
01MW75-20160512 605226-02	2,300 x	360 x	92
01MW74-20160512 605226-03	220 x	<250	103
N10-20160512 605226-04	5,600 x	1,600 x	83
Method Blank 06-980 MB	<50	<250	99

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	01MW75-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512 WORFDB8
Date Extracted:	05/23/16	Lab ID:	605226-02
Date Analyzed:	05/24/16	Data File:	605226-02.129
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	2,780		
Manganese	2,600		

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Manganese

Client ID:	01MW74-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512 WORFDB8
Date Extracted:	05/23/16	Lab ID:	605226-03
Date Analyzed:	05/24/16	Data File:	605226-03.131
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	423		

308

## ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Method Blank	Client:	SoundEarth Strategies
NA	Project:	TOC_01-600_20160512 WORFDB8
05/23/16	Lab ID:	I6-325 mb
05/23/16	Data File:	I6-325 mb.069
Water	Instrument:	ICPMS1
ug/L (ppb)	Operator:	SP
Concentration		
ug/L (ppb)		
<50		
<1		
	NA 05/23/16 05/23/16 Water ug/L (ppb) Concentration ug/L (ppb) <50	NA Project: 05/23/16 Lab ID: 05/23/16 Data File: Water Instrument: ug/L (ppb) Operator: <50

## ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix:	01MW74-20160512 05/12/16 05/17/16 05/18/16 Water	Project: Lab ID: Data Fi Instrum	TOC_01-60 605226-03 le: 051819.D nent: GCMS10	th Strategies 00_20160512 WORFDB8
Units:	ug/L (ppb)	Operate	or: VM	
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	6 5		ower mit: 50 50 50	Upper Limit: 150 150 150
Compounds:		ntration (ppb)		
Pentachlorophenol	<0	0.2		

## ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	N10-2016051 05/12/16 05/17/16 05/20/16 Water ug/L (ppb)	2	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512 WORFDB8 605226-04 052016.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 58 46 vo 103	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:	(	Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicable 05/17/16 05/18/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160512 WORFDB8 06-982 mb 051806.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recover 53 33 vo ol 79	Lower ry: Limit: 50 50 50 50	Upper Limit: 150 150 150
Compounds:	Concentrat ug/L (ppt		
Pentachlorophenol	<0.2		

## ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	01MW75-20160512	Client:	SoundEarth Strategies
Date Received:	05/12/16	Project:	TOC_01-600_20160512 WORFDB8
Date Extracted:	05/23/16	Lab ID:	605226-02
Date Analyzed:	05/23/16	Data File:	026F2601.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	110		
Ethane	<10		

<10

## ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Gasses By RSK 175

Ethene

Client Sample ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	NA	Project:	TOC_01-600_20160512 WORFDB8
Date Extracted:	05/23/16	Lab ID:	06-1023 mb
Date Analyzed:	05/23/16	Data File:	014F1401.D
Matrix:	Water	Instrument:	GC8
Units:	ug/L (ppb)	Operator:	JS
	Concentration		
Compounds:	ug/L (ppb)		
Methane	<5		
Ethane	<10		

<10

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605226

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605224-06 (Duplicate)							
-	Reporting	Sample	Duplicate	RPD			
Analyte	Units	Result	Result	(Limit 20)			
Benzene	ug/L (ppb)	<1	<1	nm			
Toluene	ug/L (ppb)	<1	<1	nm			
Ethylbenzene	ug/L (ppb)	<1	<1	nm			
Xylenes	ug/L (ppb)	<3	<3	nm			
Gasoline	ug/L (ppb)	<100	<100	nm			

		Percent					
	Reporting	Spike	Recovery	Acceptance			
Analyte	Units	Level	LCS	Criteria			
Benzene	ug/L (ppb)	50	97	65-118			
Toluene	ug/L (ppb)	50	99	72-122			
Ethylbenzene	ug/L (ppb)	50	100	73-126			
Xylenes	ug/L (ppb)	150	98	74-118			
Gasoline	ug/L (ppb)	1,000	93	69-134			

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605226

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	106	108	61-133	2

### ENVIRONMENTAL CHEMISTS

### Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605226

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Cod	e: 605188-01 x	:10 (Matri	x Spike)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron Manganese	ug/L (ppb) ug/L (ppb)	100 20	766 9,890	152 b 274 b	108 b 223 b	70-130 70-130	34 b 21 b

Laboratory Code: 605188-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	103	85-115
Manganese	ug/L (ppb)	20	106	85-115

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605226

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

Laboratory couct. Laborator	5	I -	Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/16 Date Received: 05/12/16 Project: TOC\_01-600\_20160512 WORFDB8, F&BI 605226

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED GASSES USING METHOD RSK 175

Laboratory Code: 605344-03 (Duplicate)

5	Reporting	Sample	Duplicate	Relative Percent Difference
Analyte	Units	Result	Result	(Limit 20)
Methane	ug/L (ppb)	<5	<5	nm
Ethane	ug/L (ppb)	<10	<10	nm
Ethene	ug/L (ppb)	<10	<10	nm

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Methane	ug/L (ppb)	59	81	81	50-150	0
Ethane	ug/L (ppb)	110	75	74	50-150	1
Ethene	ug/L (ppb)	102	108	99	50-150	9

#### ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

 $\ensuremath{\text{ip}}$  - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

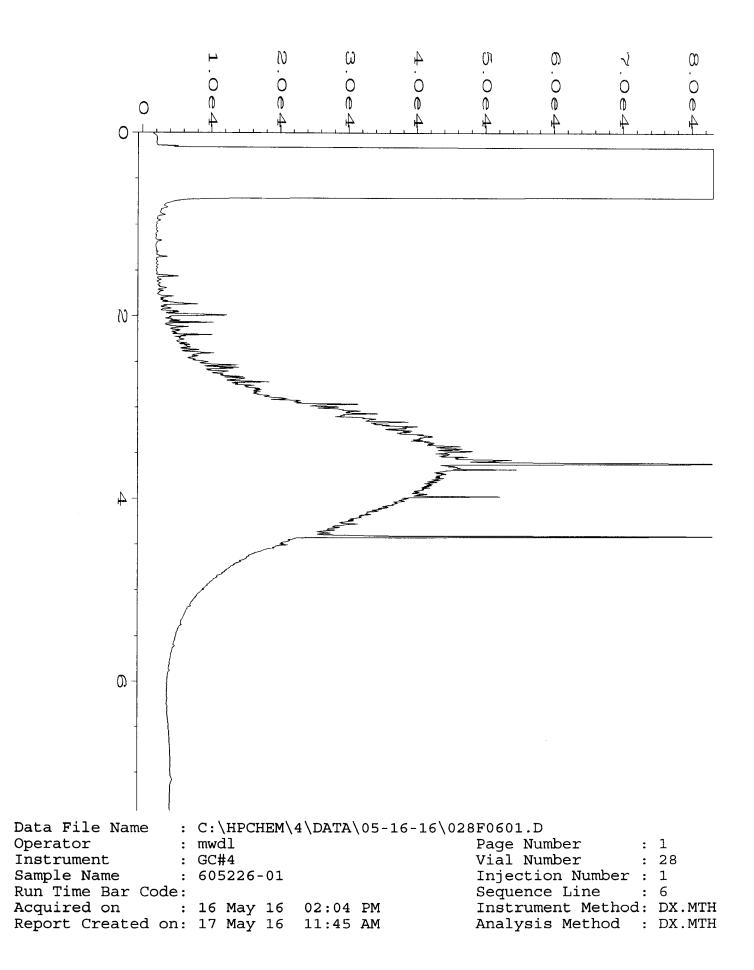
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

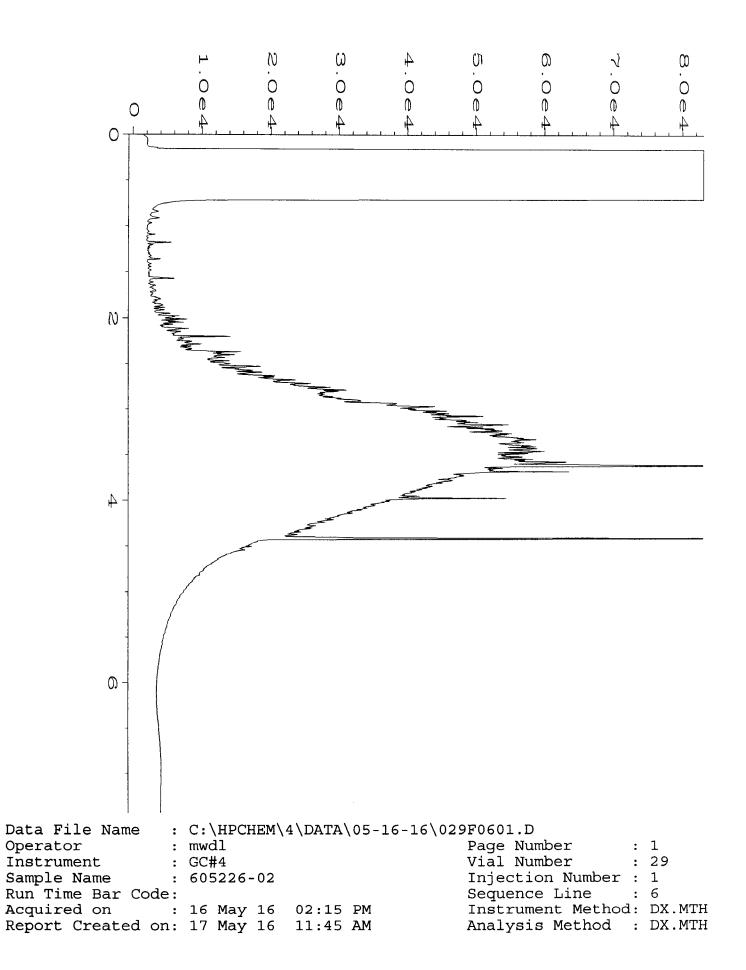
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

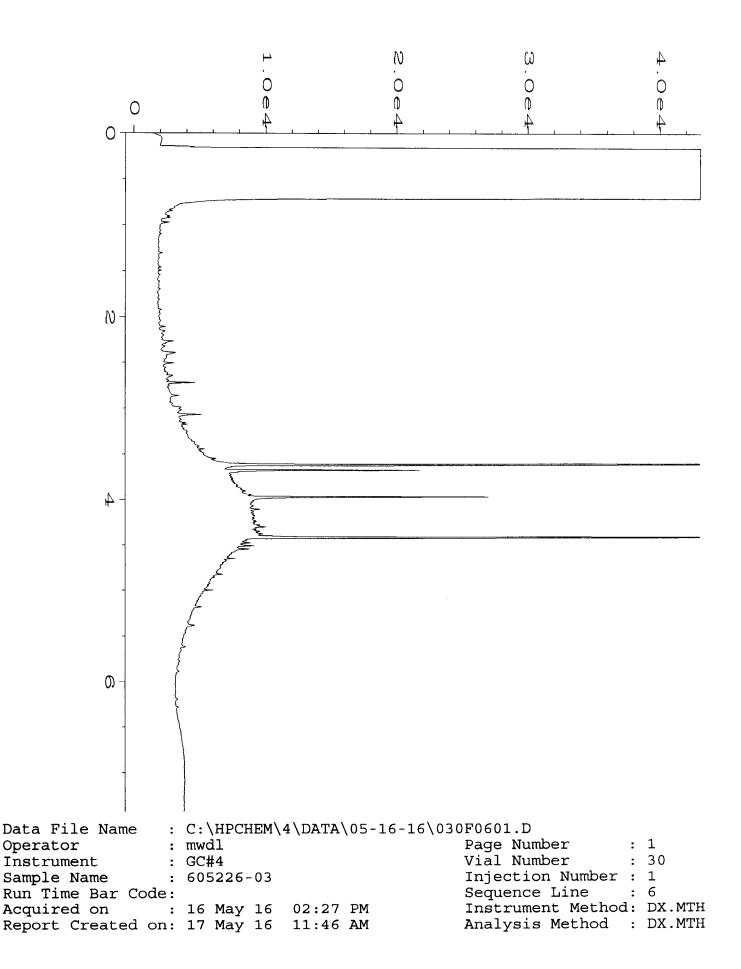
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

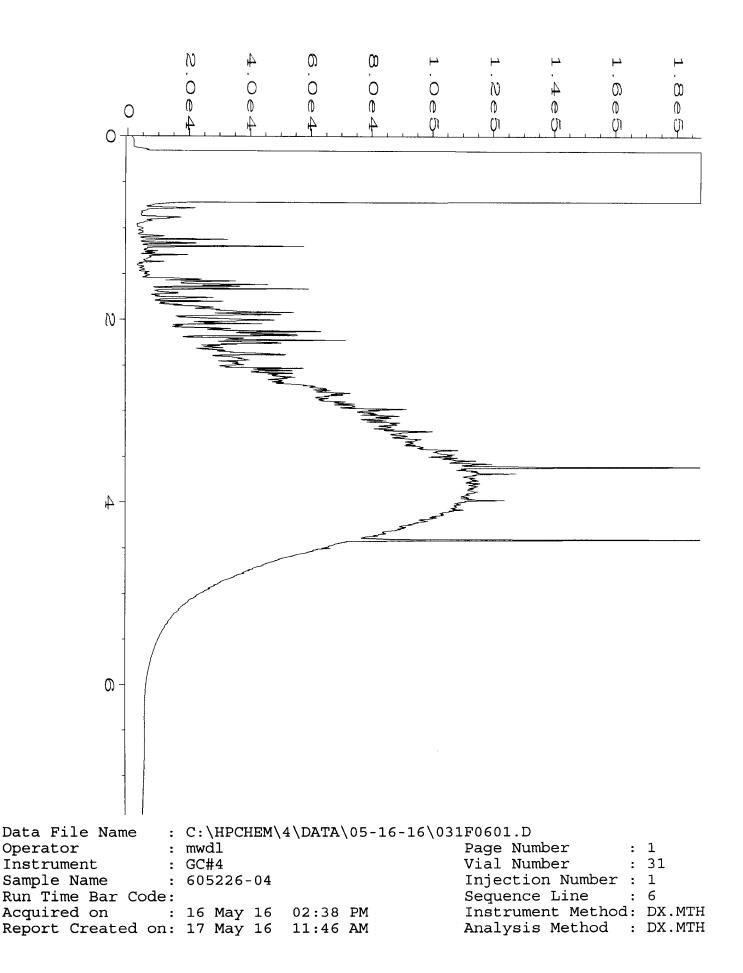
vo - The value reported fell outside the control limits established for this analyte.

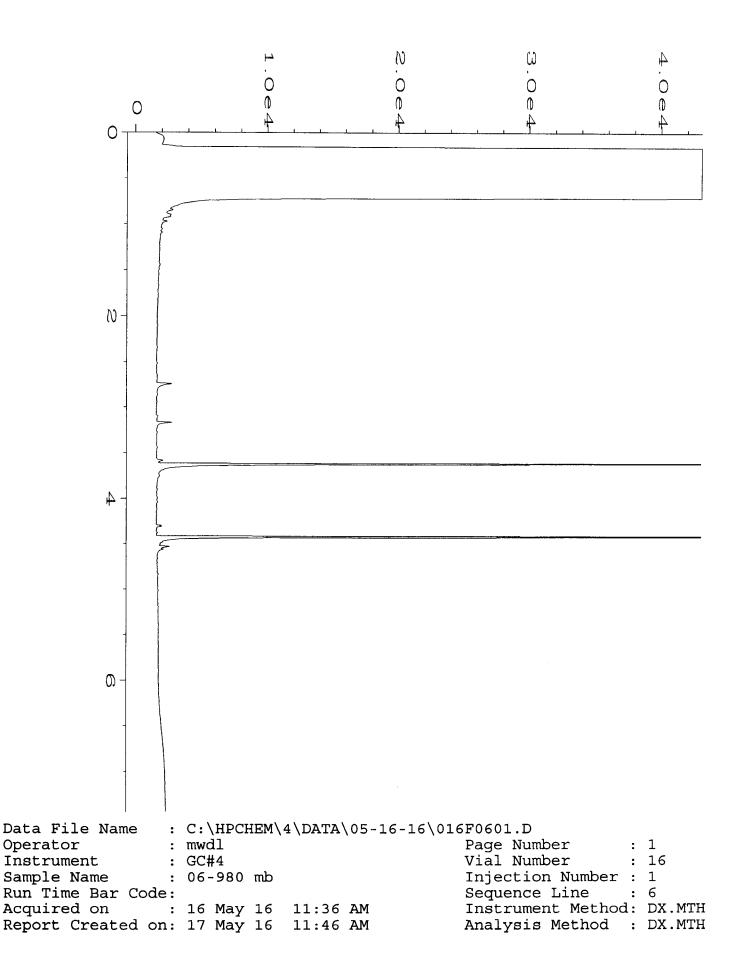
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

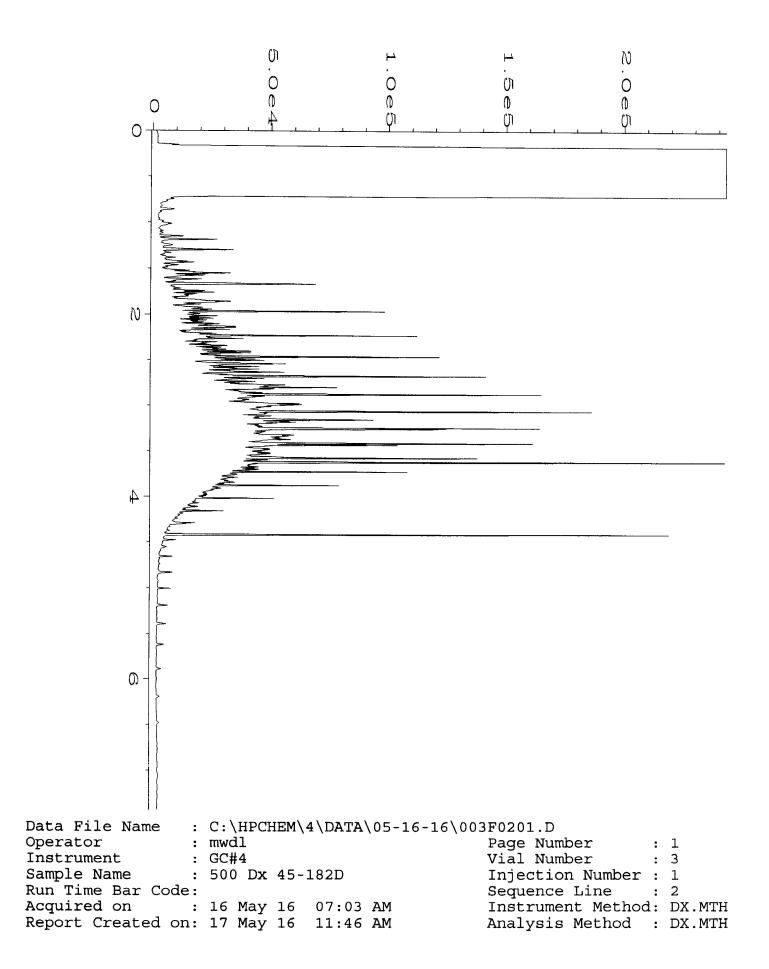














Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

May 19 2016 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 605226 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
01MW75-20160512	Water	16-A008430	MET
01MW74-20160512	Water	16-A008431	MET

Your samples were received on Friday, May 13, 2016. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young Laboratory Manager

Project #: 605226 PO Number: D-933

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

### **ANALYSIS REPORT**

Date Received: 05/13/16 Date Reported: 5/19/16

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 605226 Project #: 605226 PO Number: D-933 All results reported on an as received basis.

AMTEST Identification Number	16-A008430
Client Identification	01MW75-20160512
Sampling Date	05/12/16, 11:51

#### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	2.76	mg/l		0.01	SM 3500Fe D	MJ	05/13/16

<b>AMTEST Identification N</b>	umber
Client Identification	
Sampling Date	

16-A008431 01MW74-20160512 05/12/16, 13:25

### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	0.15	mg/l		0.01	SM 3500Fe D	MJ	05/13/16

W ron 77 Aaron W. Young Laboratory Manager

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



#### QC Summary for sample numbers: 16-A008430 to 16-A008431

#### **MATRIX SPIKES**

SAMPLE # ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
16-A008432 Ferrous Iron	mg/l	2.23	7.19	5.00	99.20 %
16-A008432 Ferrous Iron	mg/l	2.23	7.28	5.00	101.00 %
MATRIX SPIKE DUPLICATES					
SAMPLE # ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE		RPD
Spike Ferrous Iron	mg/l	7.19	7.28		1.2
STANDARD REFERENCE MATERIAL	c				
STANDARD REFERENCE WATERIAL	-				
ANALYTE	UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Ferrous Iron	mg/l	0.50	0.52		104. %
BLANKS					
ANALYTE	UNITS	RESULT			
Ferrous Iron	mg/l	< 0.01			

### SUBCONTRACT SAMPLE CHAIN OF CUSTODY

-	in and Bruya th Ave W WA 98119		44	REMARKS	NAME/NC	). 6	sults	ł	D-'	20 # 9 <b>33</b> Lyses	REQI		C RU Rush C Dis Ret Wil	TUR ndarc SH charg SAI pose a urn s	RNAF d (2 V ges a MPL after amp	ROUND ' Weeks) uthorized E DISPC 30 days les i instruct	IIME O
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers		Hardness	Sulfate	Nitrate	Nitrite	Alkalinity	Sulfide		Total Phosphorus	Dissolved Gasses		Notes
01MW75-20160512	3430		1151	water	1	<u>入</u>	ļ										
CIMW74-2016 0512	- 31	4	1325	J.	1	*											
						İ –											
Friedman & Bruya, Inc.	Relinguisher	SIGNATU	JRE		PRIN		IAM	E							-	DATE	TIME
3012 16th Avenue West		ren		Mich	nael Erdahl					Frie	dman	&В	ruya		5	13/16	0301
Seattle, WA 98119-2029	Received by:	FM		Second Second	6.9		Fel	tex	se S						9	13/10	1138
Ph. (206) 285-8282	Relinquished b	y:															
Fax (206) 283-5044	Received by:														T		14011-14-04 1



### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

#### 3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-68	P	AGE 1
REPORT DATE:	06/10/16		
DATE SAMPLED:	05/12/16	DATE RECEIVED:	05/13/16
FINAL REPORT, LABORATORY ANAL	YSIS OF SELECTED PARAMETE	RS ON WATER	
SAMPLES FROM FRIEDMAN & BRUYA	A, INC. / PROJECT NO. 605226		

#### CASE NARRATIVE

Two water samples were received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

#### **SAMPLE DATA**

	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
SAMPLE ID	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
01MW75-20160512	441	52.1	0.38	0.089	0.552
01MW74-20160512	189	15.0	0.18	0.062	0.529

	NITRATE	NITRITE	HARDNESS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)
01MW75-20160512	0.026	0.002	408
01MW74-20160512	< 0.010	0.002	171



### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-68	P	AGE 2							
REPORT DATE:	06/10/16									
DATE SAMPLED:	05/12/16	DATE RECEIVED:	05/13/16							
FINAL REPORT, LABORATORY ANAI	FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER									
SAMPLES FROM FRIEDMAN & BRUY	A, INC. / PROJECT NO. 605226									

#### QA/QC DATA

QC PARAMETER	ALKALINITY	SULFATE	SULFIDE	TOTAL-P	TKN
	(mgCaCO3/l)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
METHOD	SM18 2320B	SM184500SO4E	EPA 376.1	EPA 365.1	EPA 351.1
DATE ANALYZED	05/23/16	06/02/16	05/18/16	06/07/16	06/08/16
DETECTION LIMIT	1.00	1.00	0.05	0.002	0.200
DUPLICATE					
SAMPLE ID	BATCH	BATCH	BATCH	BATCH	BATCH
ORIGINAL	61.5	2.43	0.28	0.089	0.508
DUPLICATE	61.0	2.40	0.28	0.090	0.509
RPD	0.82%	1.27%	0.00%	1.18%	0.17%
SAMPLE ID		ВАТСН		BATCH	ВАТСН
		-		1	
ORIGINAL		2.43		0.089	0.508
SPIKED SAMPLE					
		12.4		0.139	2.46
SPIKE ADDED		10.0	37.4	0.050	2.00
% RECOVERY	NA	100.08%	NA	100.72%	97.59%
QC CHECK					
FOUND	105	9.88		0.095	6.74
TRUE	100	10.0		0.094	6.70
% RECOVERY	105.00%	98.80%	NA	101.06%	100.60%
BLANK	NA	<1.00	< 0.05	< 0.002	< 0.200

RPD = RELATIVE PERCENT DIFFERENCE.

ND = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.



### **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-68	PAGE 3					
REPORT DATE:	06/10/16						
DATE SAMPLED:	05/12/16	DATE RECEIVED:	05/13/16				
FINAL REPORT, LABORATORY ANAL	YSIS OF SELECTED PARAMETE	RS ON WATER					
AMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605226							

#### QA/QC DATA

QC PARAMETER	NITRATE	NITRITE	HARDNESS
	(mg/L)	(mg/L)	(mgCaCO3/L)
METHOD	SM184500N03F	EPA 353.2	SM18 2340C
DATE ANALYZED	05/13/16	05/13/16	06/07/16
DETECTION LIMIT	0.010	0.002	2.00
DUPLICATE			
SAMPLE ID	BATCH	BATCH	BATCH
ORIGINAL	0.234	0.004	131
DUPLICATE	0.231	0.004	134
RPD	1.01%	0.00%	2.26%
SPIKE SAMPLE			
SAMPLE ID	BATCH	BATCH	
ORIGINAL	0.234	0.004	
SPIKED SAMPLE	0.444	0.044	
SPIKE ADDED	0.200	0.040	
% RECOVERY	105.03%	100.00%	NA
QC CHECK			
FOUND	0.412	0.040	39.5
TRUE	0.408	0.040	40.0
% RECOVERY	100.98%	100.00%	98.75%
BLANK	< 0.010	< 0.002	<2.00

RPD = RELATIVE PERCENT DIFFERENCE.

ND - NELATIVE FIRENCEN DIFFRENCE. NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

#### SUBMITTED BY:

Mamien Hadomsh"

Damien Gadomski Project Manager

# 7B1014-68 SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report <u>To Michae</u>		т				RACTER NAME/NO		. R	esea	rch	PO#		[	Page # of TURNAROUND TIME				
CompanyFriedma Address3012 16	an and Bruya 6th Ave W	<u>, Inc.</u>			605226 D-976					RUSH Rush charges authorized by:			ed by:					
City, State, ZIP <u>Seattle, WA 98119</u> Phone # <u>(206) 285-8282</u> Fax # <u>(206) 283-5044</u>				REN	REMARKS Please Email Results						SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions				}			
			T	r					1	AN	ALYSE	S REQ	UESI	FED				
Sample ID	Lab ID	Date Sampled	Time Sampled	Samp	Іе Туре	# of containers	Total Fe	Hardness	Sulfate	Nitrate	Nitrite	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses		Notes
01MW75-20160512		5/12/11	1151	24	*			X	Х	Y	¥	×	×	7	x			·:
01 MW74-2016 0512		ł	1325	f-				Ý	X	×	×	×	¥	x	X		*****	
Friedman & Bruya, Inc. 3012 16th Avenue West	Belimurishmir	SIGNATU	URE		Micha	PRIN ael Erdahl	TN	AMI	<u>.</u>		Frie	CO	MPA & B				)ATE	TIME
Seattle, WA 98119-2029	Received by:				Nr	TOT.	-	71					$\sim 11$					0301
Ph. (206) 285-8282	Relinquished b	7			Val	V B/M	<u>₹</u>	<b>√</b>				<u> ト</u> 6	<u>-</u> .H		•••••	5-1	13.16	1000
Fax (206) 283-5044	Received by:		•••••,															
	().90C	(	(8) %	In	I						1					1		<u> </u>

605226	SAMPLE CHAIN OF CUSTODY	E 05/12	16 10/
Send Report To_ <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (signature)		TURNAROUND TIME
CompanySoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	XStandard (2 Weeks) RUSH
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS ' low level detection limit of	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples
	0.219 ug/L for PCP.	1	Will call with instructions

Sample ID	Sampl <del>e</del> Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (lo <del>w level</del> detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01MW40-20160512			013-	5/12/16	1100	HZÜ	4	×	$\boldsymbol{\times}$	×								
OIMW75-BOIGOSIZ			02/ Ē	5/12/16	1151	Hz C	12	$\mathbf{X}$	×	×		1	×	X	X	X	$\times$	
01MW74-20160512			03"K	5/12/16	1325	H2O	11	X	×	×	X		X		X	X	X	
NIO - 20160512	NIO		oute	5/12/16	1433	H20	5	×	×	×	×							
									A	d	l	<i>c-i</i>		•				
									51	Ŋ	£	5/12	116					
								1										

Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by	JONATHAN LOEFFLER	SOUNDEARTH	5/12/16	1606
Seattle, WA 98119-2029	Received by:	Matt Laugston	FRIDE	5/2/10	1606
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:		Samples receiv	ed at <u> </u>	2

Friedman & Bruya, Inc. #605257

### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

May 20, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 13, 2016 from the TOC\_01-600\_20160513 WORFDB8, F&BI 605257 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0520R.DOC

### ENVIRONMENTAL CHEMISTS

## CASE NARRATIVE

This case narrative encompasses samples received on May 13, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160513 WORFDB8, F&BI 605257 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
605257 -01	01MW11-20160513

All quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/20/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605257 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW11-20160513 605257-01	<1	<1	<1	<3	<100	99
Method Blank 06-948 MB	<1	<1	<1	<3	<100	99

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/20/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605257 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW11-20160513 605257-01	550 x	<250	114
Method Blank 06-981 MB	<50	<250	104

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/20/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605257

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605266-01 (Duplicate)

J	Reporting	·	Duplicate	RPD
Analyte	Units	Sample Result	Result	(Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

		Percent							
	Reporting	Spike	Recovery	Acceptance					
Analyte	Units	Level	LCS	Criteria					
Benzene	ug/L (ppb)	50	100	65-118					
Toluene	ug/L (ppb)	50	101	72-122					
Ethylbenzene	ug/L (ppb)	50	102	73-126					
Xylenes	ug/L (ppb)	150	99	74-118					
Gasoline	ug/L (ppb)	1,000	94	69-134					

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/20/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605257

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	104	63-142	0

ENVIRONMENTAL CHEMISTS

# **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

 $\ensuremath{\mathsf{ca}}$  - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

 $hr\ \text{-}\ The\ sample\ and\ duplicate\ were\ reextracted\ and\ reanalyzed.\ RPD\ results\ were\ still\ outside\ of\ control\ limits.\ Variability\ is\ attributed\ to\ sample\ inhomogeneity.$ 

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

 ${\rm ip}$  - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

 ${\rm J}$  - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

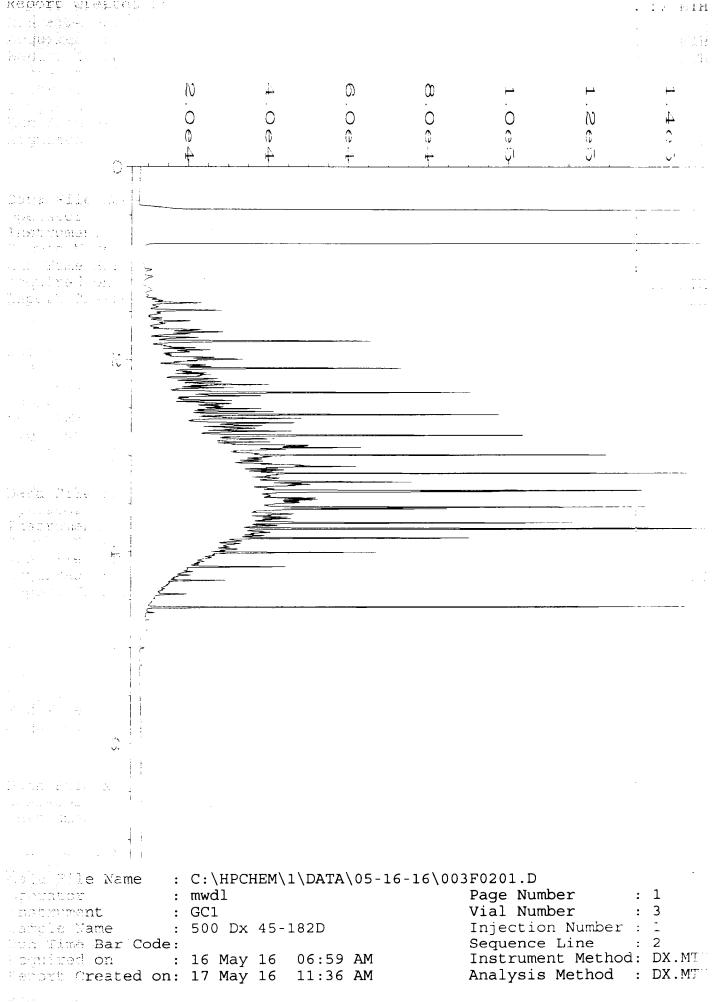
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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( <u>605257</u> Send Report To <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLE CHAIN OF CUSTODY	E 5/13/16	Page #
Company <u>SoundEarth Strategies, Inc.</u> Address <u>2811 Fairview Ave E, Suite 2000</u>	PROJECT NAME/NO. TOC Holdings Co. Facility No. 01-600 Seattle Terminal	PO # 01-600	Standard (2 Weeks) RUSH Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS ' low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Sample ID <sup>*</sup>	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-GX	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (Iow-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01MW11-20160513	OIMWII	·	015	5/13/16	1408	HzO	4	X	×	メ								
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	JONATHAN LOEFFLER	SOUNDEARTH	5/13/16	1555
Seattle, WA 98119-2029	Received by Mught Fabric	Elizabeth Radford	F#B	5/12/16	1555
Ph. (206) 285-8282	Relinquished by:	0-0-1-0			
Fax (206) 283-5044	Received by:	Sample	es received at°C		

Friedman & Bruya, Inc. #605269

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

May 25, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 13, 2016 from the TOC\_01-600\_20160513 WORFDB8, F&BI 605269 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0525R.DOC

### ENVIRONMENTAL CHEMISTS

## CASE NARRATIVE

This case narrative encompasses samples received on May 13, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160513 WORFDB8, F&BI 605269 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	<u>SoundEarth Strategies</u>
605269 -01	01MW30-20160513
605269 -02	01MW32-20160513
605269 -03	01MW88-20160513

All quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/25/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605269 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW30-20160513 605269-01	<1	<1	<1	<3	<100	100
01MW32-20160513 605269-02	<1	<1	<1	<3	<100	98
Method Blank 06-948 MB	<1	<1	<1	<3	<100	99

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/25/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605269 Date Extracted: 05/18/16 Date Analyzed: 05/18/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

<u>Sample ID</u> Laboratory ID	$\frac{\text{Diesel Range}}{(C_{10}-C_{25})}$	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW30-20160513 605269-01	410 x	<250	97
01MW32-20160513 605269-02	<50	<250	104
Method Blank 06-992 MB	<50	<250	107

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW30-20 05/13/16 05/16/16 05/16/16 Water ug/L (ppb)	160513	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160513 WORFDB8 605269-01 051632.D GCMS4 JS
Surrogates:		% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-	d4	102	57	121
Toluene-d8	ui	102	63	127
4-Bromofluorobenze	ne	104	60	133
Compounds:		Concentration ug/L (ppb)		
Vinyl chloride		<0.2		
Chloroethane		<1		
1,1-Dichloroethene		<1		
Methylene chloride		<5		
trans-1,2-Dichloroet	thene	<1		
1,1-Dichloroethane		<1		
cis-1,2-Dichloroethe	ne	<1		
1,2-Dichloroethane	(EDC)	<1		
1,1,1-Trichloroetha	ne	<1		
Trichloroethene		<1		
Tetrachloroethene		<1		

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blar Not Applical 05/16/16 05/16/16 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160513 WORFDB8 06-967 mb 051626.D GCMS4 JS
Surrogates: 1,2-Dichloroethane-	d4	% Recovery: 101	Lower Limit: 57	Upper Limit: 121
Toluene-d8 4-Bromofluorobenze	ne	106 102	63 60	127 133
Compounds:		Concentration ug/L (ppb)		
Vinyl chloride		<0.2		
Chloroethane		<1		
1,1-Dichloroethene		<1		
Methylene chloride		<5		
trans-1,2-Dichloroet	thene	<1		
1,1-Dichloroethane		<1		
cis-1,2-Dichloroethe	ne	<1		
1,2-Dichloroethane	(EDC)	<1		
1,1,1-Trichloroetha	ne	<1		
Trichloroethene		<1		
Tetrachloroethene		<1		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/25/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605269

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605266-01 (Duplicate)

0	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/L (ppb)	50	100	65-118
Toluene	ug/L (ppb)	50	101	72-122
Ethylbenzene	ug/L (ppb)	50	102	73-126
Xylenes	ug/L (ppb)	150	99	74-118
Gasoline	ug/L (ppb)	1,000	94	69-134

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/25/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605269

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	105	104	63-142	1

### ENVIRONMENTAL CHEMISTS

Date of Report: 05/25/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605269

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 605227-02 (Matrix Spike)

	1			Percent	
	Reporting	Spike	Sample	Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
Vinyl chloride	ug/L (ppb)	50	< 0.2	95	36-166
Chloroethane	ug/L (ppb)	50	<1	111	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	93	60-136
Methylene chloride	ug/L (ppb)	50	<5	105	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	96	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	98	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	101	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	92	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	96	60-146
Trichloroethene	ug/L (ppb)	50	<1	97	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	89	10-226

Laboratory Code. Laboratory C	Since of Sumple		Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Vinyl chloride	ug/L (ppb)	50	98	102	50-154	4
Chloroethane	ug/L (ppb)	50	114	119	58-146	4
1,1-Dichloroethene	ug/L (ppb)	50	98	102	67-136	4
Methylene chloride	ug/L (ppb)	50	120	124	39-148	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	103	108	68-128	5
1,1-Dichloroethane	ug/L (ppb)	50	103	106	79-121	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	107	112	80-123	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	95	99	73-132	4
1,1,1-Trichloroethane	ug/L (ppb)	50	102	106	83-130	4
Trichloroethene	ug/L (ppb)	50	99	104	80-120	5
Tetrachloroethene	ug/L (ppb)	50	94	95	76-121	1

ENVIRONMENTAL CHEMISTS

# **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

 ${\rm ip}$  - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

 ${\rm J}$  - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

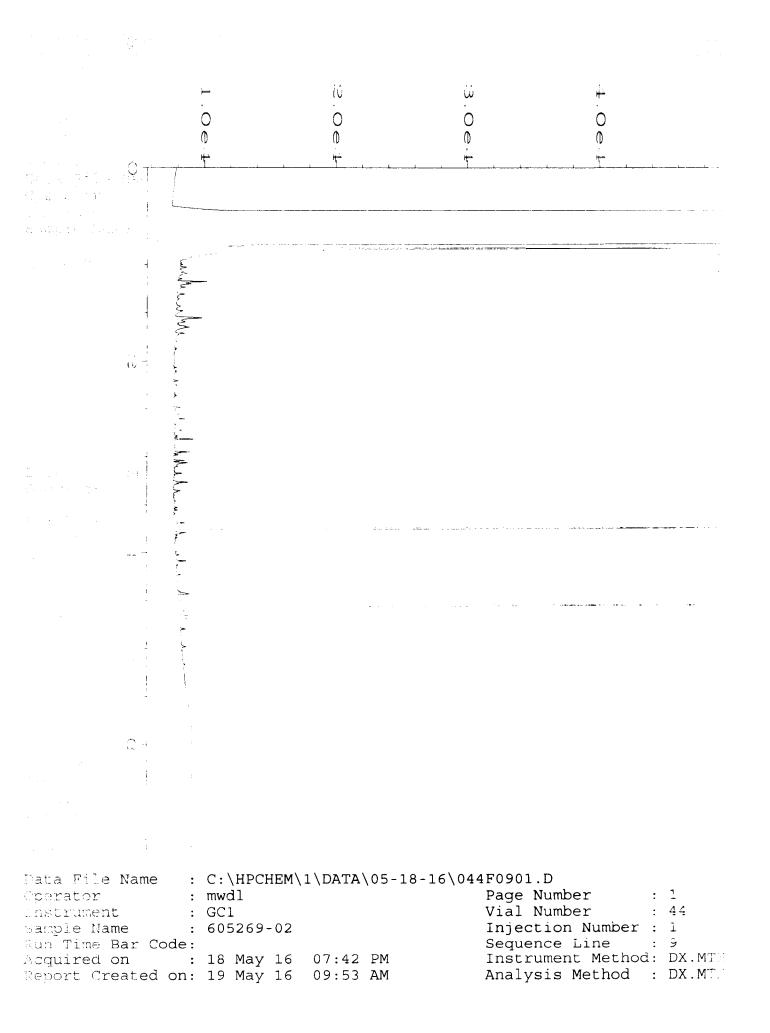
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Send Reportero <u>lim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLE CHAIN OF CUSTODY	05713/1L	TURNAROUND TIME
Company <u>SoundEarth Strategies, Inc.</u> Address <u>2811 Fairview Ave E, Suite 2000</u>	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	PO # 01-600	Standard (2 Weeks) RUSH Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS I low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

•

Samp <del>le</del> ID	Sampl <del>e</del> Location	Sample Depth	Lab ID	Date Sampled		Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA <b>8</b> 0218	DRPHVORPH · by NWTPH-Dx	PCP by EPA 8270D (Iow-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	ang Alkalinity Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Note
01mW30-20160513	OIMW30	<b>↓</b>		5/13/16	1045	Gw	6	X	Γ <b>X</b>	V		X	<b> </b>	<u> </u>	<u> </u>	+		<b></b>
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, Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	
3012 16th Avenue West	Relinquished by:			DATE TIME
Seattle, WA 98119-2029	Received by:	Kern Bartebt	SES	5/18/16 1555
Ph. (206) 285-8282	Relinquished by:	Elizapeth Rafford	F3B	5/13/16 1555
Fax (206) 283-5044	Received by:			

Friedman & Bruya, Inc. #605271

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 15, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 13, 2016 from the TOC\_01-600\_20160513 WORFDB8, F&BI 605271 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0615R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 13, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160513 WORFDB8, F&BI 605271 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
605271 -01	01MW06-20160513
605271 -02	01MW08-20160513
605271 -03	01MW04-20160513

Sample 01MW04-20160513 was sent to Aquatic Research for sulfate analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

Several 8270D surrogates failed the laboratory acceptance criteria in sample 01MW04-20160513 and the method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605271 Date Extracted: 05/16/16 Date Analyzed: 05/16/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 50-150)
01MW06-20160513 605271-01	8 <1	<1	<1	<3	<100	78
01MW08-20160513 605271-02	8 <1	<1	<1	<3	<100	81
01MW04-20160513 605271-03	8 <1	<1	<1	<3	<100	82
Method Blank 06-948 MB	<1	<1	<1	<3	<100	99

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605271 Date Extracted: 05/18/16 Date Analyzed: 05/18/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW06-20160513 605271-01	250 x	<250	104
01MW08-20160513 605271-02	360 x	<250	100
01MW04-20160513 605271-03	67 x	<250	101
Method Blank 06-992 MB	<50	<250	107

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW06-20 05/13/16 05/16/16 05/16/16 Water ug/L (ppb)	0160513	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160513 WORFDB8 605271-01 051633.D GCMS4 JS
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 103 106 103	Lower Limit: 57 63 60	Upper Limit: 121 127 133
Compounds:		Concentration ug/L (ppb)		
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroet 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	ethene ene (EDC)	<0.2 <1 <1 <5 <1 <1 <1 <1 <1 <1 <1 <1		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blan Not Applica 05/16/16 05/16/16 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160513 WORFDB8 06-967 mb 051626.D GCMS4 JS
Surrogates:		% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane	-d4	101	57	121
Toluene-d8		106	63	127
4-Bromofluorobenz	ene	102	60	133
		Concentration		
Compounds:		ug/L (ppb)		
Vinyl chloride		<0.2		
Chloroethane		<1		
1,1-Dichloroethene	1	<1		
Methylene chloride	<u>)</u>	<5		
trans-1,2-Dichloroe	ethene	<1		
1,1-Dichloroethane		<1		
cis-1,2-Dichloroeth	ene	<1		
1,2-Dichloroethane	(EDC)	<1		
1,1,1-Trichloroetha	ine	<1		
Trichloroethen e		<1		
Tetrachloroethene		<1		

## ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix:	01MW04-20 05/13/16 05/17/16 05/20/16 Water	0160513	Client: Project: Lab ID: Data File: Instrument:	SoundEarth Strategies TOC_01-600_20160513 WORFDB8 605271-03 052015.D GCMS10
Units:	ug/L (ppb)		Operator:	VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 57 34 vo 86	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		<0.2		

## ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicable 05/17/16 05/18/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160513 WORFDB8 06-982 mb 051806.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recovery 53 33 vo ol 79	Lower 7: Limit: 50 50 50 50	Upper Limit: 150 150 150
Compounds:	Concentratio ug/L (ppb)		
Pentachlorophenol	<0.2		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605271

#### **QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER** SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, **XYLENES, AND TPH AS GASOLINE** USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605266-01 (Duplicate)							
	Reporting	Sample	Duplicate	RPD			
Analyte	Units	Result	Result	(Limit 20)			
Benzene	ug/L (ppb)	<1	<1	nm			
Toluene	ug/L (ppb)	<1	<1	nm			
Ethylbenzene	ug/L (ppb)	<1	<1	nm			
Xylenes	ug/L (ppb)	<3	<3	nm			
Gasoline	ug/L (ppb)	<100	<100	nm			

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/L (ppb)	50	100	65-118
Toluene	ug/L (ppb)	50	101	72-122
Ethylbenzene	ug/L (ppb)	50	102	73-126
Xylenes	ug/L (ppb)	150	99	74-118
Gasoline	ug/L (ppb)	1,000	94	69-134

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605271

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	105	104	63-142	1

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605271

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 605227-02 (Matrix Spike)

	Reporting	Spike	Sample	Percent Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
Vinyl chloride	ug/L (ppb)	50	< 0.2	95	36-166
Chloroethane	ug/L (ppb)	50	<1	111	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	93	60-136
Methylene chloride	ug/L (ppb)	50	<5	105	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	96	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	98	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	101	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	92	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	96	60-146
Trichloroethene	ug/L (ppb)	50	<1	97	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	89	10-226

	<b>r</b>		Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Vinyl chloride	ug/L (ppb)	50	98	102	50-154	4
Chloroethane	ug/L (ppb)	50	114	119	58-146	4
1,1-Dichloroethene	ug/L (ppb)	50	98	102	67-136	4
Methylene chloride	ug/L (ppb)	50	120	124	39-148	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	103	108	68-128	5
1,1-Dichloroethane	ug/L (ppb)	50	103	106	79-121	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	107	112	80-123	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	95	99	73-132	4
1,1,1-Trichloroethane	ug/L (ppb)	50	102	106	83-130	4
Trichloroethene	ug/L (ppb)	50	99	104	80-120	5
Tetrachloroethene	ug/L (ppb)	50	94	95	76-121	1

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/13/16 Project: TOC\_01-600\_20160513 WORFDB8, F&BI 605271

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

Laboratory couct. Laborator	5	I -	Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	56	62	56-114	10

#### ENVIRONMENTAL CHEMISTS

#### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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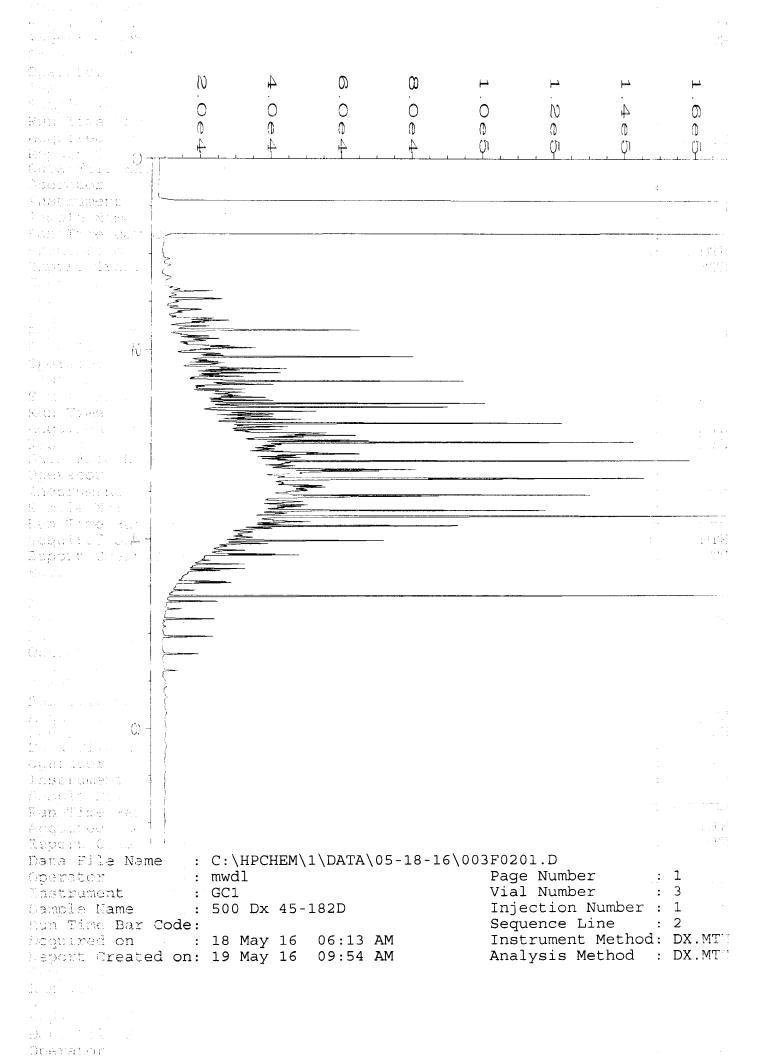


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#### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-70	PAC	E 1					
REPORT DATE:	06/14/16							
DATE SAMPLED:	05/13/16	DATE RECEIVED:	05/17/16					
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER								
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605271								

#### CASE NARRATIVE

One water sample was received by the laboratory in good condition and analyzed according to the chain of custody. No other difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	SULFATE
SAMPLE ID	(mg/L)
01MW04-20160513	1.70



#### **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-70	PA	GE 2					
REPORT DATE:	06/14/16							
DATE SAMPLED:	05/13/16	DATE RECEIVED:	05/17/16					
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER								
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605271								

#### QA/QC DATA

QC PARAMETER	SULFATE
	(mg/L)
METHOD	SM184500SO4E
DATE ANALYZED	06/01/16
DETECTION LIMIT	1.00
DUPLICATE	
SAMPLE ID	BATCH
ORIGINAL	2.43
DUPLICATE	2.40
RPD	1.27%
SPIKE SAMPLE	
SAMPLE ID	BATCH
ORIGINAL	2.43
SPIKED SAMPLE	12.4
SPIKE ADDED	10.0
% RECOVERY	100.08%
QC CHECK	
FOUND	9.88
TRUE	10.0
% RECOVERY	98.80%
BLANK	<1.00

RPD = RELATIVE PERCENT DIFFERENCE.

NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Mamien Hademsh"

Damien Gadomski Project Manager

# FBIOH -70 SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report <u>ToMichael Erdahl</u>			SUBCO	NTRAC	TER	A <sub>1.</sub> 7	Sevi	eĥ.				Page # of					
Company       Friedman and Bruya, Inc.         Address       3012 16th Ave W					CT NAN	Æ/NO	).	· .			⊃# '7Y.		( a :	Standard (2 Weeks)			
City, State, ZIP <u>Seattle, WA 98119</u> Phone # <u>(206) 285-8282</u> Fax # <u>(206) 283-5044</u>			REMAR	KS Please	Email	Resu	lts		······				Dispos Return	e after samp	E DISPC 30 days les 1 instruct		
	····							···	ANAI	YSE	SREG	UES	TED			l	<u> </u>
Sample ID	Lab ID	Date Sampled	Time . Sampled	Matrix	# of jars	Dioxins/Furans	EPH	ЧРН	Nitrate	Sulfate	Alkalinity	TOC-9060M				]	Notes
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	SAMPLE CHAIN OF CUSTODY	NE orlin	Jer
Send Report To Brown, CC: Jessica Brown, Courtney	SAMPLERS (signature)	ME 05/13	
Schaumberg, Jonathan Loeffler, Jennifer Cyr	PROJECT NAME/NO.		Day
CompanySoundEarth Strategies, Inc.		PO #	RUSH
Address 2811 Fairview Ave E. Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days
	<sup>1</sup> low level detection limit of 0.219 ug/L for PCP.		Return samples Will call with instructions

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Sample ID	Sampl <del>e</del> Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NMTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (Iow-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity		Notes
Simuo -20120513		15.5	01 A.F	5/13/14	1123	4,0	6	$ \times $	$\times$	X		X					
BIMW08-20160513		17	12 A.	P .	1240	Ī	4	X	$\times$	X							
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	Logan Schmacher	SES	5/13/4	1555
Seattle, WA 98119-2029	Received by: Guyeth Hyred	Elizabeth Radford	Ftz	5/13/11	1555
Ph. (206) 285-8282	Relinquished by			1 pu	
Fax (206) 283-5044	Received by:		Samples receive	ed at <u>3</u>	С

Friedman & Bruya, Inc. #605285

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 15, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 16, 2016 from the TOC\_01-600\_20160516 WORFDB8, F&BI 605285 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0615R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 16, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160516 WORFDB8, F&BI 605285 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
605285 -01	01MW59-20160516
605285 -02	01MW20-20160516
605285 -03	01MW18-20160516
605285 -04	01MW19-20160516
605285 -05	FD03-20160516

Sample 01MW59-20160516 was sent to Aquatic Research for sulfate analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/16/16 Project: TOC\_01-600\_20160516 WORFDB8, F&BI 605285 Date Extracted: 05/17/16 Date Analyzed: 05/17/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW59-20160516 605285-01	<1	<1	<1	<3	<100	93
01MW20-20160516 605285-02	2.2	3.8	47	25	750	102
01MW18-20160516 605285-03	73	27	160	510	4,700	115
01MW19-20160516 605285-04 1/40	2,600	110	820	920	16,000	94
FD03-20160516 605285-05 1/40	2,500	110	770	860	14,000	99
Method Blank 06-950 MB	<1	<1	<1	<3	<100	92

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/16/16 Project: TOC\_01-600\_20160516 WORFDB8, F&BI 605285 Date Extracted: 05/17/16 Date Analyzed: 05/17/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW59-20160516 605285-01	980 x	430 x	101
01MW20-20160516 605285-02	600 x	<250	103
01MW18-20160516 605285-03	2,500 x	<250	104
01MW19-20160516 605285-04	2,900 x	280 x	98
FD03-20160516 605285-05	3,000 x	270 x	95
Method Blank 06-994 MB	<50	<250	98

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW59-20 05/16/16 05/17/16 05/17/16 Water ug/L (ppb)	0160516	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160516 WORFDB8 605285-01 051720.D GCMS9 JS
Surrogates: 1,2-Dichloroethane	44	% Recovery: 104	Lower Limit: 85	Upper Limit: 117
Toluene-d8	-04	104	85 91	108
4-Bromofluorobenz	ana	98	76	126
4 Diomonuorobenz	ene		10	120
Compounds:		Concentration ug/L (ppb)		
Vinyl chloride		<0.2		
Chloroethane		<1		
1,1-Dichloroethene		<1		
Methylene chloride		<5		
trans-1,2-Dichloroe	thene	<1		
1,1-Dichloroethane		<1		
cis-1,2-Dichloroeth	ene	<1		
1,2-Dichloroethane	(EDC)	<1		
1,1,1-Trichloroetha	ne	<1		
Trichloroethene		<1		
Tetrachloroethene		<1		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW19-20 05/16/16 05/17/16 05/17/16 Water ug/L (ppb)	0160516	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160516 WORFDB8 605285-04 051721.D GCMS9 JS
Surrogates:		% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane	-d4	98	85	117
Toluene-d8	-u-1	101	91	108
4-Bromofluorobenz	ene	101	76	126
1 Di omonuoi obenz	ene	100	10	120
		Concentration		
Compounds:		ug/L (ppb)		
Vinyl chloride		<0.2		
Chloroethane		<1		
1,1-Dichloroethene		<1		
Methylene chloride	1	<5		
trans-1,2-Dichloroe	ethene	<1		
1,1-Dichloroethane		<1		
cis-1,2-Dichloroethe	ene	<1		
1,2-Dichloroethane	(EDC)	<1		
1,1,1-Trichloroetha	ne	<1		
Trichloroethene		<1		
Tetrachloroethene		<1		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	FD03-20160 05/16/16 05/17/16 05/17/16 Water ug/L (ppb)	0516	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160516 WORFDB8 605285-05 051722.D GCMS9 JS
Surrogates: 1,2-Dichloroethane Toluene-d8		% Recovery: 103 102	Lower Limit: 85 91 70	Upper Limit: 117 108
4-Bromofluorobenz Compounds:	ene	99 Concentration ug/L (ppb)	76	126
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroeth 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	e ethene ene (EDC)	<0.2 <1 <1 <5 <1 <1 <1 <1 <1 <1 <1 <1 <1		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 05/17/16 05/17/16 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160516 WORFDB8 06-969 mb 051707.D GCMS9 JS
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 107 100 99	Lower Limit: 85 91 76	Upper Limit: 117 108 126
Compounds:		Concentration ug/L (ppb)		
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroet 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	e ethene ene (EDC)	<0.2 <1 <1 <5 <1 <1 <1 <1 <1 <1 <1 <1 <1		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/16/16 Project: TOC\_01-600\_20160516 WORFDB8, F&BI 605285

#### **QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER** SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, **XYLENES, AND TPH AS GASOLINE** USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605283-01 (Duplicate)								
	Reporting	Sample	Duplicate	RPD				
Analyte	Units	Result	Result	(Limit 20)				
Benzene	ug/L (ppb)	<1	<1	nm				
Toluene	ug/L (ppb)	<1	<1	nm				
Ethylbenzene	ug/L (ppb)	<1	<1	nm				
Xylenes	ug/L (ppb)	<3	<3	nm				
Gasoline	ug/L (ppb)	<100	<100	nm				

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Benzene	ug/L (ppb)	50	95	65-118		
Toluene	ug/L (ppb)	50	96	72-122		
Ethylbenzene	ug/L (ppb)	50	97	73-126		
Xylenes	ug/L (ppb)	150	95	74-118		
Gasoline	ug/L (ppb)	1,000	94	69-134		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/16/16 Project: TOC\_01-600\_20160516 WORFDB8, F&BI 605285

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	101	101	63-142	0

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/16/16 Project: TOC\_01-600\_20160516 WORFDB8, F&BI 605285

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 605258-01 (Matrix Spike)

5	1 /				
				Percent	
	Reporting	Spike	Sample	Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
Vinyl chloride	ug/L (ppb)	50	< 0.2	113	61-139
Chloroethane	ug/L (ppb)	50	<1	120	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	110	71-123
Methylene chloride	ug/L (ppb)	50	<5	107	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	108	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	104	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	104	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	105	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	113	75-121
Trichloroethene	ug/L (ppb)	50	<1	97	75-109
Tetrachloroethene	ug/L (ppb)	50	<1	96	72-113

	I I		Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Vinyl chloride	ug/L (ppb)	50	117	117	70-119	0
Chloroethane	ug/L (ppb)	50	124	123	66-149	1
1,1-Dichloroethene	ug/L (ppb)	50	111	112	75-119	1
Methylene chloride	ug/L (ppb)	50	106	106	63-132	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	106	106	76-118	0
1,1-Dichloroethane	ug/L (ppb)	50	103	103	80-116	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	101	80-112	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	108	107	79-109	1
1,1,1-Trichloroethane	ug/L (ppb)	50	116	116	80-116	0
Trichlorœthene	ug/L (ppb)	50	96	97	77-108	1
Tetrachloroethene	ug/L (ppb)	50	94	93	78-109	1

#### ENVIRONMENTAL CHEMISTS

#### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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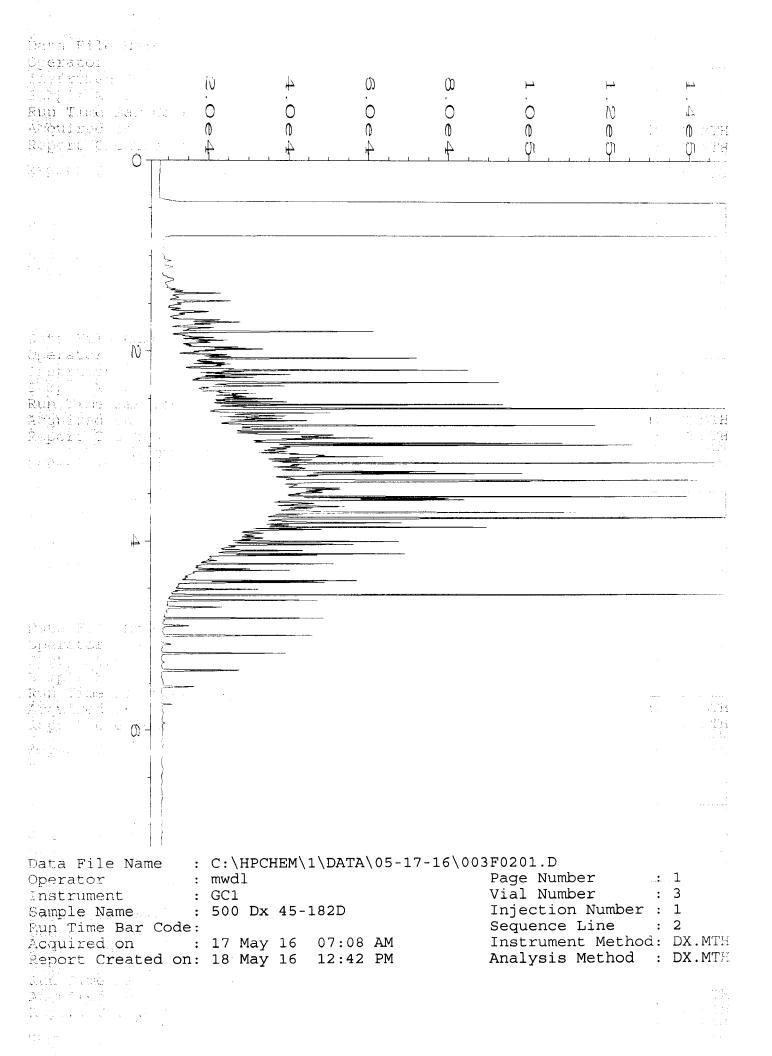
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## IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-71	PA	GE 1
REPORT DATE:	06/14/16		
DATE SAMPLED:	05/16/16	DATE RECEIVED:	05/17/16
FINAL REPORT, LABORATORY ANALYSIS	S OF SELECTED PARAMETE	RS ON WATER	
SAMPLES FROM FRIEDMAN & BRUYA, IN	C. / PROJECT NO. 605285		

#### CASE NARRATIVE

One water sample was received by the laboratory in good condition and analyzed according to the chain of custody. No other difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	SULFATE
SAMPLE ID	(mg/L)
01MW59-20160516	4.13



## **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-71	PAGE 2			
REPORT DATE:	06/14/16				
DATE SAMPLED:	05/16/16	DATE RECEIVED:	05/17/16		
FINAL REPORT, LABORATORY ANALYSI	S OF SELECTED PARAMETH	ERS ON WATER			
SAMPLES FROM FRIEDMAN & BRUYA, I	NC. / PROJECT NO. 605285				

#### QA/QC DATA

OC PARAMETER	SULFATE
QUITINIAMETER	~
METHOD	(mg/L) SM184500SO4E
DATE ANALYZED	06/14/16
DETECTION LIMIT	1.00
DUPLICATE	
SAMPLE ID	BATCH
ORIGINAL	5.20
DUPLICATE	5.30
RPD	1.91%
SPIKE SAMPLE	
SAMPLE ID	BATCH
ORIGINAL	5.20
SPIKED SAMPLE	15.3
SPIKE ADDED	10.0
% RECOVERY	100.54%
QC CHECK	
FOUND	9.79
TRUE	10.0
% RECOVERY	97.90%
BLANK	<1.00

RPD = RELATIVE PERCENT DIFFERENCE.

NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Mamien Hodomsh"

Damien Gadomski Project Manager

FB1014-7

Send Report To Michael Erdahl			SUBC	ONTRAC	TER	Aq.	hse.	nich				Page # of						
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City, State, ZIP <u>Seattle, WA 98119</u> Phone # (206) 285-8282 Fax # (206) 283-5044			REMA		_							SAMPLE DISPOSAL						
				Please	Emai	Resu	lts	<u> </u>				<ul> <li>Return samples</li> <li>Will call with instructions</li> </ul>						
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Sample ID	Lab ID	Date Sampled	Time Sampled	Matri	ix # of jars	Dioxins/Furans	EPH	ЧРН	Nitrate	Sulfate	Alkalinity	TOC-9060M					Notes	· · ·
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Seattle, WA 98119-2029	Receivert	x///	<u> </u>	—			1 1	1/1						uya.	<u> </u>	17/16	0815	
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625285	SAMPLERS (signature)		Page #
Send Report To <u>Tim Brown, cc; Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	Satt		TURNAROUND TIME
Company SoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	RUSH
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS	EIM Y / N	SAMPLE DISPOSAL Sample Dispose after 30 days
	<sup>1</sup> low level detection limit of 0.219 ug/L for PCP.		Return samples Will call with instructions

Sample ID	Sampl <del>e</del> Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-GX	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (Io <del>w level</del> detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	20 20	TKN, Sulfide, and Fe 2+	Notes
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by	JONATHAN LOEFFLER	SOUNDEARTH	5/16/16	1702
Seattle, WA 98119-2029	Received by:	VINH-	FRI	5/16/14	1700
Ph. (206) 285-8282	Relinquished by:	V ~			11 - 0
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605315

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 15, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 17, 2016 from the TOC\_01-600\_20160517 WORFDB8, F&BI 605315 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0615R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 17, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160517 WORFDB8, F&BI 605315 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
605315 -01	01MW69-20160517
605315 -02	01MW27-20160517
605315 -03	FD01-20160517

Sample 01MW69-20160517 was sent to Aquatic Research for sulfate, nitrate, nitrite, total phosphorus, hardness, alkalinity, TKN, and sulfide analyses and sample 01MW27-20160517 was sent to AR for sulfate analysis. In addition, sample 01MW69-20160517 was sent to Amtest for ferrous iron analysis. The report from Amtest is enclosed. The report from Aquatic Research will be forwarded upon receipt.

Several 8270D surrogates failed the laboratory acceptance criteria in the pentachlorophenol and the method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/17/16 Project: TOC\_01-600\_20160517 WORFDB8, F&BI 605315 Date Extracted: 05/18/16 Date Analyzed: 05/18/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW69-20160517 605315-01	69	4.1	23	100	1,100	106
01MW27-20160517 605315-02	41	<1	1.7	<3	170	95
FD01-20160517 605315-03	41	<1	2.4	<3	180	93
Method Blank <sup>06-951 MB</sup>	<1	<1	<1	<3	<100	88

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/17/16 Project: TOC\_01-600\_20160517 WORFDB8, F&BI 605315 Date Extracted: 05/19/16 Date Analyzed: 05/19/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	Surrogate <u>(% Recovery)</u> (Limit 47-140)
01MW69-20160517 605315-01 1/1.2	800 x	<300	118
01MW27-20160517 605315-02	1,200 x	<250	111
FD01-20160517 605315-03	1,400 x	<250	122
Method Blank 06-1014 MB	<50	<250	98

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW69-20160517 05/17/16 05/24/16 05/24/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160517 WORFDB8 605315-01 052407.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recovery: 69 47 vo	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:	Concentration ug/L (ppb)		
Pentachlorophenol	<0.2		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW27-20160517 05/17/16 05/24/16 05/24/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160517 WORFDB8 605315-02 052408.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recovery: 65 44 vo ol 128	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:	Concentration ug/L (ppb)		
Pentachlorophenol	<0.2		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	FD01-20160517 05/17/16 05/24/16 05/24/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160517 WORFDB8 605315-03 052409.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recovery 63 45 vo ol 126	Lower y: Limit: 50 50 50 50	Upper Limit: 150 150 150
Compounds:	Concentrati ug/L (ppb)		
Pentachlorophenol	<0.2		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicable 05/24/16 05/24/16 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160517 WORFDB8 06-1047 mb 052406.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recovery: 62 47 vo ol 92	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:	Concentration ug/L (ppb)		
Pentachlorophenol	<0.2		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Manganese

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	01MW69-20160517 05/17/16 05/23/16 05/24/16 Water	Client: Project: Lab ID: Data File: Instrument:	SoundEarth Strategies TOC_01-600_20160517 WORFDB8 605315-01 605315-01.133 ICPMS1
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	3,290		

2,240

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	NA	Project:	TOC_01-600_20160517 WORFDB8
Date Extracted:	05/23/16	Lab ID:	I6-325 mb
Date Analyzed:	05/23/16	Data File:	I6-325 mb.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	<50		
Manganese	<1		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/17/16 Project: TOC\_01-600\_20160517 WORFDB8, F&BI 605315

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605307-04 (Duplicate)						
	Reporting	Sample	Duplicate	RPD		
Analyte	Units	Result	Result	(Limit 20)		
Benzene	ug/L (ppb)	<1	1.0	nm		
Toluene	ug/L (ppb)	5.9	5.6	5		
Ethylbenzene	ug/L (ppb)	26	25	5		
Xylenes	ug/L (ppb)	170	160	5		
Gasoline	ug/L (ppb)	720	690	5		

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Benzene	ug/L (ppb)	50	96	65-118		
Toluene	ug/L (ppb)	50	98	72-122		
Ethylbenzene	ug/L (ppb)	50	99	73-126		
Xylenes	ug/L (ppb)	150	97	74-118		
Gasoline	ug/L (ppb)	1,000	96	69-134		

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/17/16 Project: TOC\_01-600\_20160517 WORFDB8, F&BI 605315

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	108	100	61-133	8

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/17/16 Project: TOC\_01-600\_20160517 WORFDB8, F&BI 605315

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

Laboratory couct Laborator	J	I.	Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	74	76	56-114	3

### ENVIRONMENTAL CHEMISTS

### Date of Report: 06/15/16 Date Received: 05/17/16 Project: TOC\_01-600\_20160517 WORFDB8, F&BI 605315

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code	e: 605188-01 x	:10 (Matri	x Spike)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron Manganese	ug/L (ppb) ug/L (ppb)	100 20	766 9,890	152 b 274 b	108 b 223 b	70-130 70-130	34 b 21 b

Laboratory Code: 605188-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	103	85-115
Manganese	ug/L (ppb)	20	106	85-115

### ENVIRONMENTAL CHEMISTS

## **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

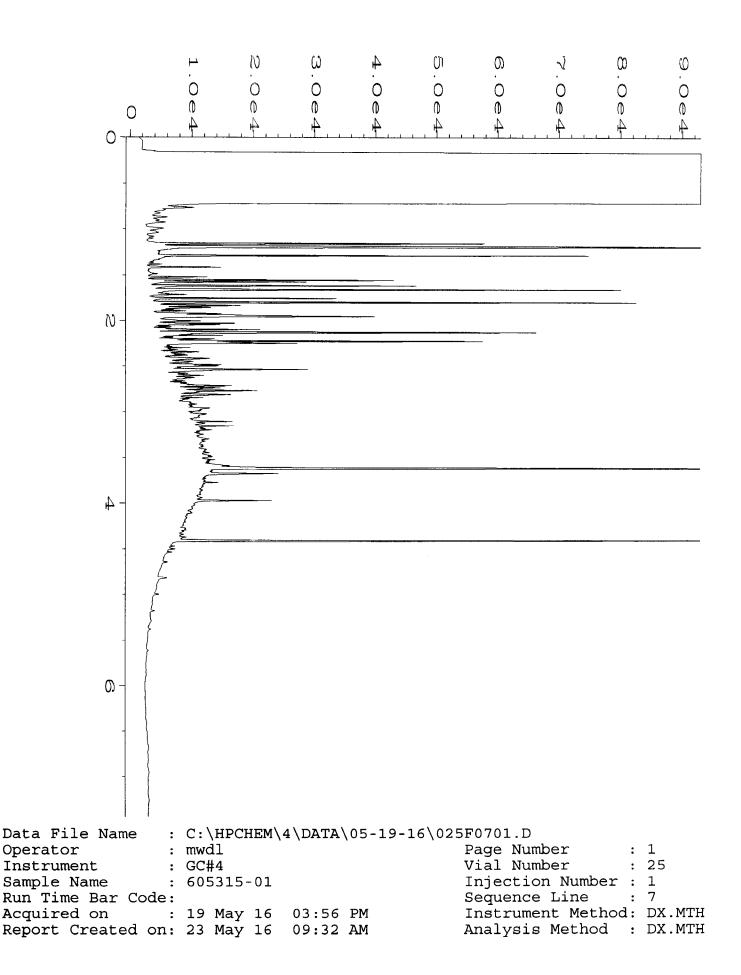
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

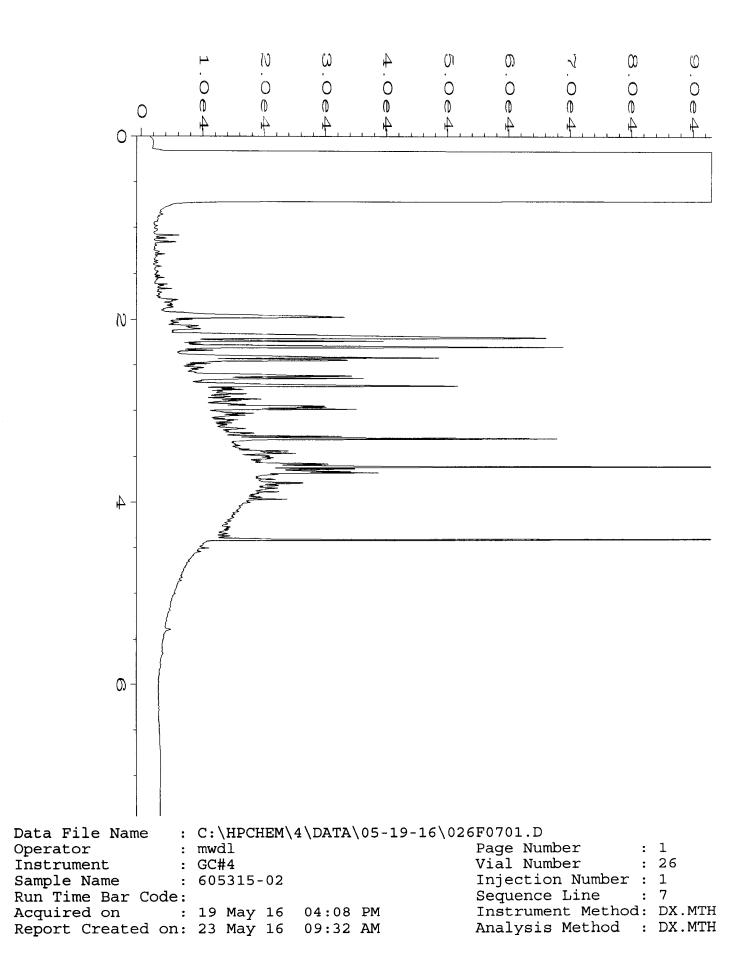
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

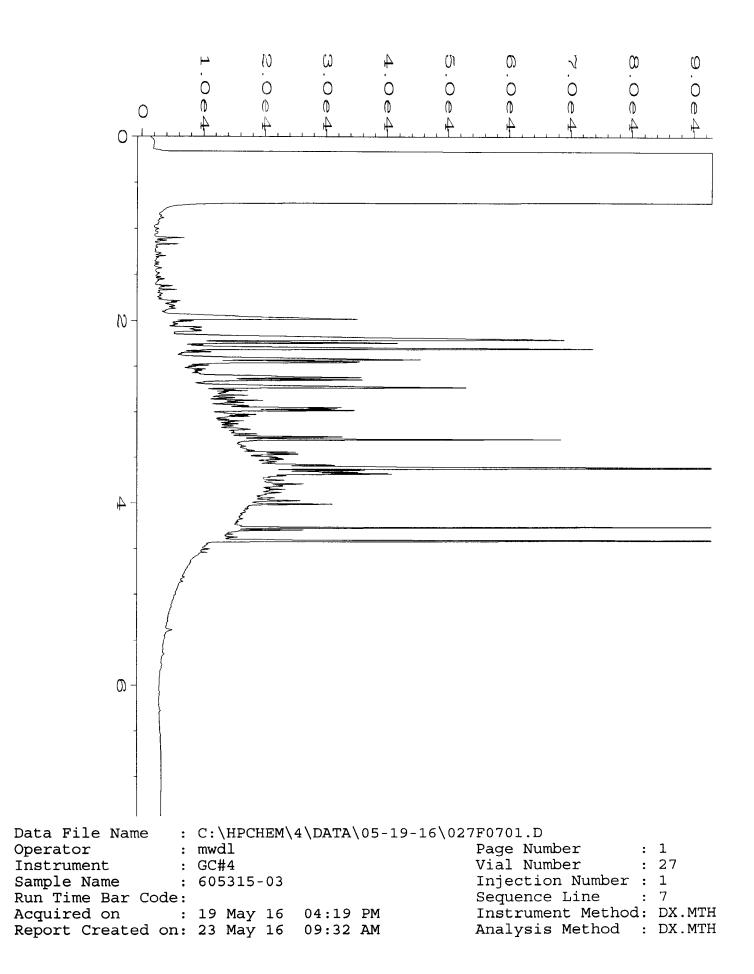
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

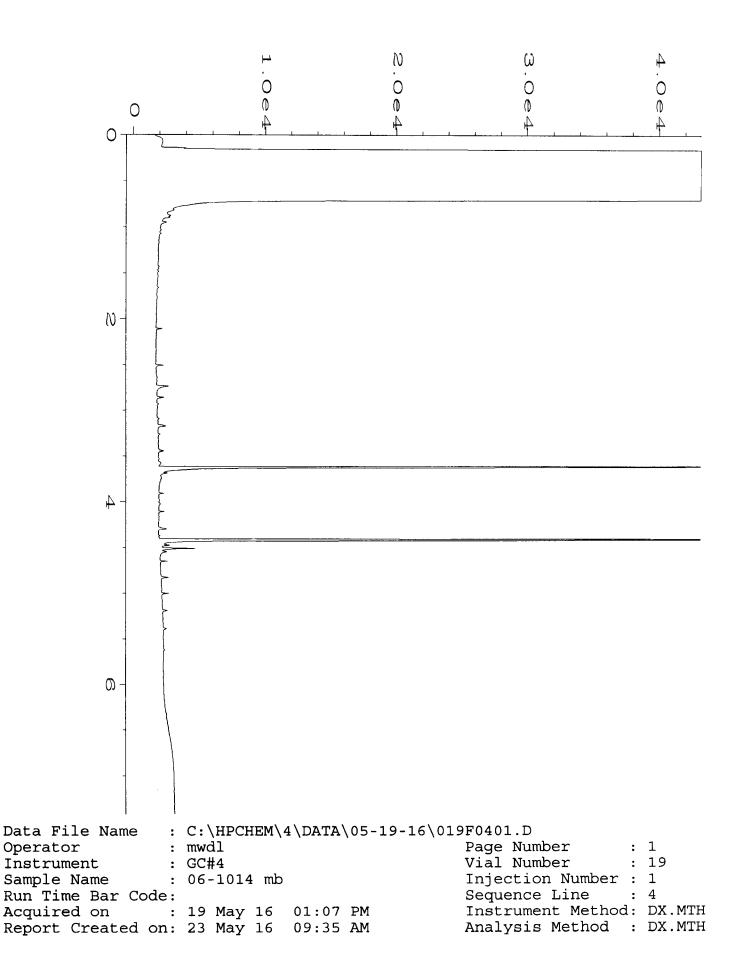
vo - The value reported fell outside the control limits established for this analyte.

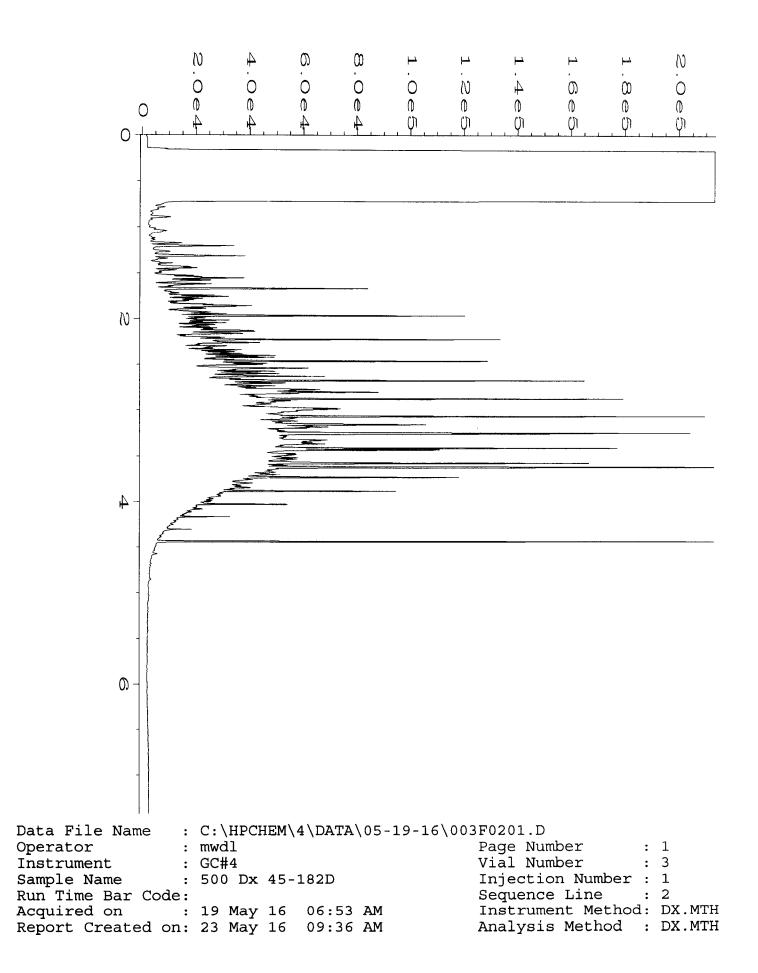
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.













Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

May 19 2016 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
01MW69-20160517	Water	16-A008950	MET

Your sample was received on Wednesday, May 18, 2016. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young Laboratory Manager

Project #: 605315 PO Number: D-983

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

#### **ANALYSIS REPORT**

Date Received: 05/18/16 Date Reported: 5/19/16

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project #: 605315 PO Number: D-983 All results reported on an as received basis.

AMTEST Identification Number	16-A008950
Client Identification	01MW69-20160517
Sampling Date	05/17/16, 11:27

#### Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Ferrous Iron	4.56	mg/l		0.01	SM 3500Fe D	MJ	05/18/16

ron Aaron W. Young Laboratory Manager

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



#### QC Summary for sample number: 16-A008950

#### **MATRIX SPIKES**

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
16-A008950	Ferrous Iron	mg/l	4.56	14.2	10.0	96.40 %
16-A008950	Ferrous Iron	mg/l	4.56	14.1	10.0	95.40 %
MATRIX SP	PIKE DUPLICATES					
SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE		RPD
Spike	Ferrous Iron	mg/l	14.2	14.1		0.71
STANDARD	D REFERENCE MATERIAL	_S				
ANALYTE		UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Ferrous Iron		mg/l	0.50	0.50		100. %
BLANKS						
ANALYTE		UNITS	RESULT			
Ferrous Iron		mg/l	< 0.01			

## SUBCONTRACT SAMPLE CHAIN OF CUSTODY

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Send Report To Michael Erdahl				SUBCONTRACTER Antest								Page # of TURNAROUND TIME						
				PROJE	ECT 1	NAME/NO.					PO#		Standard (2 Weeks)					
CompanyFriedma	n and Bruya	, Inc.		605315 D-9				202			□ RUSH Rush charges authorized by:							
Address 3012 16th Ave W				ia.		9035				<u>ッ</u>	185							
City, State, ZIPSeattle, WA 98119					RKS									SAMPLE DISPOSAL			SAL	
Phone #(206) 285-8282 Fax #(206) 283-5044					Ple	ase Email	Res	ults						🗆 Ret	urn sa	ampl		ions
										ANA	LYSES	REQU	JESI	ED				
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample 7	Гуре	# of containers	Total Fe	Hardness	Sulfate	Nitrate	Ferruus fran Nitrito	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses	]	Notes
01MW69-20160517	8950	5/17/4	1127	wate	~	l					X							
	_																	
Enindra P Davis La		CIONATI		<u> </u>				4.2.61										
Friedman & Bruya, Inc. 3012 16th Avenue West	Relinquished	SIGNATU Y		I	Micha	PRIN ael Erdahl	<u>1 N</u>	AIVL	<u>י</u>		Frie	<u>CON</u> dman					DATE ط//8	TIME 0775 Am
Seattle, WA 98119-2029	Received by:	en			Fed		T=(	9.8									8/10	1020
Ph. (206) 285-8282	Relinquished b	by:																
Fax (206) 283-5044	Received by:												×					

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605315		E 05/17/1	6 Do3/
Send Report To <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (signurure)		Page # of ///AT
Company SoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	XStandard (2 Weeks) RUSH
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS <sup>1</sup> low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Sample ID	Sampl <del>e</del> Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (Io <del>w level</del> detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01MW69-20160517			of K	5/17/16	1127	H <sub>2</sub> O	11	$\star$	$\succ$	$\times$	$\times$		$\star$		X	X	X	
01MWZ7 - 20160517	OIMW27		or F	5/17/16	1314	H_O	6	$\boldsymbol{\times}$	$\succ$	$\succ$	×		X					
FD01-20160517			03E	5/17/16	1344	H2O	5	X	×	X	$\times$							
	-																	
							$c_{2}$	0										
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	JUNATHAN LOEFFLER	SOUNDEARTH	5/17/16	1811
Seattle, WA 98119-2029	Received by:	Jon Shiman	FBET	1	6
Ph. (206) 285-8282	Relinquished by:	· · · · · · · · · · · · · · · · · · ·			
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605348

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 2, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 18, 2016 from the TOC\_01-600\_20160518 WORFDB8, F&BI 605348 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0602R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 18, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160518 WORFDB8, F&BI 605348 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605348 -01	B3-20160518

The 8270D surrogate phenol-d6 failed the laboratory acceptance criteria in the method blank. The surrogate is not associated with the analyte, therefore the results were acceptable.

All other quality control requirements were acceptable.

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16 Date Received: 05/18/16 Project: TOC\_01-600\_20160518 WORFDB8, F&BI 605348 Date Extracted: 05/19/16 Date Analyzed: 05/19/16

### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 50-150)
B3-20160518 605348-01 1/100	6,600	<100	<100	<300	19,000	83
Method Blank 06-999 MB	<1	<1	<1	<3	<100	93

Results Reported as ug/L (ppb)

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16 Date Received: 05/18/16 Project: TOC\_01-600\_20160518 WORFDB8, F&BI 605348 Date Extracted: 05/19/16 Date Analyzed: 05/19/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	Surrogate <u>(% Recovery)</u> (Limit 47-140)
B3-20160518 605348-01	8,100 x	1,200 x	ip
Method Blank 06-1014 MB	<50	<250	98

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	B3-2016051 05/18/16 05/24/16 05/25/16 Water ug/L (ppb)	8	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160518 WORFDB8 605348-01 1/10 052507.D GCMS10 VM
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	ol	% Recovery: 67 d 59 d 153 d	Lower Limit: 50 50 50	Upper Limit: 150 150 150
Compounds:		Concentration ug/L (ppb)		
Pentachlorophenol		21		

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Method Blank Not Applicable 05/24/16 05/24/16 Water	F I I	Client: Project: Lab ID: Data File: Instrument:	SoundEarth Strat TOC_01-600_2010 06-1047 mb 052406.D GCMS10	tegies 60518 WORFDB8
Units:	ug/L (ppb)	(	Operator:	VM	
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	47	covery: 62 7 vo 92	Lower Limit: 50 50 50	Upper Limit: 150 150 150	
Compounds:		ntration . (ppb)			
Pentachlorophenol	<	0.2			

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16 Date Received: 05/18/16 Project: TOC\_01-600\_20160518 WORFDB8, F&BI 605348

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code:	605347-02 (Duplica	ate)		
	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/L (ppb)	50	94	65-118
Toluene	ug/L (ppb)	50	96	72-122
Ethylbenzene	ug/L (ppb)	50	97	73-126
Xylenes	ug/L (ppb)	150	95	74-118
Gasoline	ug/L (ppb)	1,000	94	69-134

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16 Date Received: 05/18/16 Project: TOC\_01-600\_20160518 WORFDB8, F&BI 605348

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	108	100	61-133	8

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/02/16 Date Received: 05/18/16 Project: TOC\_01-600\_20160518 WORFDB8, F&BI 605348

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	74	76	56-114	3

#### ENVIRONMENTAL CHEMISTS

#### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

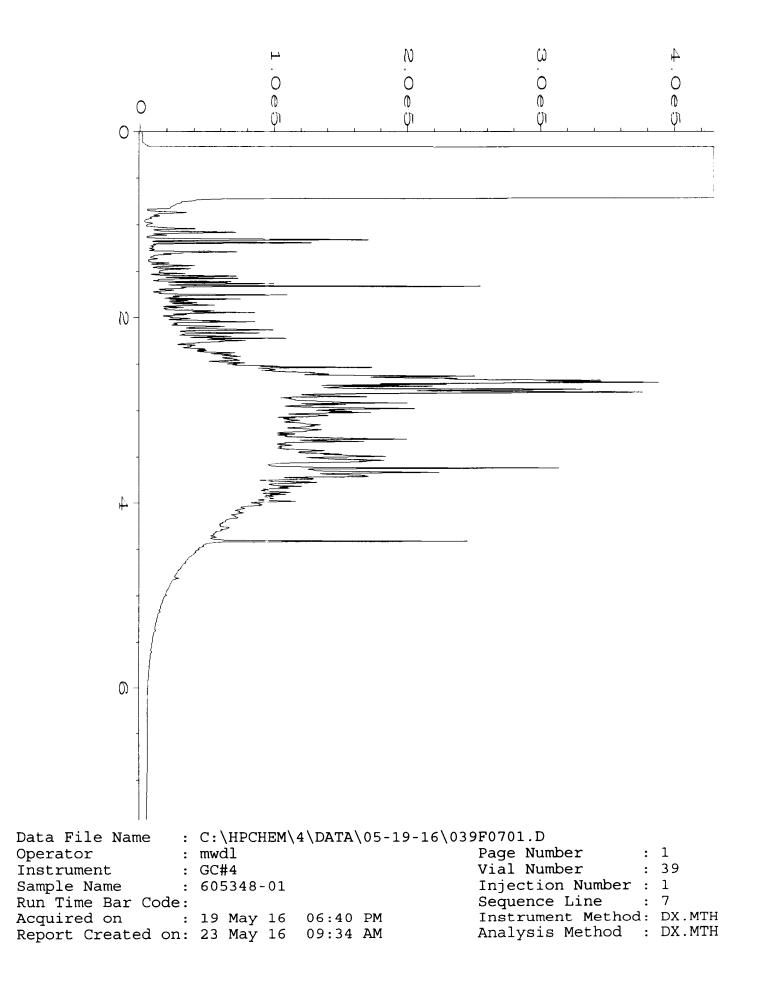
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

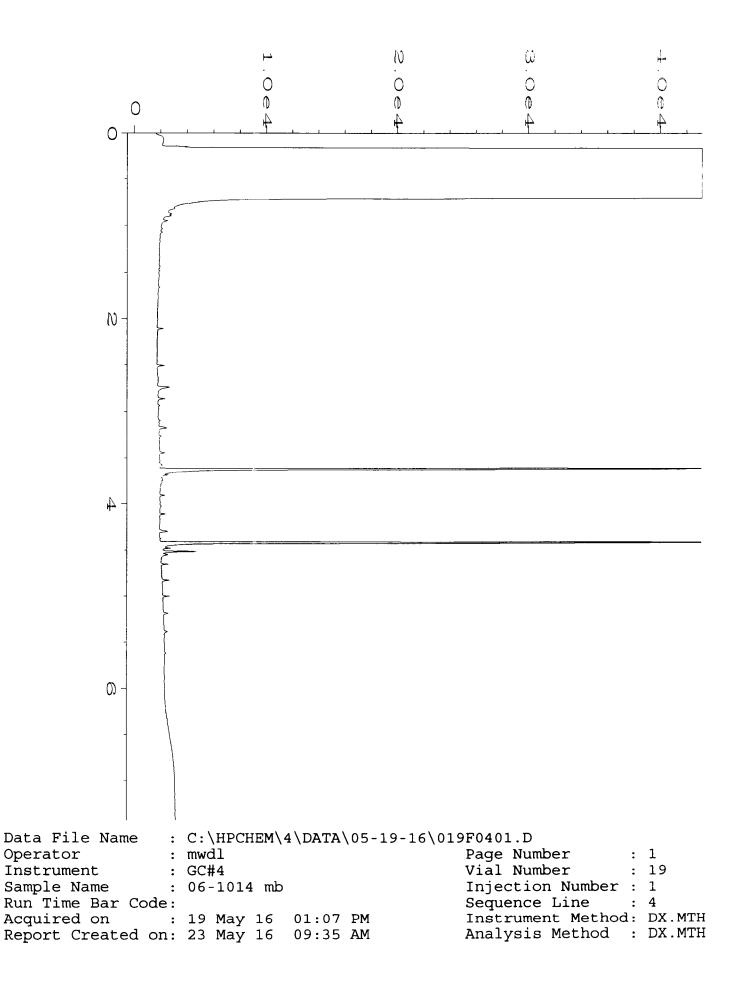
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

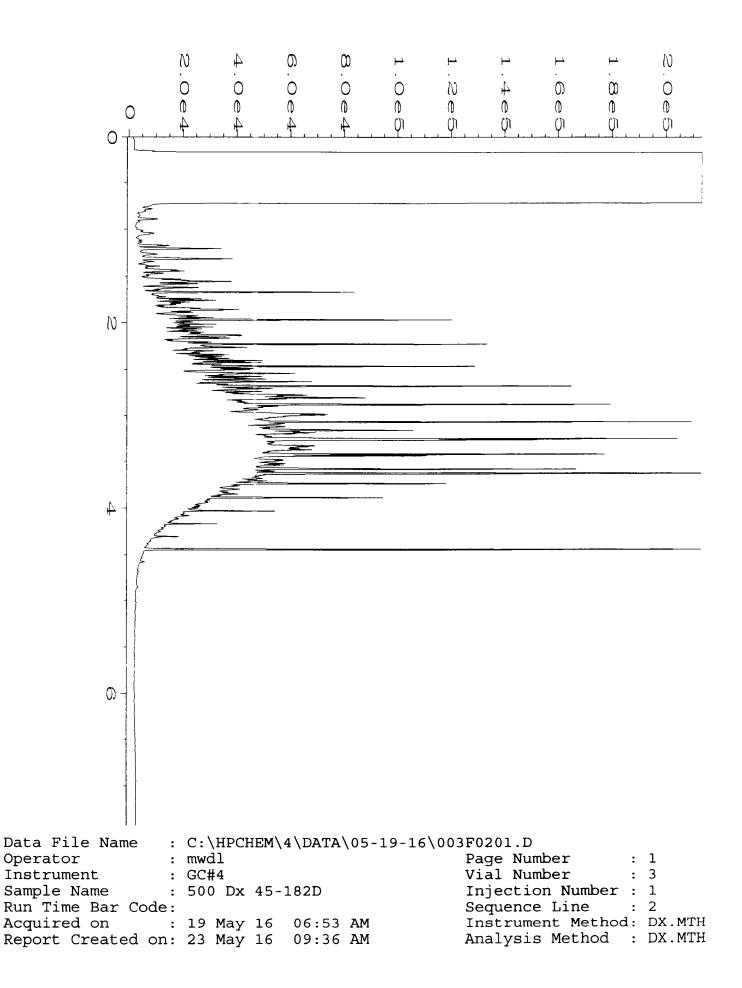
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.







Send Report To Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLE CHAIN OF CUSTODY	ME OST	18/16 Poge # or Dos TURNAROUND TIME
Company SoundEarth Strategies, Inc. Address 2811 Fairview Ave E, Suite 2000	PROJECT NAME/NO. TOC Holdings Co. Facility No. 01-600 Seattle Terminal	PO # 01-600	Xstandard (2 Weeks) RUSH Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS <sup>1</sup> low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Samp <del>le</del> ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-GX	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 82700 (low-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	N N	TKN, Sulfide, and Fe 2+	Notes
B3-20160518	B3		OIE	5/18/16	1144	H2O	5	×	$\mathbf{X}$	×	$\times$							
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by	JONATHAN LOEFFLER	SOUNDEARTH	5/18/16	120
Seattle, WA 98119-2029	Received by:	Jan Shimmun	FBET	1	4
Ph. (206) 285-8282	Relinquished by.				
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605369

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 15, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 19, 2016 from the TOC\_01-600\_20160519 WORFDB8, F&BI 605369 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0615R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 19, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160519 WORFDB8, F&BI 605369 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605369 -01	01MW03-20160519
605369 -02	01MW09-20160519
605369 -03	01MW02-20160519

Sample 01MW03-20160519 was sent to Aquatic Research for sulfate analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605369 Date Extracted: 05/20/16 Date Analyzed: 05/20/16 and 05/23/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW03-20160519 605369-01	32	2.5	1.1	5.4	420	96
01MW09-20160519 605369-02 1/5	110	6.2	33	42	890	91
01MW02-20160519 605369-03 1/100	1,600	39	130	160	5,900	88
Method Blank 06-1001 MB	<1	<1	<1	<3	<100	92

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605369 Date Extracted: 05/20/16 Date Analyzed: 05/20/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 47-140)
01MW03-20160519 605369-01	620 x	<250	111
01MW09-20160519 605369-02	690 x	<250	108
01MW02-20160519 605369-03	2,800 x	380 x	102
Method Blank 06-1038 MB	<50	<250	122

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605369

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Laboratory Code:	605375-02 (Duplica	ate)		
	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/L (ppb)	50	98	65-118
Toluene	ug/L (ppb)	50	100	72-122
Ethylbenzene	ug/L (ppb)	50	101	73-126
Xylenes	ug/L (ppb)	150	99	74-118
Gasoline	ug/L (ppb)	1,000	95	69-134

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605369

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	116	131	61-133	12

#### ENVIRONMENTAL CHEMISTS

#### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

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lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

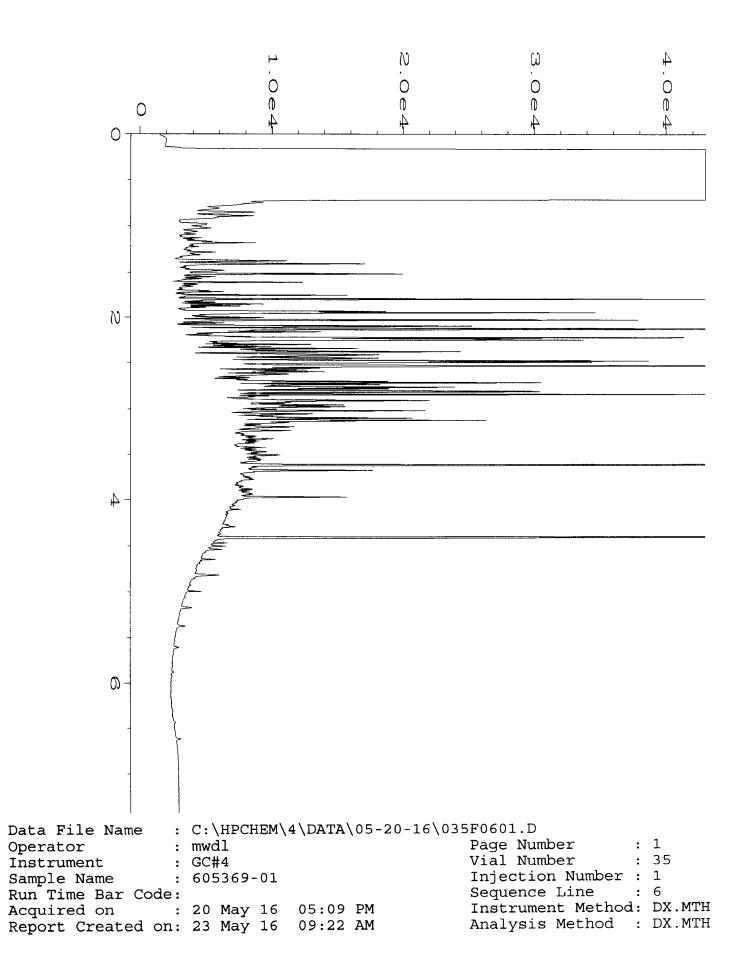
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

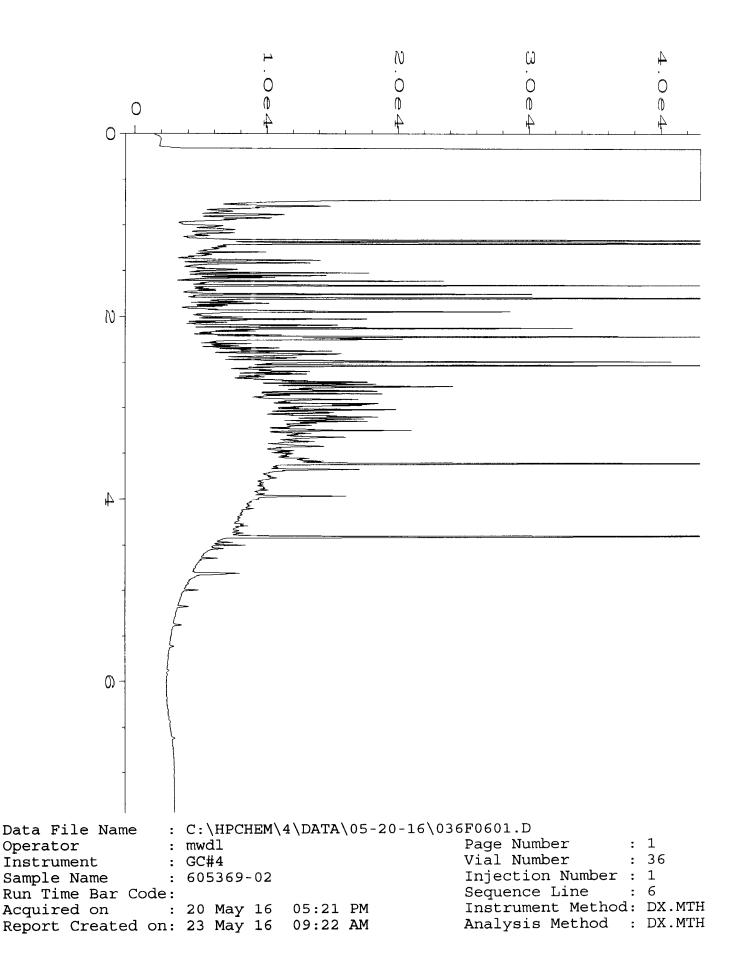
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

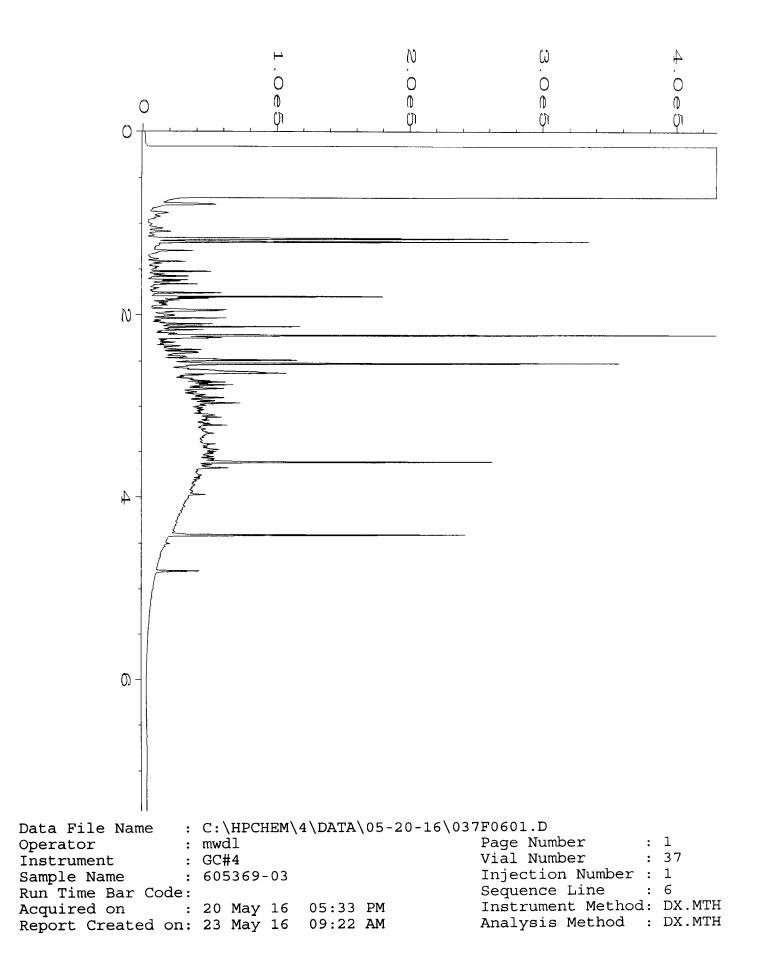
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

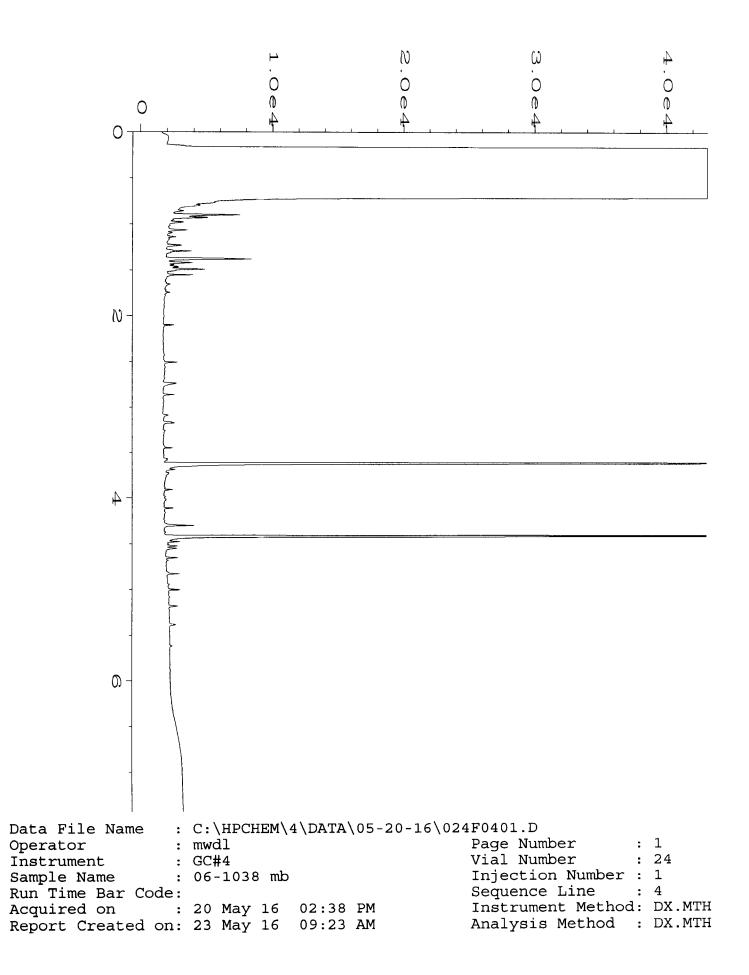
vo - The value reported fell outside the control limits established for this analyte.

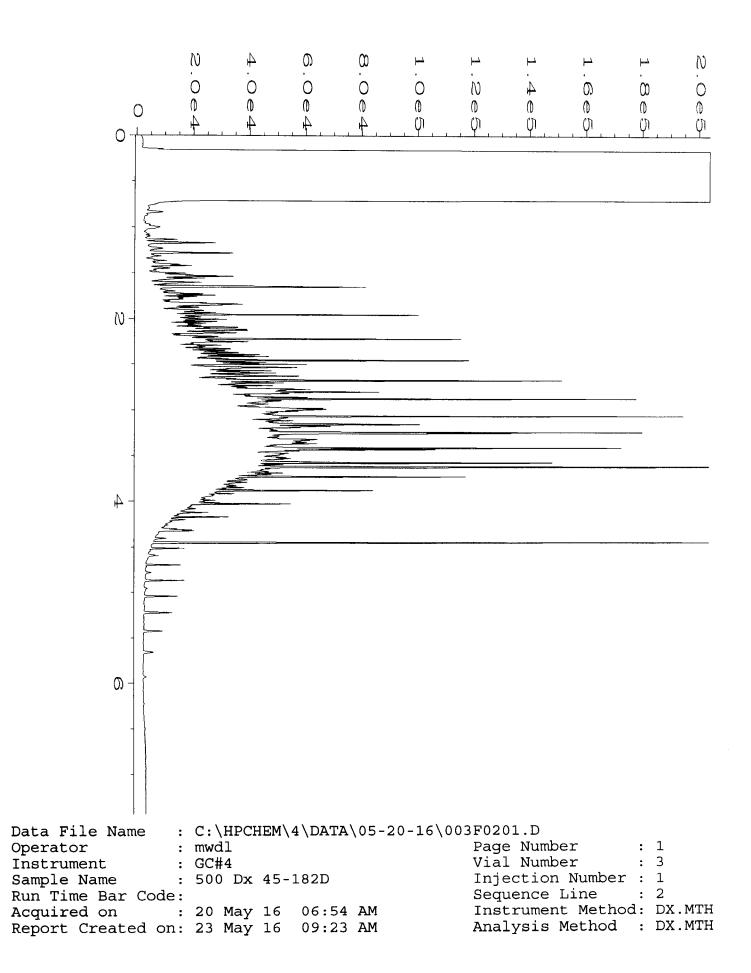
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.













### IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-76	PAGE 1							
REPORT DATE:	06/14/16								
DATE SAMPLED:	05/19/16	DATE RECEIVED:	05/20/16						
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER									
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605369									

#### CASE NARRATIVE

One water sample was received by the laboratory in good condition and analyzed according to the chain of custody. No other difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	SULFATE
SAMPLE ID	(mg/L)
01MW03-20160519	3.21



### **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-76	PAGE 2								
REPORT DATE:	06/14/16									
DATE SAMPLED:	05/19/16	DATE RECEIVED:	05/20/16							
FINAL REPORT, LABORATORY ANALYSI	FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER									
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605369										

#### QA/QC DATA

OC PARAMETER	SULFATE
QCTARAMETER	
	(mg/L)
METHOD	SM184500SO4E
DATE ANALYZED	06/14/16
DETECTION LIMIT	1.00
DUPLICATE	
SAMPLE ID	BATCH
ORIGINAL	5.20
DUPLICATE	5.30
RPD	1.91%
SPIKE SAMPLE	
ST THE STRUCT EE	
SAMPLE ID	BATCH
ORIGINAL	5.20
SPIKED SAMPLE	15.3
SPIKE ADDED	10.0
% RECOVERY	100.54%
70 RECOVERT	100.3470
OC CHECK	
QU UILUK	
FOUND	9.79
TRUE	10.0
% RECOVERY	97.90%
BLANK	<1.00

RPD = RELATIVE PERCENT DIFFERENCE.

NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Mamien Hodomsh"

Damien Gadomski Project Manager

#### FPHOLI-TO SUBCONTRACT SAMPLE CHAIN OF CUSTODY

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Send Report <u>To Michael</u>	Erdahl						ts.	hs	ere	,h			TURNAROUND TIME				ME	
CompanyFriedma	n and Bruya	Inc		PROJ	ECT 1	NAME/NO.				P	0#			Sta RU	ndard SH	(2 W	/eeks)	
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City, State, ZIP_Seattle,	WA 98119				ARKS								🗆 Dispose after 30 days					
Phone #(206) <u>285-8282</u> _	Fax # (2	06) 283-504	44		Ple	ase Email	Res	ults						□ Ret □ Wil	urn s l call	ampl with	es instructio	ons
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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample	Туре	# of containers	Total Fe	Hardness	Sulfate	Nitrate	Nitrite	Alkalinity	Sulfide	TKN	Total Phosphorus	Dissolved Gasses	N	lotes
01MW03-20160519		5/19/4	1035	Wate	r	1			X			1						
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Friedman & Bruya, Inc.		SIGNAT	URE	$\Delta$		PRIN		JAM	E	,			MPA				DATE	TIME
3012 16th Avenue West	Relinquisher	Ty:	2	$\square$	Mich	ael Erdahl					Frie	dman	1 & E	Bruya	۱ 	5	polle	0735
Seattle, WA 98119-2029	Received by:	P>			SIN	ASONN	1	0/4/	n	4.2°C	1E	11-				3	120/10	1020
Ph. (206) 285-8282	Relinquished	by:				<u></u>		(	<u>سلرت</u>	<u></u>								
Fax (206) 283-5044	Received by:			<u>,, </u>							1							· · · · · · · · · · · · · · · · · · ·
	L				I													

	SAMPLE CHATTOF CUSTODY ME	05/19/16	VI/
Send Report To <u>Timbrown, our Je</u> ssica Brown, Courtney Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (signature)		Page #of _// DQ3 TURNAROUND TIME
Company SoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	(Xstandard (2 Weeks) RUSH
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIPSeattle, WA 98102	REMARKS	EIM Y / N	SAMPLE DISPOSAL Obspose after 30 days
	<sup>1</sup> low level detection limit of 0.219 ug/L for PCP.		Return samples Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
0111103-20162519	cimmos	15	or A-E	5/1.1/16	んうら	HIC	5	X	X	X			X					
OMW ST-20140519	CIMWON	17	or A D		1118	Ì	ц	$\sim$	X	X								
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														amples	receiveu	at <u>3</u>	_°C	

Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	Liz Farkes	SES	5/17/16	1650
Seattle, WA 98119-2029	Received by: Current Prese	Zijzapeth Radford	FBB	5/19/16	1650
Ph. (206) 285-8282	Relinquished by:	30			
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605373

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

May 24, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 19, 2016 from the TOC\_01-600\_20160519 WORFDB8, F&BI 605373 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0524R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 19, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160519 WORFDB8, F&BI 605373 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605373 -01	01MW36-20160519
605373 -02	01MW84-20160519

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/24/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605373 Date Extracted: 05/20/16 Date Analyzed: 05/20/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW36-20160519 605373-01	<1	<1	<1	<3	<100	91
01MW84-20160519 605373-02 1/5	6.5	17	570	1,600	12,000	105
Method Blank 06-1001 MB	<1	<1	<1	<3	<100	92

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/24/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605373 Date Extracted: 05/20/16 Date Analyzed: 05/20/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	Surrogate <u>(% Recovery)</u> (Limit 47-140)
01MW36-20160519 605373-01	440 x	<250	116
01MW84-20160519 605373-02	1,700 x	<250	121
Method Blank <sup>06-1038 MB</sup>	<50	<250	122

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/24/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605373

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605375-02 (Duplicate) Reporting Sample Duplicate RPD Analyte Units Result Result (Limit 20) Benzene ug/L (ppb) <1 <1 nm Toluene ug/L (ppb) <1 <1 nm Ethylbenzene ug/L (ppb) <1 <1 nm Xylenes ug/L (ppb) <3 <3 nm Gasoline ug/L (ppb) <100 <100 nm

		Percent			
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Benzene	ug/L (ppb)	50	98	65-118	
Toluene	ug/L (ppb)	50	100	72-122	
Ethylbenzene	ug/L (ppb)	50	101	73-126	
Xylenes	ug/L (ppb)	150	99	74-118	
Gasoline	ug/L (ppb)	1,000	95	69-134	

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/24/16 Date Received: 05/19/16 Project: TOC\_01-600\_20160519 WORFDB8, F&BI 605373

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	116	131	61-133	12

#### ENVIRONMENTAL CHEMISTS

#### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

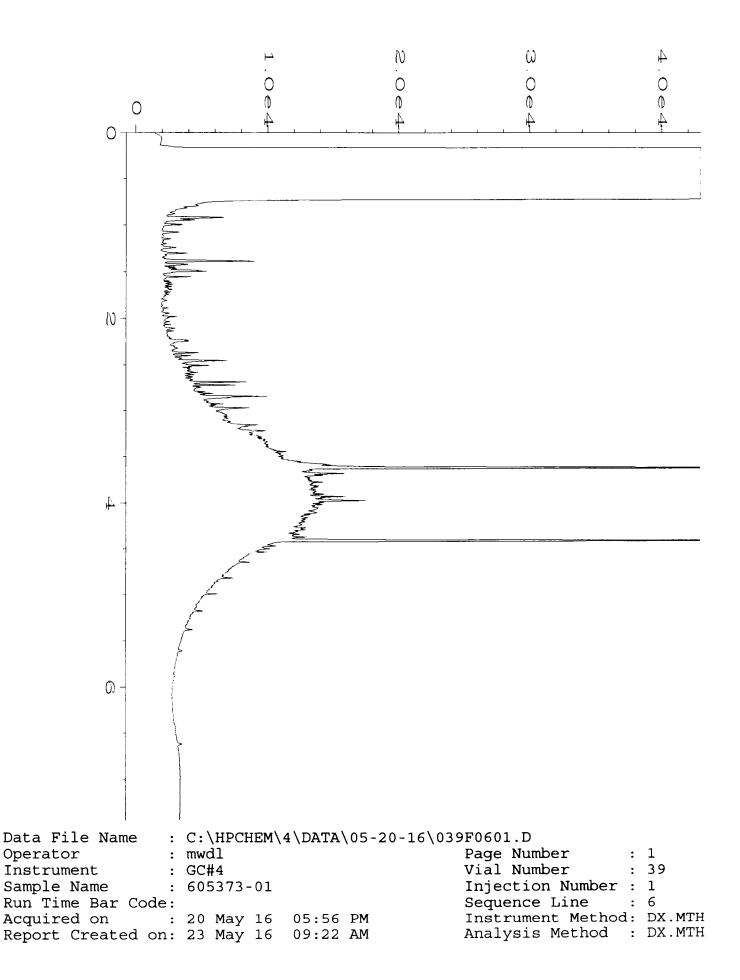
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

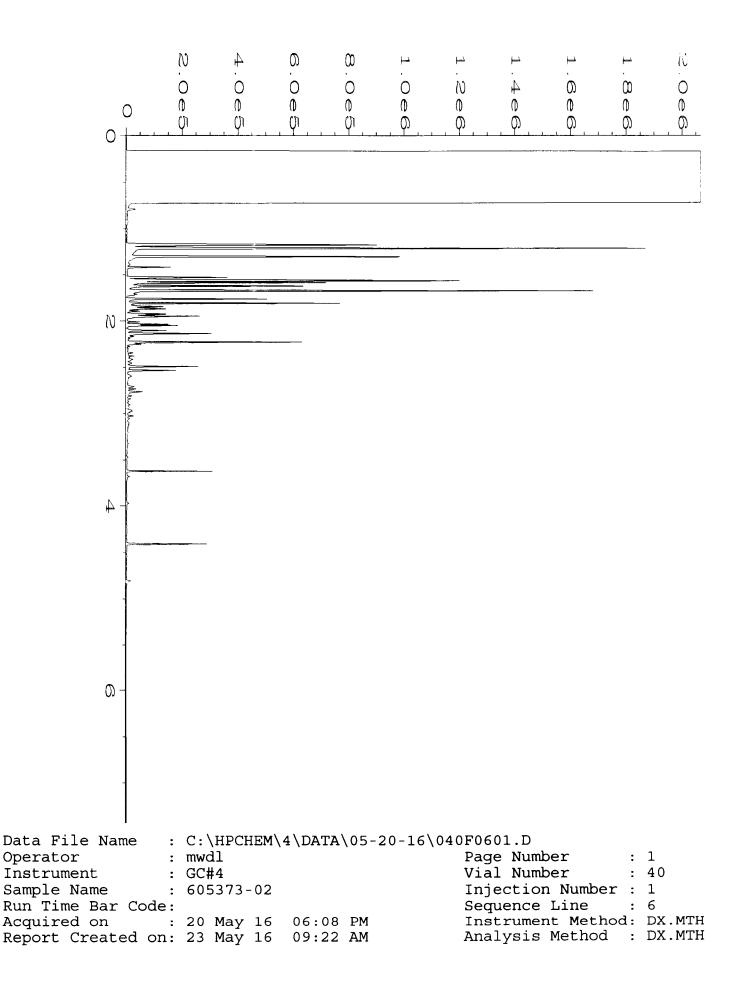
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

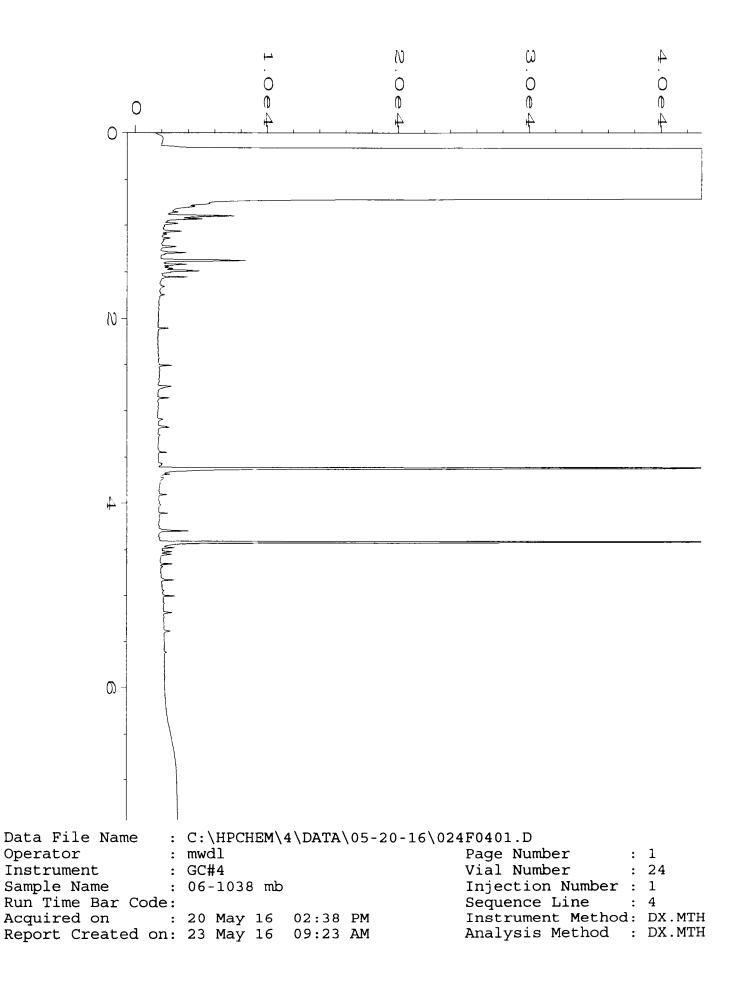
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

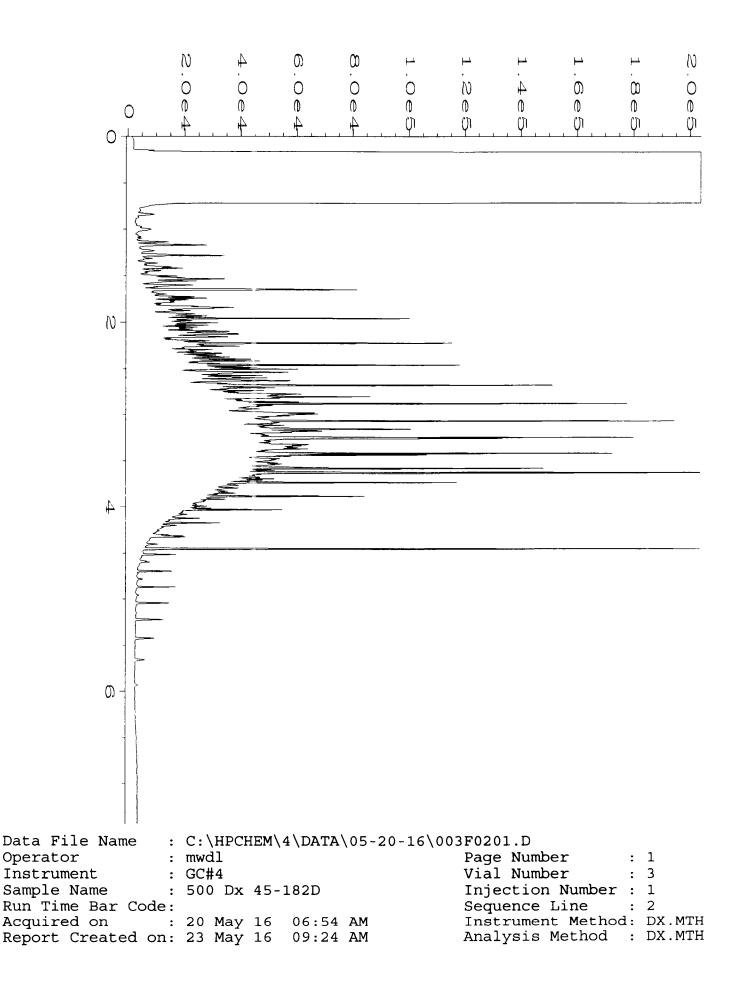
vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.









Send Report To	SAMPLE CHAIN OF CUSTODY ME	= os719/10	Page # TURNAROUND TIME
Company SoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	KStandard (2 Weeks)
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS <sup>1</sup> low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-DX	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinitv	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01MW36-20160519	DIMW36		QA.	5/19/16	1141	$H_2O$	4	X	X	X								
01MW84-20160519	01MW84			5/19/16	1414	HZO	ч	$\star$	×	X								
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by	JONATHAN LOEFFLER	SOUNDEARTH	5/1/16	1650
Seattle, WA 98119-2029	Received by: MittoRafaria	Elizabeth Radford	BFJB	5/19/16	1650
Ph. (206) 285-8282	Relinquished by			7 to this	
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605506

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 15, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 26, 2016 from the TOC\_01-600\_20160526 WORFDB8, F&BI 605506 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0615R.DOC

#### ENVIRONMENTAL CHEMISTS

## CASE NARRATIVE

This case narrative encompasses samples received on May 26, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160526 WORFDB8, F&BI 605506 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
605506 -01	01MW47-20160526
605506 -02	01MW87-20160526

Sample 01MW87-20160526 was sent to Aquatic Research for sulfate analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605506 Date Extracted: 05/27/16 Date Analyzed: 05/27/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW47-20160526 605506-01 1/10	390	12	25	<30	2,900	92
01MW87-20160526 605506-02	<1	<1	<1	<3	<100	93
Method Blank 06-1063 MB	<1	<1	<1	<3	<100	94

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605506 Date Extracted: 05/31/16 Date Analyzed: 05/31/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW47-20160526 605506-01 1/1.2	2,800	<300	90
01MW87-20160526 605506-02	<50	<250	86
Method Blank 06-1104 MB	<50	<250	81

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	01MW87-2016 05/26/16 06/02/16 06/06/16 Water ug/L (ppb)	60526	Client: Project: Lab ID: Data File: Instrument: Operator:	SoundEarth Strategies TOC_01-600_20160526 WORFDB8 605506-02 060614.D GCMS8 ya
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen		% Recovery: 69 47 109	Lower Limit: 17 10 33	Upper Limit: 97 62 166
Compounds:	C	oncentration ug/L (ppb)		
Pentachlorophenol		< 0.2		

## ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Method Blank Not Applicable 06/02/16 06/06/16 Water	Client: Project: Lab ID: Data File: Instrument:	SoundEarth Strategies TOC_01-600_20160526 WORFDB8 06-1122 mb 060613.D GCMS8
Units:	ug/L (ppb)	Operator:	ya
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromopher	% Recovery: 72 47 nol 75	Lower Limit: 17 10 33	Upper Limit: 97 62 166
Compounds:	Concentration ug/L (ppb)		
Pentachlorophenol	<0.2		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605506

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605506-02 (Duplicate) Reporting Sample Duplicate RPD Analyte Units Result Result (Limit 20) Benzene ug/L (ppb) <1 <1 nm Toluene ug/L (ppb) <1 <1 nm Ethylbenzene ug/L (ppb) <1 <1 nm Xylenes ug/L (ppb) <3 <3 nm Gasoline ug/L (ppb) <100 <100 nm

Laboratory Code: Laboratory Control Sample

		Percent			
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Benzene	ug/L (ppb)	50	93	65-118	
Toluene	ug/L (ppb)	50	94	72-122	
Ethylbenzene	ug/L (ppb)	50	95	73-126	
Xylenes	ug/L (ppb)	150	94	74-118	
Gasoline	ug/L (ppb)	1,000	95	69-134	

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605506

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

605535-03 (Matri	x Spike)						
			Percent	Percent			
Reporting	Spike	Sample	Recovery	Recovery	Accep	tance	RPD
Units	Level	Result	MS	MSD	Crit	eria	(Limit 20)
ug/L (ppb)	2,500	<350	83	89	<b>50-</b> 1	150	7
Laboratory Contr	ol Sampl	e					
·	-	Percent	Percent	:			
Reporting	Spike	Recovery	Recover	y Accepta	ance	RPI	)
Units	Level	LCS	LCSD	Criter	ria	(Limit	20)
ug/L (ppb)	2,500	87	95	63-14	12	9	
	Reporting Units ug/L (ppb) Laboratory Contr Reporting Units	Units Level ug/L (ppb) 2,500 Laboratory Control Sampl Reporting Spike Units Level	ReportingSpikeSampleUnitsLevelResultug/L (ppb)2,500<350	ReportingSpikeSamplePercentReportingSpikeSampleRecoveryUnitsLevelResultMSug/L (ppb)2,500<350	Reporting UnitsSpike LevelSample RecoveryPercent RecoveryUnitsLevelResultMSMSDug/L (ppb)2,500<350	PercentPercentReportingSpikeSampleRecoveryRecoveryAccepUnitsLevelResultMSMSDCritug/L (ppb)2,500<350	PercentReportingSpikeSampleRecoveryRecoveryAcceptanceUnitsLevelResultMSMSDCriteriaug/L (ppb)2,500<350

7

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605506

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	70	70	23-185	0

#### ENVIRONMENTAL CHEMISTS

## **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

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cf - The sample was centrifuged prior to analysis.

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dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

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js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

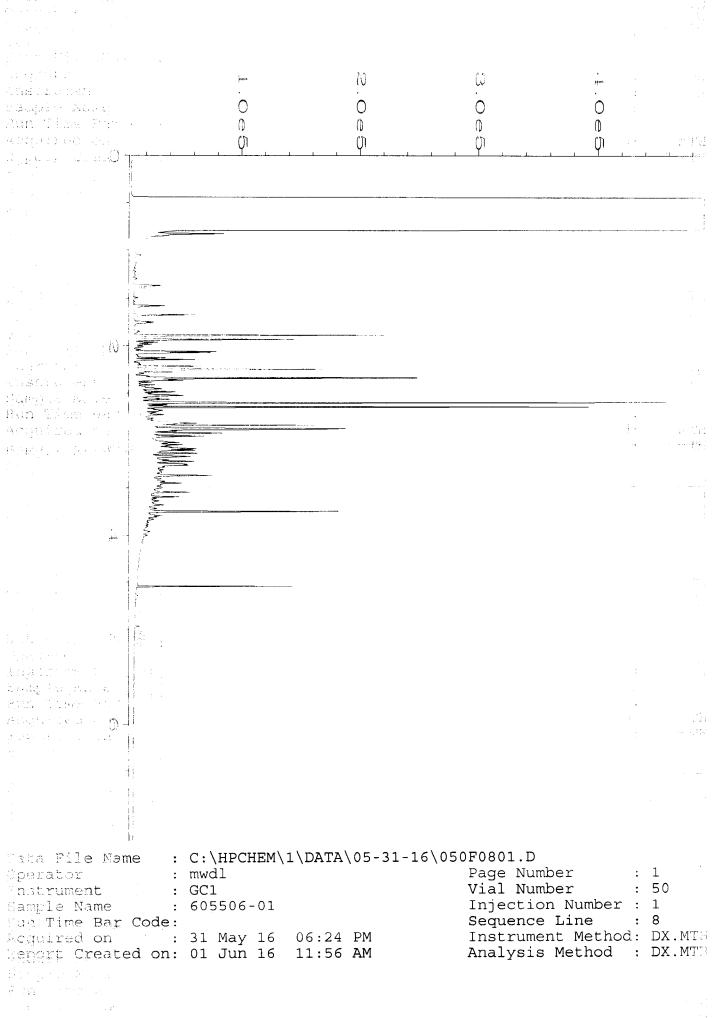
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

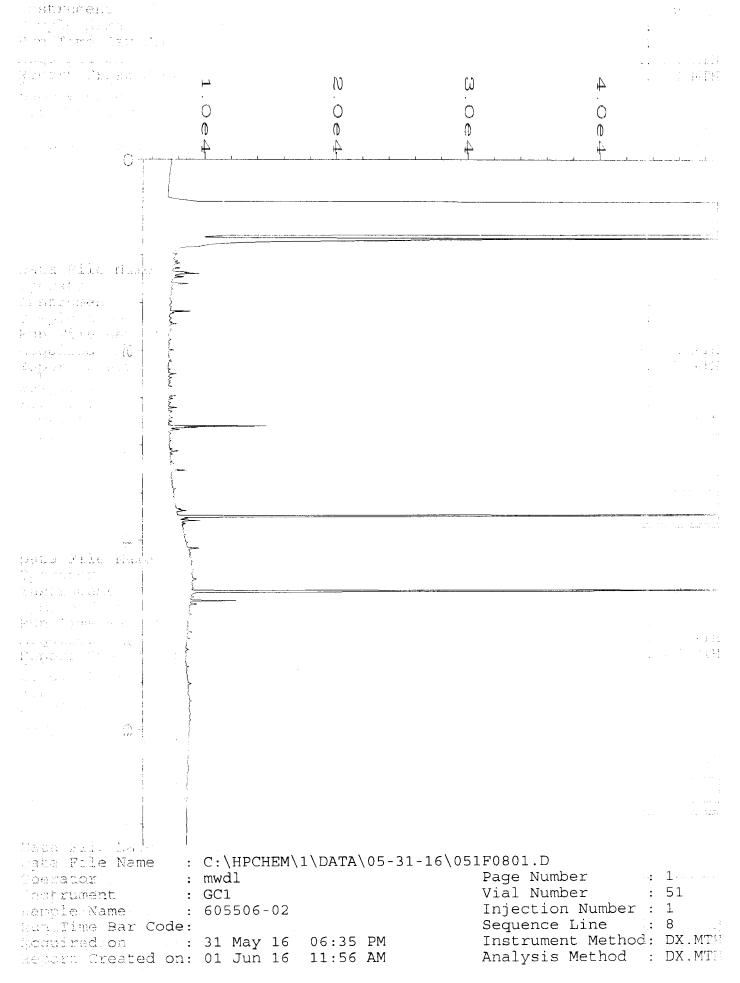
pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

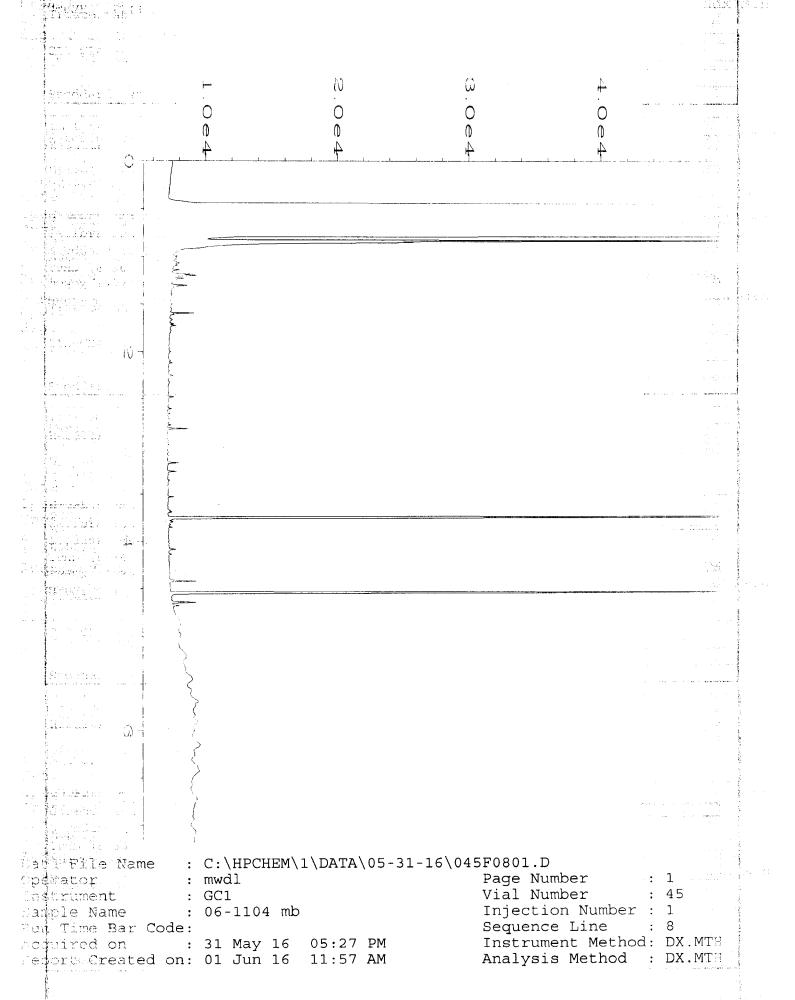
vo - The value reported fell outside the control limits established for this analyte.

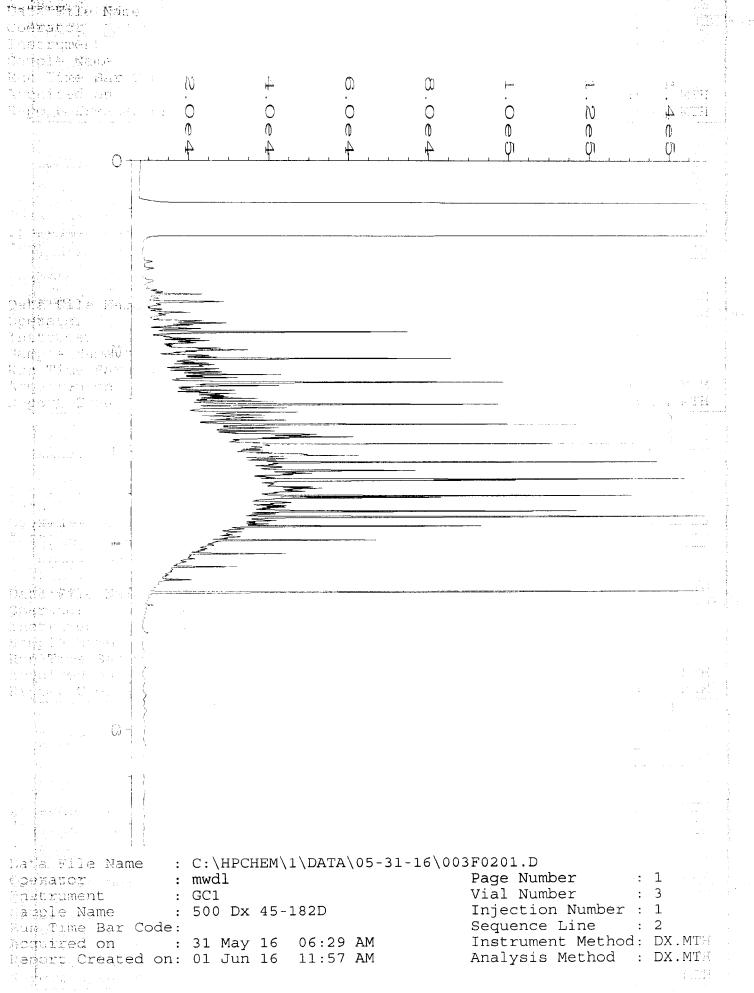
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.





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## IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-77	PA	AGE 1
REPORT DATE:	06/14/16		
DATE SAMPLED:	05/26/16	DATE RECEIVED:	05/31/16
FINAL REPORT, LABORATORY ANALYSIS	S OF SELECTED PARAMETE	CRS ON WATER	
SAMPLES FROM FRIEDMAN & BRUYA, IN	IC. / PROJECT NO. 605506		

#### CASE NARRATIVE

One water sample was received by the laboratory in good condition and analyzed according to the chain of custody. No other difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	SULFATE
SAMPLE ID	(mg/L)
01MW87-20160526	6.18



## **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-77	PA	GE 2				
REPORT DATE:	06/14/16						
DATE SAMPLED:	05/26/16	DATE RECEIVED:	05/31/16				
FINAL REPORT, LABORATORY ANALYSI	FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER						
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605506							

#### QA/QC DATA

QC PARAMETER	SULFATE
	(mg/L)
METHOD	SM184500SO4E
DATE ANALYZED	06/14/16
DETECTION LIMIT	1.00
DUPLICATE	
SAMPLE ID	BATCH
ORIGINAL	5.20
DUPLICATE	5.30
RPD	1.91%
SPIKE SAMPLE	
SAMPLE ID	BATCH
ORIGINAL	5.20
SPIKED SAMPLE	15.3
SPIKE ADDED	10.0
% RECOVERY	100.54%
QC CHECK	
FOUND	9.79
TRUE	10.0
% RECOVERY	97.90%
BLANK	<1.00

RPD = RELATIVE PERCENT DIFFERENCE.

NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Mamien Hodomsh"

Damien Gadomski Project Manager

# FB104 -77 SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report <u>To Mick</u>	ael Erdahl		· ·	SUBCO	NTRA	CTER	A.	-t	Rese						age #_	(	_of	<u> </u>
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Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	#of jars	Dioxins/Furans	ВРН	VPH		•		<b>.</b>					Notes	
01MW87-20160526		5/26/16		water			· · ·			X			<b> </b>	· · · · ·			~ <u></u>	
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ax (206) 283-5044	Received by	-				. <b>.</b> .										, ,	· ·	1

605506	SAMPLE CHAIN OF CUSTODY	E 05/26	116 12/
Send Report To <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (signurure)		Page #of
CompanySoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	Standard (2 Weeks)
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	RUSH Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS I low level detection limit of	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples
	0.219 ug/L for PCP.		Will call with instructions

Sample ID	Sampl <del>e</del> Location	Sample Depth	Lab ID	Date Sampled	Tim <del>e</del> Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs ' by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01MW47-20160526	OIMWYF		01 A-D		1211	H <sub>2</sub> O	4	X	X	X	[			<u> </u>				
01MW87-2960526	OIMW87		or AF	5/26/16	1317	Η <sub>2</sub> ΰ	4	×	×	×	×		×					
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by	JONATHAN LOEFFLER	SOUNDEARTH	5/26/16	1535
Seattle, WA 98119-2029	Received by: Ellight Labed	Elizabeth Lactord	T= # R	5/2/1/10	3:35
Ph. (206) 285-8282	Relinquished by:	<u> </u>			
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605507

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 15, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 26, 2016 from the TOC\_01-600\_20160526 WORFDB8, F&BI 605507 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0615R.DOC

#### ENVIRONMENTAL CHEMISTS

## CASE NARRATIVE

This case narrative encompasses samples received on May 26, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160526 WORFDB8, F&BI 605507 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
605507 -01	01MW48-20160526
605507 -02	01MW86-20160526

Sample 01MW86-20160526 was sent to Aquatic Research for sulfate analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605507 Date Extracted: 05/27/16 Date Analyzed: 05/27/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW48-20160526 605507-01	<1	<1	<1	<3	<100	98
01MW86-20160526 605507-02 1/10	840	<10	130	69	4,000	96
Method Blank 06-1063 MB	<1	<1	<1	<3	<100	94

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605507 Date Extracted: 05/31/16 Date Analyzed: 05/31/16

## RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW48-20160526 605507-01	690 x	280 x	84
01MW86-20160526 605507-02	3,800 x	580 x	96
Method Blank 06-1104 MB	<50	<250	81

# ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix:	01MW86-20160526 05/26/16 06/02/16 06/06/16 Water	Client: Project: Lab ID: Data File: Instrument:	SoundEarth Strategies TOC_01-600_20160526 WORFDB8 605507-02 060616.D GCMS8
Units:	ug/L (ppb)	Operator:	ya
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromophen	% Recovery: 83 53 ol 99	Lower Limit: 17 10 33	Upper Limit: 97 62 166
Compounds:	Concentration ug/L (ppb)		
Pentachlorophenol	<0.2		

## ENVIRONMENTAL CHEMISTS

# Analysis for Semivolatile Phenols By EPA Method 8270D SIM

Client Sample ID: Date Received: Date Extracted: Date Analyzed:	Method Blank Not Applicable 06/02/16 06/06/16	Client: Project: Lab ID: Data File:	SoundEarth Strategies TOC_01-600_20160526 WORFDB8 06-1122 mb 060613.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya
Surrogates: 2-Fluorophenol Phenol-d6 2,4,6-Tribromopher	% Recovery: 72 47 nol 75	Lower Limit: 17 10 33	Upper Limit: 97 62 166
Compounds:	Concentration ug/L (ppb)		
Pentachlorophenol	<0.2		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605507

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605506-02 (Duplicate) Reporting Sample Duplicate RPD Analyte Units Result Result (Limit 20) Benzene ug/L (ppb) <1 <1 nm Toluene ug/L (ppb) <1 <1 nm Ethylbenzene ug/L (ppb) <1 <1 nm Xylenes ug/L (ppb) <3 <3 nm Gasoline ug/L (ppb) <100 <100 nm

Laboratory Code: Laboratory Control Sample

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Benzene	ug/L (ppb)	50	93	65-118		
Toluene	ug/L (ppb)	50	94	72-122		
Ethylbenzene	ug/L (ppb)	50	95	73-126		
Xylenes	ug/L (ppb)	150	94	74-118		
Gasoline	ug/L (ppb)	1,000	95	69-134		

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605507

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 605535-03 (Matrix Spike)								
				Percent	Percent			
	Reporting	Spike	Sample	Recovery	Recovery	Accept	ance	RPD
Analyte	Units	Level	Result	MS	MSD	Crite	ria	(Limit 20)
<b>Diesel Extended</b>	ug/L (ppb)	2,500	<350	83	89	50-1	50	7
Laboratory Code: Laboratory Control Sample Percent Percent								
	Reporting	Spike	Recovery			ance	RPD	)
Analyte	Units	Level	LCS	LCSD	Criter		(Limit	20)
Diesel Extended	ug/L (ppb)	2,500	87	95	63-14	12	9	

7

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/15/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605507

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	70	70	23-185	0

#### ENVIRONMENTAL CHEMISTS

## **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

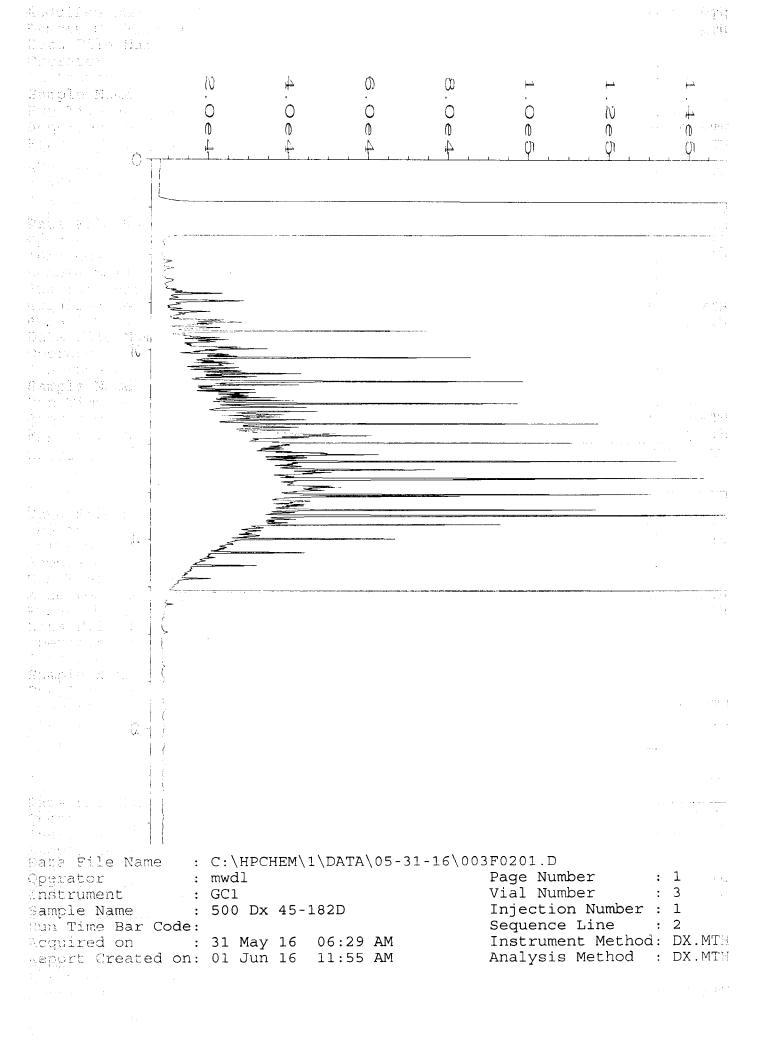
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# IEH ANALYTICAL LABORATORIES

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-78	PAGE 1					
REPORT DATE:	06/14/16						
DATE SAMPLED:	05/26/16	DATE RECEIVED:	05/31/16				
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER							
SAMPLES FROM FRIEDMAN & BRUYA, IN	C. / PROJECT NO. 605507						

#### CASE NARRATIVE

One water sample was received by the laboratory in good condition and analyzed according to the chain of custody. No other difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on subsequent pages.

#### SAMPLE DATA

	SULFATE
SAMPLE ID	(mg/L)
01MW86-20160526	<1.00



# **IEH ANALYTICAL LABORATORIES**

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI014-78	PAGE 2					
REPORT DATE:	06/14/16						
DATE SAMPLED:	05/26/16	DATE RECEIVED:	05/31/16				
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER							
SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 605507							

#### QA/QC DATA

QC PARAMETER	SULFATE
	(mg/L)
METHOD	SM184500SO4E
DATE ANALYZED	06/14/16
DETECTION LIMIT	1.00
DUPLICATE	
SAMPLE ID	BATCH
ORIGINAL	5.20
DUPLICATE	5.30
RPD	1.91%
SPIKE SAMPLE	
SAMPLE ID	BATCH
ORIGINAL	5.20
SPIKED SAMPLE	15.3
SPIKE ADDED	10.0
% RECOVERY	100.54%
QC CHECK	
FOUND	9.79
TRUE	10.0
% RECOVERY	97.90%
BLANK	<1.00

RPD = RELATIVE PERCENT DIFFERENCE.

NA = NOT APPLICABLE OR NOT AVAILABLE. NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT. OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Mamien Hademsh"

Damien Gadomski Project Manager

FB1014-79

# SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Mick	uael Erdahl	<u></u>	· · ·	SUBCO	NTRA	CTER	Agu	tre	Rese	r.d					Page #		_ of	
Company       Friedman and Bruya, Inc.         Address       3012 16th Ave W					CT NAL	<u>me/n(</u> 550	).		1.		)#		10	TURNAROUND TIME    Standard (2 Weeks)  RUSH  Rush charges authorized by:				
City, State, ZIP <u>Seattle, WA 98119</u> Phone # (206) 285-8282 Fax # (206) 283-5044			REMAR				dts	⊥ <u>,, ·</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	· · · ·				SAMPLE DISPOSAL Dispose after 30 days Return samples U Will call with instructions					
	·	· · · · · · · · · · · · · · · · · · ·	T						ANAL	YSE	S REC	UES	TED	)		<b>—</b>		
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	НЧЛ		Sulfate		TOC-9060M					Notes	
01MW86 - 20160526		5/26/16	· · · · · · · · · · · · · · · · · · ·	Water	<u> </u>		· · ·			X						_		<u> </u>
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<sup>7</sup> ax (206) 283-5044	Received by	:	······································						<u> </u>								· · ·	

605507	SAMPLE CHAIN OF CUSTODY	1E 05/24	p/15 Va/AIG/
Send Report To <u>Tim Brown, cc: Jessica Brown, Courtney</u> Schaumberg, Jonathan Loeffler, Jennifer Cyr	SAMPLERS (signature)		Page #of
CompanySoundEarth Strategies, Inc.	PROJECT NAME/NO.	PO #	Standard (2 Weeks)
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples
	0.219 ug/L for PCP.		Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (low-level detection limits) <sup>1</sup>	cVOCs · by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01MW48-2016052	6 014448	· —	O'A-D	05126116	1209	hileter-	4	$\times$	$\boldsymbol{\lambda}$	$\overline{\mathbf{X}}$							••	
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	(4.15 Cars	Schold Carty	05/20126	1535
Seattle, WA 98119-2029	Received by: Elizabeth Refeed	Elizabeth Radford	E+D	417 6.110	2.70
Ph. (206) 285-8282	Relinquished by:	Clizabeth Kaofford		120110	7.22
Fax (206) 283-5044	Received by:				

Friedman & Bruya, Inc. #605510

#### ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 7, 2016

Tim Brown, Project Manager SoundEarth Strategies 2811 Fairview Ave. East, Suite 2000 Seattle, WA 98102

Dear Mr. Brown:

Included are the results from the testing of material submitted on May 26, 2016 from the TOC\_01-600\_20160526 WORFDB8, F&BI 605510 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Jessica Brown, Courtney Schaumberg, Jennifer Cyr, Jonathan Loeffler SOU0607R.DOC

### ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE

This case narrative encompasses samples received on May 26, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies TOC\_01-600\_20160526 WORFDB8, F&BI 605510 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	SoundEarth Strategies
605510 -01	01MW50-20160526
605510 -02	01MW49-20160526
605510 -03	01MW51-20160526

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605510 Date Extracted: 05/27/16 Date Analyzed: 05/27/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 52-124)
01MW50-20160526 605510-01	<1	<1	<1	<3	<100	95
01MW49-20160526 605510-02	<1	<1	<1	<3	<100	94
01MW51-20160526 605510-03	<1	<1	1.7	4.7	370	98
Method Blank 06-1063 MB	<1	<1	<1	<3	<100	94

Results Reported as ug/L (ppb)

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605510 Date Extracted: 05/31/16 Date Analyzed: 05/31/16

#### RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
01MW50-20160526 605510-01	200 x	<250	100
01MW49-20160526 605510-02	77 x	<250	98
01MW51-20160526 605510-03	1,300 x	460 x	101
Method Blank <sup>06-1104 MB</sup>	<50	<250	81

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605510

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 605506-02 (Duplicate) Reporting Sample Duplicate RPD Analyte Units Result Result (Limit 20) Benzene ug/L (ppb) <1 <1 nm Toluene ug/L (ppb) <1 <1 nm Ethylbenzene ug/L (ppb) <1 <1 nm Xylenes ug/L (ppb) <3 <3 nm Gasoline ug/L (ppb) <100 <100 nm

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/L (ppb)	50	93	65-118
Toluene	ug/L (ppb)	50	94	72-122
Ethylbenzene	ug/L (ppb)	50	95	73-126
Xylenes	ug/L (ppb)	150	94	74-118
Gasoline	ug/L (ppb)	1,000	95	69-134

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/16 Date Received: 05/26/16 Project: TOC\_01-600\_20160526 WORFDB8, F&BI 605510

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code:	605535-03 (Matri	x Spike)								
				Percent	Percent					
	Reporting	Spike	Sample	Recovery	Recovery	Accep	tance	RPD		
Analyte	Units	Level	Result	MS	MSD	Crit	eria	(Limit 20)		
<b>Diesel Extended</b>	ug/L (ppb)	2,500	<350	83	89	50-150		50-150		7
Laboratory Code:	Laboratory Contr	ol Sampl	e							
			Percent	Percent						
	Reporting	Spike	Recovery	Recover	y Accepta	cceptance		D		
Analyte	Units	Level	LCS	LCSD	Criter	ria	(Limit			
Diesel Extended	ug/L (ppb)	2,500	87	95	63-14	12	9			

5

#### ENVIRONMENTAL CHEMISTS

# ata Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

 ${\bf b}$  - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

 ${\rm d}$  - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

 $hr\ \text{-}\ The\ sample\ and\ duplicate\ were\ reextracted\ and\ reanalyzed.\ RPD\ results\ were\ still\ outside\ of\ control\ limits.\ Variability\ is\ attributed\ to\ sample\ inhomogeneity.$ 

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

 $\ensuremath{\text{ip}}$  - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

 ${\bf j}$  - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

 ${\rm J}$  - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

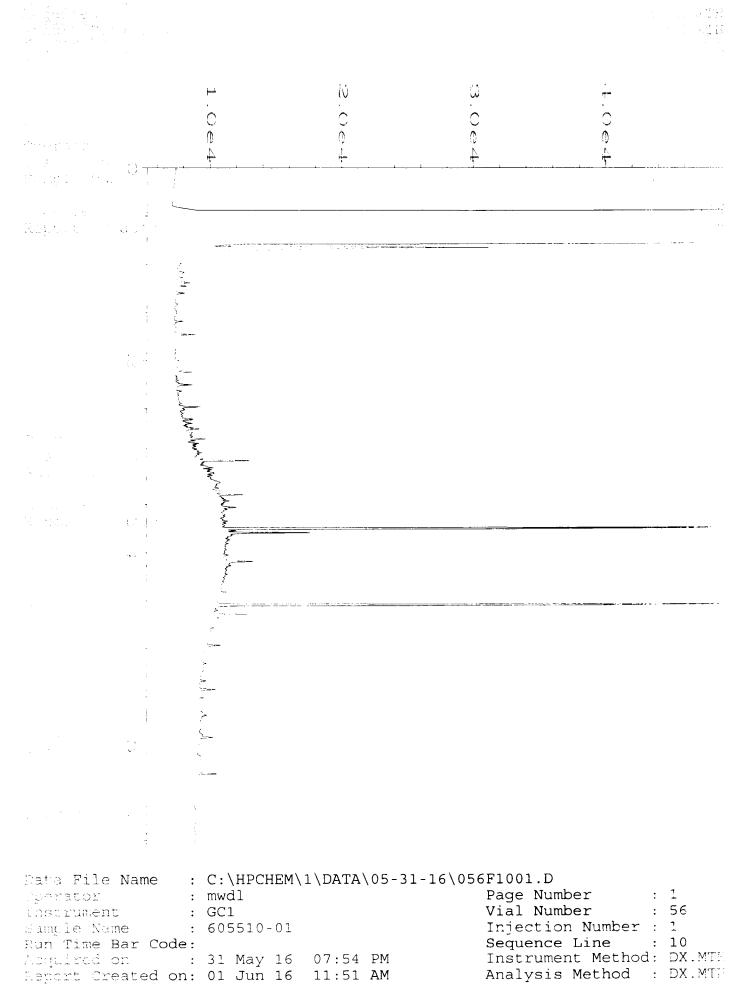
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

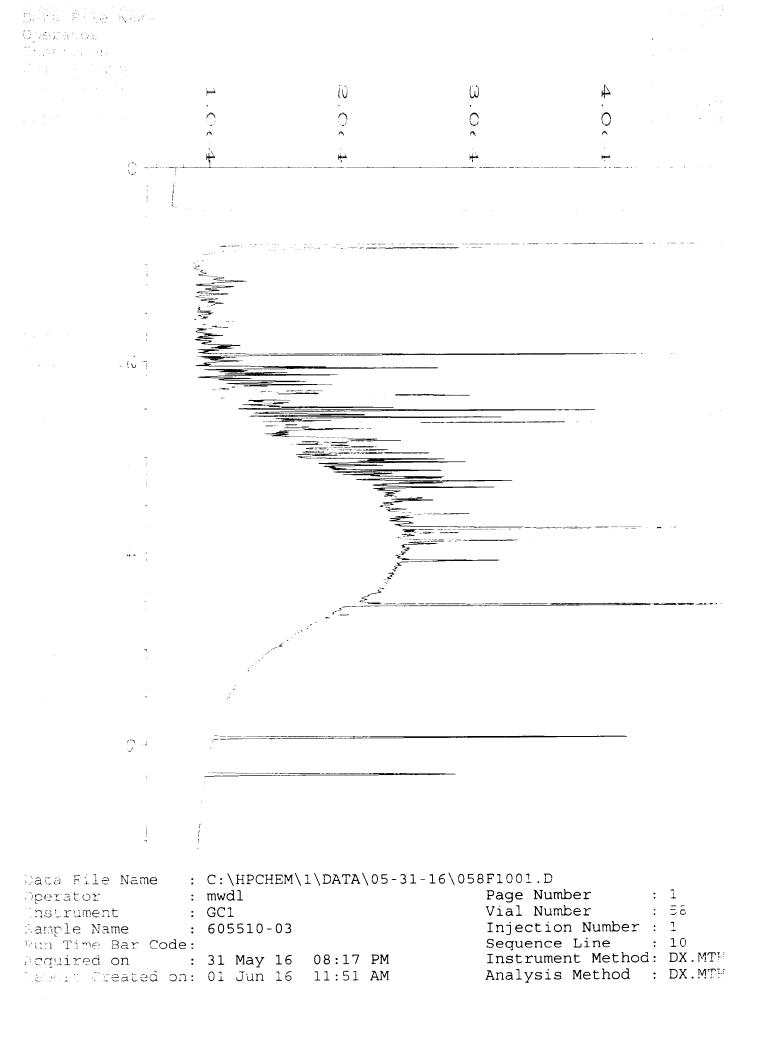
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

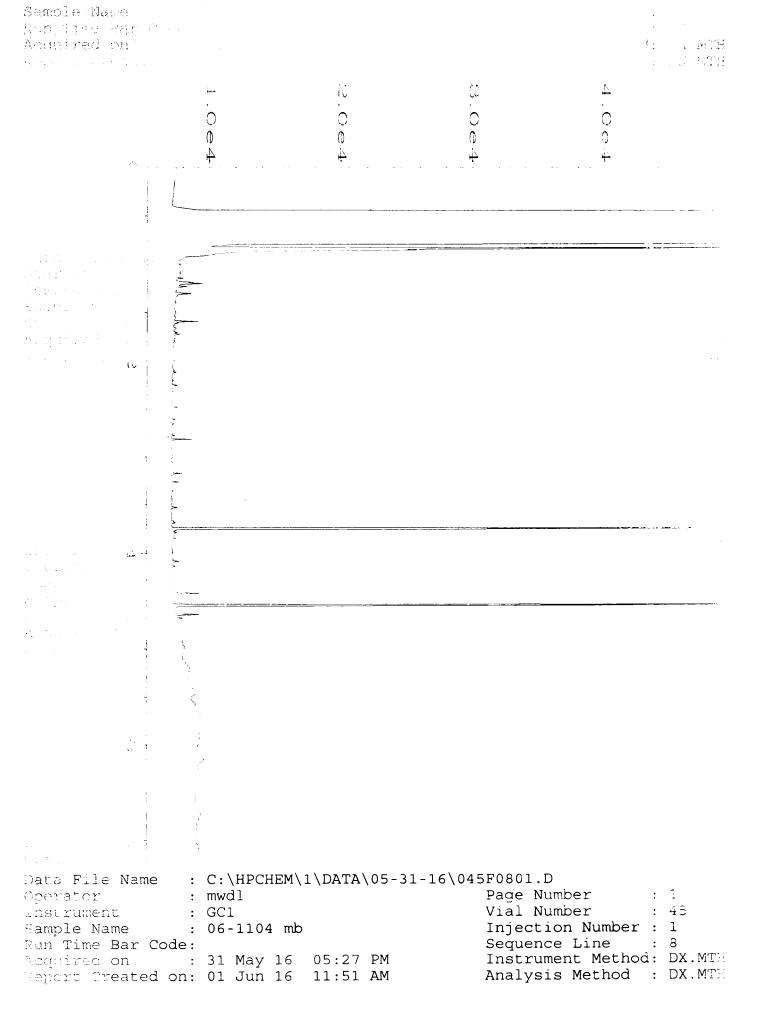
vo - The value reported fell outside the control limits established for this analyte.

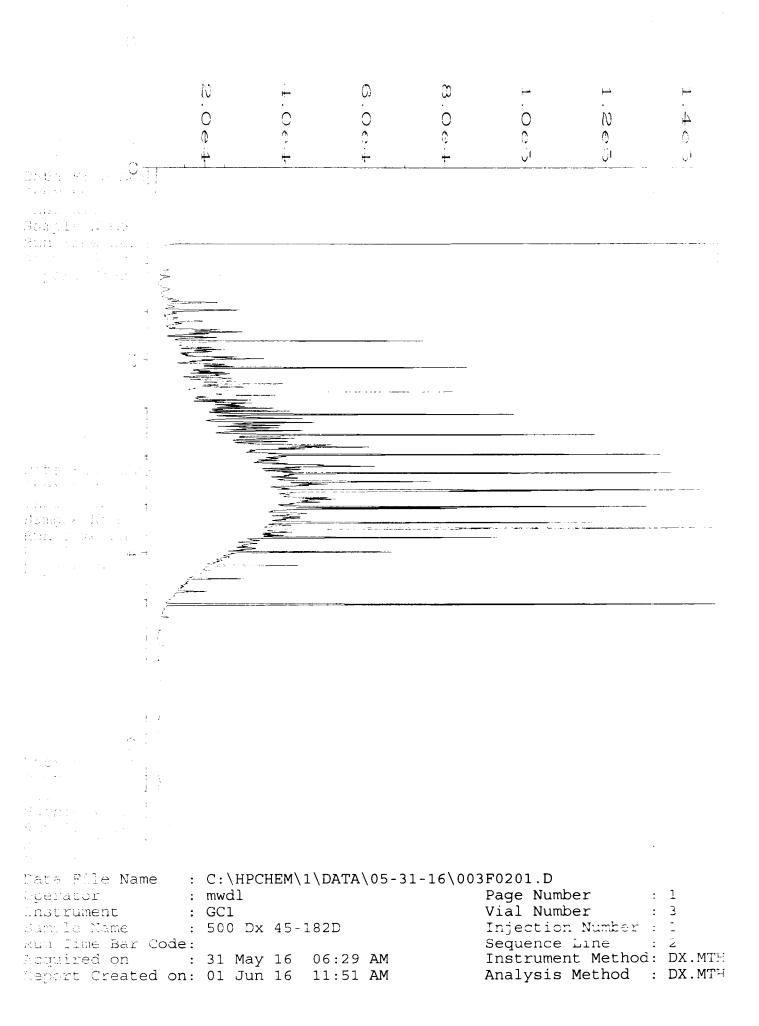
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



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Pata File Name Operator Instrument Sample Name Sam Time Bar C Acquired on	: C:\HPCHEM\ : mwdl : GC1 : 605510-02	08:06 PM	Page Numb Vial Numb Injection Sequence Instrumen	er : 1 er : 57 Number : 1 Line : 10 t Method: DX.MTH Method : DX.MTH







605510	SAMPLE CHAIN OF CUSTODY	NE 5126116	v2/Doy
Send Report To	SAMPLERS (signurure)		Page # TURNAROUND TIME
CompanySoundEarth Strategies, Inc.	PROJECT NAME/NO.	* PO #	Kistandard (2 Weeks) RUSH
Address 2811 Fairview Ave E, Suite 2000	TOC Holdings Co. Facility No. 01-600 Seattle Terminal	01-600	Rush charges authorized by:
City, State, ZIP <u>Seattle, WA 98102</u>	REMARKS <sup>1</sup> low level detection limit of 0.219 ug/L for PCP.	EIM Y / N	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

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Sample ID	Sampl <del>e</del> Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	, # of jars	GRPH by NWTPH-Gx	BTEX by EPA 8021B	DRPH/ORPH by NWTPH-Dx	PCP by EPA 8270D (Io <del>w level</del> detection limits) <sup>1</sup>	cVOCs by EPA 8260C	Sulfate by EPA 300.0	Methane, Ethane, and Ethene by RSK 175	Nitrate, Nitrite, Total P, Hardness and Alkalinity	Total Fe and Total Mn by EPA 200.7	TKN, Sulfide, and Fe 2+	Notes
01MW50-20160526	OIMWSO	24	015	5/24/16	1035	water	4	×	X	X								
01MW41-20160524	0111149	25.4	02	5/26/16	1150	write	4	X	×	×								
01MW31-Z:165240	OIMWSI	21.9	03	5/26/10	1310	writer	4	X	×	×								
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	Courtney Schaumberg	SounciFarty	5/26/16	1535
Seattle, WA 98119-2029	Received by: Manutheller		FBB	5/26/16	3:35
Ph. (206) 285-8282	Relinquished by:	/////////////////	_		
Fax (206) 283-5044	Received by:	San	ples received at <u>5</u>	¢	