

**APPENDIX D**

**b. Laboratory Data Sheets--MultiChem**





April 27, 1998

MAS I. D. # 821354

Montgomery Watson  
4100 Spenard Road  
Anchorage, AK 99517

Attn: Lynn DeGeorge

Project Name: Liberty Island Sediments

Project Number: 1189002.330101

Dear Ms. DeGeorge:

On March 20, 1998, MultiChem Analytical Services, LLC of Alaska received twenty seven samples for analysis in conjunction with the above listed project. The requested analyses were performed using EPA or equivalent methods. The reports of analyses and deliverables are enclosed. Below is an outline of the laboratories that participated in this project.

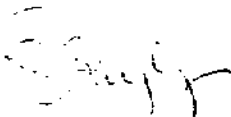
MAS-WA Analysis Performed: Volatile Organics (8260), Semivolatile Organics (8270), Pesticides/PCBs (8081), Total Organic Carbon (TOC) and Total Suspended Solids (TSS)

Dowl/Alaska Testlabs Analysis Performed: Grain Size and Particle Size Distribution (ASTM D-422)

**\*Please note:** this report is a partial report, containing all analyses and raw data with the exception of the 8270 results. These results are in the final stages and will be forwarded as quickly as possible.

Please do not hesitate to contact us at (907) 248-8273, if you have any questions or comments.

Sincerely,  
MultiChem Analytical Services

  
Victoria L. Bayly  
Project Manager

**Sample ID. Cross Reference Sheet**

Client: Montgomery Watson  
Project #: 1189002.330101  
Project Name: Liberty Island Sediments


MAS I.D.: 821354

MAS ID #	Client Description	Sample Date
821354 1	98BPXLI02WA01	3/18/98
821354 2	98BPXLI02WA02	3/18/98
821354 3	98BPXLI02WA03	3/18/98
821354 4	98BPXLI09WA01	3/18/98
821354 5	98BPXLI09WA02	3/18/98
821354 6	98BPXLI09WA03	3/18/98
821354 7	98BPXLI14WA01	3/18/98
821354 8	98BPXLI14WA02	3/18/98
821354 9	98BPXLI30WA03	3/19/98
821354 10	98BPXLI30WA01	3/19/98
821354 11	98BPXLI30WA02	3/19/98
821354 12	98BPXLI30WA62	3/19/98
821354 13	98BPXLI02WA61	3/18/98
821354 14	98BPXLI02SD01(01)	3/18/98
821354 15	98BPXLI02SD02(03)	3/18/98
821354 16	98BPXLI02SD03(09)	3/18/98
821354 17	98BPXLI09SD01(01)	3/18/98
821354 18	98BPXLI09SD02(03)	3/18/98
821354 19	98BPXLI09SD03(09)	3/18/98
821354 20	98BPXLI14SD01(01)	3/18/98
821354 21	98BPXLI14SD02(03)	3/18/98
821354 22	98BPXLI14SD03(09)	3/18/98
821354 23	98BPXLI30SD01(01)	3/19/98
821354 24	98BPXLI30SD02(03)	3/19/98
821354 25	98BPXLI30SD03(09)	3/19/98
821354 26	98BPXLI30SD62(03)	3/19/98
821354 27	98BPXLI02SD62(03)	3/18/98

**MAS STANDARD DISPOSAL PRACTICE**

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.


MAS 821354

Montgomery Watson 4100 Spenard Road Anchorage AK 99517 (907)248-8883 Fax (907) 248-8884 ATTN: Lynn DeGeorge		Laboratory: Mulchem Analytical Services 2000 West International Airport Road Anchorage, Alaska 99502 (907) 248-8273 (907) 248-8273 FAX Attn: Mike Vogel		SOIL				WATER		Comments		
		MW Job Number: 1187002 21-DAY 330101 TURNAROUND		VOCs- 8260a 2 x 2-oz amber glass	SVOCs- 8270 1 x 8-oz amber glass	TOC- 415.1 1 x 4-oz amber glass	Grain Size - ASTM D422 1 x 8-oz amber glass	Particle Size- ASTM D2487 1 x 4-oz amber glass	TSS- 160.2 250 ml poly		TOC- 415.1 1 x 250 ml amber	
Sampler's Signature 1998 <i>Borchan</i>				Cool to 4°C				Cool to 4°C		Comments		
AS#	Date	Time	Sample ID	Matrix	Total Containers	VOCs	SVOCs	TOC	Grain Size		Particle Size	TSS
-1	3-18	2210	98BPXLI 02 WA01	W	2						✓	✓
-2	3-18	2130	98BPXLI 02 WA02	W	2						✓	✓
-3	3-18	2200	98BPXLI 02 WA03	W	2						✓	✓
-4	3-18	1530	98BPXLI 09 WA01	W	2						✓	✓
-5	3-18	1540	98BPXLI 09 WA02	W	2						✓	✓
-6	3-18	1550	98BPXLI 09 WA03	W	2						✓	✓
-7	3-18	1300	98BPXLI 14 WA01	W	2						✓	✓
-8	3-18	1315	98BPXLI 14 WA02	W	2						✓	✓
-9	3-19	0200	98BPXLI 30 WA03	W	2						✓	✓
-10	3-19	0120	98BPXLI 30 WA01	W	2						✓	✓
-11	3-19	0140	98BPXLI 30 WA02	W	2						✓	✓
			98BPXLI WA03									
-12	3-19	0150	98BPXLI 30 WA62		2						✓	✓
-13	3-18	2110	98BPXLI 02 WA61		2						✓	✓
			98BPXLI WA									
			98BPXLI WA									
Relinquished by <i>Borchan</i>				Date 5-20-98	Hand Delivered <input checked="" type="checkbox"/>	Shipped Via <i>hand</i>	Airbill Number	Date				
Received for Laboratory by <i>Lynn DeGeorge</i>				Time 1000	Cooler Temperature 4.8° 3.7° °C	Laboratory Notified	Time					
				Date 5/20/98	Upon Arrival 5.1° 11.7° °C	Faxed						

MS/MSD

No Sample

LAST

Montgomery Watson 4101 Spennard Road Anchorage AK 99517 (907)248-8883 Fax (907) 248-8884 ATTN: Lynn DeGeorge		Laboratory: Multichem Analytical Services 2000 West International Airport Road Anchorage, Alaska 99512 (907) 248-8273 (907) 248-8273 FAX Attn: Mike Vogel		SOIL						WATER		MAS 821354
		1189002, 330101 MW Job Number: GP 118922-30101 21-DAY TURNAROUND		VOCs- 8260a 2 x 2-oz amber glass SVOCs- 8270 1 x 8-oz amber glass TOC- 415.1 1 x 4-oz amber glass Grain Size - ASTM D422 1 x 8-oz amber glass Particle Size- ASTM D2487 1 x 4-oz amber glass 8081 3/21/98 per L. DeGeorge						TSS- 160.2 250 ml poly TOC- 415.1 1 x 250 ml amber		
Sampler's Signature 1998 <i>[Signature]</i>		Cool to 4 degrees C						Cool to 4 degrees C		H2SO4	Comments	
AS#	Date	Time	Sample ID	Matrix	Total Containers							
-14	3-18	2210	98BPXLI 02 SD01(01)	S	5	✓	✓	✓	✓	✓	8081 for hexachlorobenzene	
-15	3-18	2230	98BPXLI 02 SD02(03)	S	5						+ butadiene	
-16	3-18	2330	98BPXLI 02 SD03(09)	S	5						8260 for 1,2,4-trichlorobenzene	
-17	3-18	1610	98BPXLI 09 SD01(01)	S	5						MS/MSD 3/21/98	
-18	3-18	1620	98BPXLI 09 SD02(03)	S	5							
-19	3-18	1630	98BPXLI 09 SD03(09)	S	5							
-20	3-18	1330	98BPXLI 14 SD01(01)	S	5							
-21	3-18	1345	98BPXLI 14 SD02(03)	S	5							
-22	3-18	1400	98BPXLI 14 SD03(09)	S	5							
23	3-19	0250	98BPXLI 30 SD01(01)	S	5							
-24	3-19	0300	98BPXLI 30 SD02(03)	S	5							
-25	3-19	0330	98BPXLI 30 SD03(09)	S	5	✓	✓	✓	✓	✓		
-26	3-19	0310	98BPXLI 30 SD6 2(03)	S	3	✓	✓	✓		✓		
-27	3-18	2200	98BPXLI 02 SD6 2(03)	S	3	✓	✓	✓		✓		
			98BPXLI SD ( )									
			98BPXLI SD ( )									
Relinquished by: <i>[Signature]</i>		Date: 3-20-98 Time: 10:00		Hand Delivered: <input checked="" type="checkbox"/>	Shipped Via: <i>hand</i>	Airbill Number: _____ Date: _____		Time: _____				
Received for Laboratory by: <i>[Signature]</i>		Date: 3-20-98 Time: 10:00		Cooler Temperature: _____ °C Upon Arrival: _____		Laboratory Notified: _____ Faxed: _____						

**SAMPLE LOG-IN CHECKLIST**

SESSION #: 821354 SUBCONTRACT WORK?  YES / NO  
 CLIENT NAME: Montgomery Winters TO LAB (circle): MAS-R OTHER: AK Test Labs  
 LOGGED-IN BY (print): Gary Fisher (sign): Gary Fisher  
 Date received: 3/20/98 Client's Cooler # (if any): \_\_\_\_\_  
 Is the project for: ACOE? YES /  NO NAVY? YES /  NO

1. Did cooler arrive with shipping document?	(Hand delivery) <input checked="" type="checkbox"/> N/A	YES	NO
2. Are Custody seals present on cooler?	YES / <input checked="" type="checkbox"/> NO	How many?	Where?
Seal date:	Seal name:	Intact?	N/A
3. Are Custody seals present on sample containers?		YES	NO
If "YES", intact?		N/A	<input checked="" type="checkbox"/> YES
4. Is the Chain of Custody (C-O-C) sealed in plastic bag?	YES / <input checked="" type="checkbox"/> NO	Taped to cooler lid?	YES / <input checked="" type="checkbox"/> NO
5. Is the C-O-C complete? *	Relinquished by client: YES / NO	Analyses marked off:	YES / NO
* C-O-C or other representative documents, letters, and/or shipping memos.		Signed/received by lab:	YES / NO
6. Is the C-O-C in agreement with samples received?			
Sample ID's:	<input checked="" type="checkbox"/> YES / NO	Matrix:	<input checked="" type="checkbox"/> YES / NO
Date sampled:	<input checked="" type="checkbox"/> YES / NO	# Containers:	YES / <input checked="" type="checkbox"/> NO
7. Has the main logbook been filled out properly?			<input checked="" type="checkbox"/> YES / NO
8. If samples are RUSH has notice been given?		<input checked="" type="checkbox"/> N/A	YES / NO
9. Is proper preservation indicated on label(s)?		<input checked="" type="checkbox"/> N/A	YES / NO
Did pH check verify preservative indicated?		(Volatiles) <input checked="" type="checkbox"/> N/A	YES / NO
10. Is there sufficient sample volume for analyses?			<input checked="" type="checkbox"/> YES / NO
11. Are samples in proper containers? (see reference chart)			<input checked="" type="checkbox"/> YES / NO
12. Are all samples within holding times for requested analysis?			<input checked="" type="checkbox"/> YES / NO
13. Are all sample containers intact? (i.e. not broken, leaking...)			<input checked="" type="checkbox"/> YES / NO
14. Are samples individually bagged?			<input checked="" type="checkbox"/> YES / NO
15. Are all volatile samples headspace-free (< pea-size for waters)?		<input checked="" type="checkbox"/> N/A	YES / NO
16. Shipping container (circle one):	<input checked="" type="checkbox"/> Cooler / <input type="checkbox"/> Box / <input type="checkbox"/> Other:		
17. Type of packing material used (circle one):	<input checked="" type="checkbox"/> Bubble Wrap / <input type="checkbox"/> Styrofoam Peanuts / <input type="checkbox"/> Vermiculite / <input type="checkbox"/> None		
18. Refrigerant (circle one):	<input checked="" type="checkbox"/> Gel Ice / <input type="checkbox"/> Loose Ice / <input type="checkbox"/> Other:		<input type="checkbox"/> None
19. Was refrigerant frozen upon receipt?		<input checked="" type="checkbox"/> YES	NO
20. Cooler temperature(s):	#3) 5.1°C #4) 11.7°C #1: 4.8 °C	#2: 3.7 °C	

Sample tagging check for QC:

Sample ID's issued in order of appearance on C-O-C:	YES	NO
Tags placed in appropriate areas of sample containers:	<input checked="" type="checkbox"/> YES	NO

Initials of reviewer: \_\_\_\_\_

Describe any "NO" items from checklist above: Sample #1 Time on label = 21.00, on C-O-C = 2210, call #15 note  
Samples # 14-25 only four of each not five as 1/5 End  
Oil COCl. Samples # 1-13 only two of each not five as 1/5 End

Client contacted: YES / NO / N/A Date: \_\_\_\_\_ Name of person contacted: \_\_\_\_\_

Describe client instructions or actions taken: \_\_\_\_\_

URGENT-  
VERIFICATION  
REQUESTED.



**MultiChem**  
ANALYTICAL SERVICES

FAX Cover Sheet

To:	Lynn DeGeorge	FAX Number:	248-8884
Company:	Montgomery Watson	Date:	3/26/98
From:	Victoria (Tari) Bayly	No. of Pages:	2
Phone:	907/248-8273	(including	
Fax:	907/248/8274	cover page):	

Lynn,

A couple of questions have arisen regarding the Liberty Island project. I apologize that I did not have time to go over this in detail before the samples arrived, but if we could clarify/verify now we will still be OK for TAT/Holding times, etc.

1) The original fax you sent to Mike with the compound lists and limits... we are assuming that the limits we are using are the ones under the PSDDA (1) SL column for screening levels (we have not seen the "blessed" copy of the QAAP yet). Based on this, it appears that according to the requested methods you have listed we would not be able to meet the limit for one compound. Under chlorinated hydrocarbons, 1,2,4-Trichlorobenzene by 8270 we can only reach a 15.4 mg/Kg reporting limit (table lists 13 mg/Kg). By 8260, we can reach a 5.0 mg/Kg, which is less than the limit requested. Which method would you prefer? Also, do you need us to report at the limits in your table, or can we report our limits as long as they are lower than yours?

Action: Please analyze for 1,2,4-trichlorobenzene using Method 8260 allowing us to achieve the lower detection limit (5.0 mg/kg).

You may use your reporting limits when providing the analytical results. 8270 limits

2) Two compounds requested by 8270 are actually analyzed by 8081... Hexachlorobenzene and hexachlorobutadiene. By 8270 we would not be able to meet the limits, and they are not on our normal list. We would need to add 8081 to the CDC to accommodate these two compounds if you indeed require them. 17.4  
10.1

Action: Please analyze for Hexachlorobenzene and Hexachlorobutadiene using Method 8081 instead of 8270 allowing us to achieve the lower detection limit.

Thank you for your help!

Signed *L. DeGeorge*

Date 3-31-97

*JTB*



**ADEC DATA PACKAGE**  
8260, 8270, TOC  
8081, TSS

Client:

Montgomery Watson  
Lynn DeGeorge

Project Name:

Liberty Island Sediments

Project Number:

1189002.330101

Accession No.:

821354

**DATA PACKAGE**  
Grain Size and Particle Size  
Distribution

Client:

Montgomery Watson  
Lynn DeGeorge

Project Name:  
Liberty Island Sediments

Project Number:  
1189002.330101

Accession No.:  
821354



A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXL102SD01(01)

Submitted by Client

PI = Non Plastic

**PARTICLE-SIZE DISTRIBUTION**

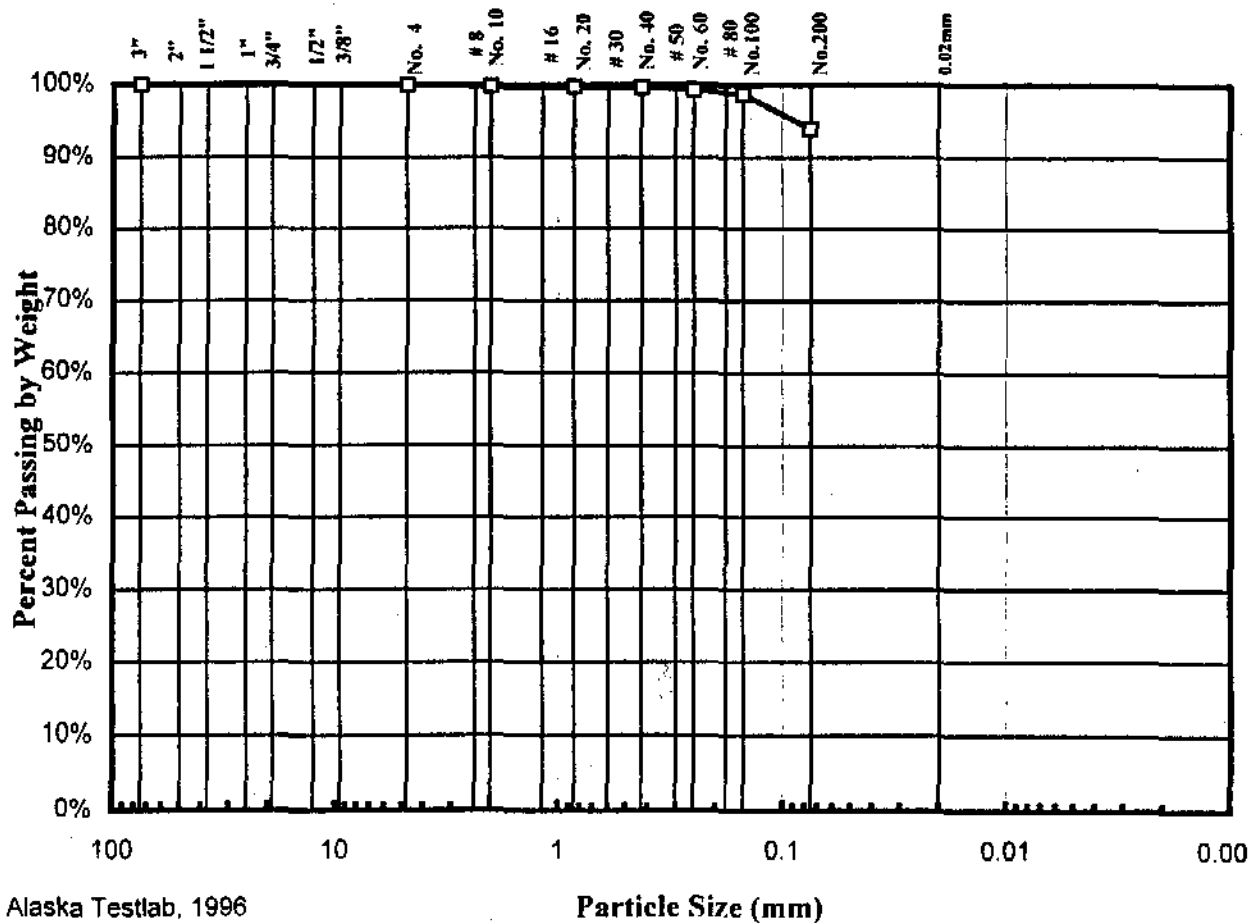
W.O. A27722

Lab No. 515

Received: March 20, 1998

Engineering Classification: SILT, ML

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = ~0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	100%
Total Wt. of Coarse Fraction = 346.4g	
No. 8	
No. 10	100%
No. 16	
No. 20	100%
No. 30	
No. 40	100%
No. 50	
No. 60	99%
No. 80	
No. 100	99%
No. 200	94%
Total Wt. of Fine Fraction = 0g	
0.02 mm	

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David L. Andersen, P.E., General Manager



A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXLI02SD02(03)

Submitted by Client

PI = Non Plastic

## PARTICLE-SIZE DISTRIBUTION

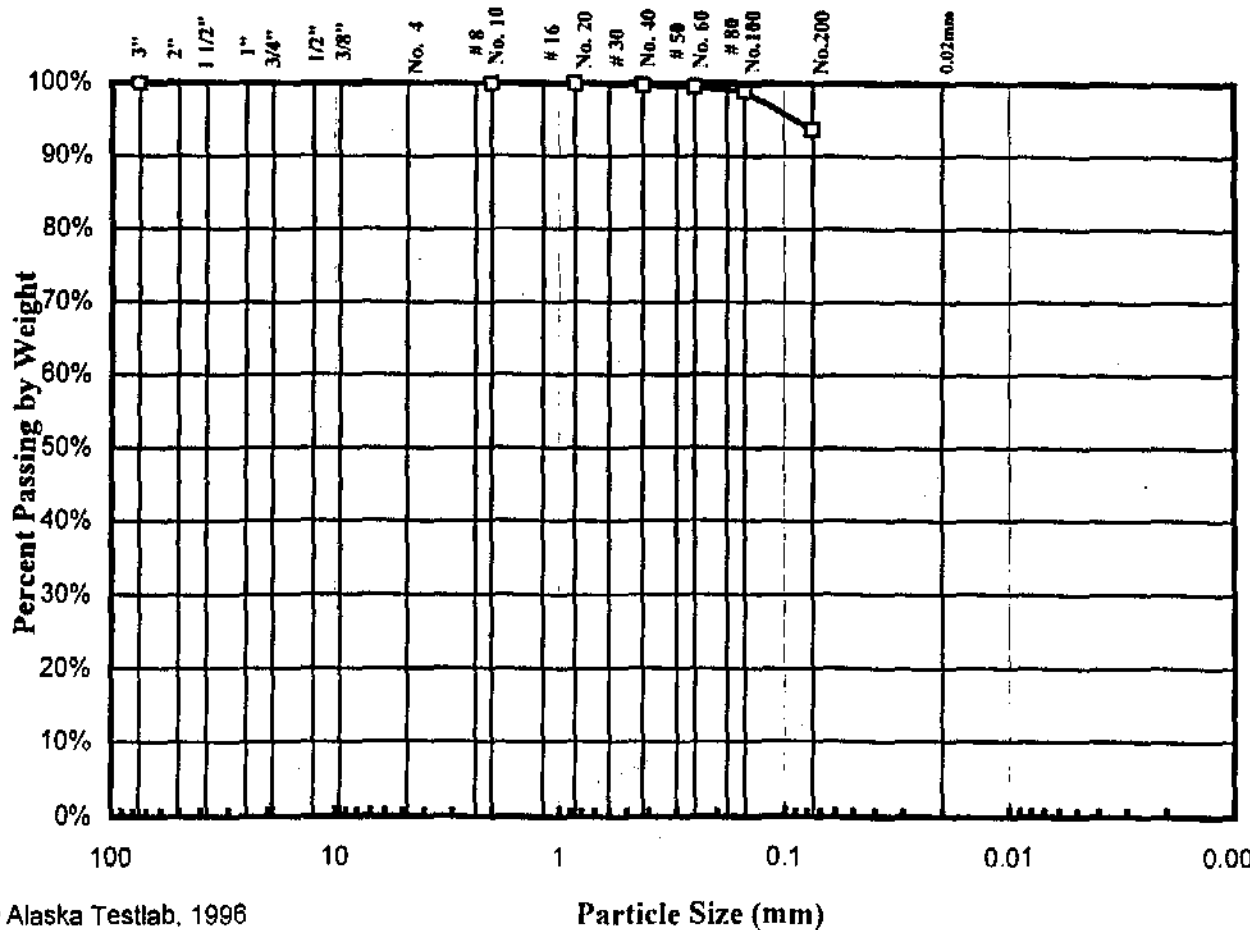
W.O. A27722

Lab No. 516

Received: March 20, 1998

Engineering Classification: SILT, ML

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = -0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	
Total Wt. of Coarse Fraction = 141.5g	
No. 8	
No. 10	100%
No. 16	
No. 20	100%
No. 30	
No. 40	100%
No. 50	
No. 60	100%
No. 80	
No. 100	99%
No. 200	94%
Total Wt. of Fine Fraction = 0g	
0.02 mm	

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David L. Andersen, P.E., General Manager



A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXLI02SD03(09)

Submitted by Client

LL = 52, PI = 21

**PARTICLE-SIZE DISTRIBUTION**

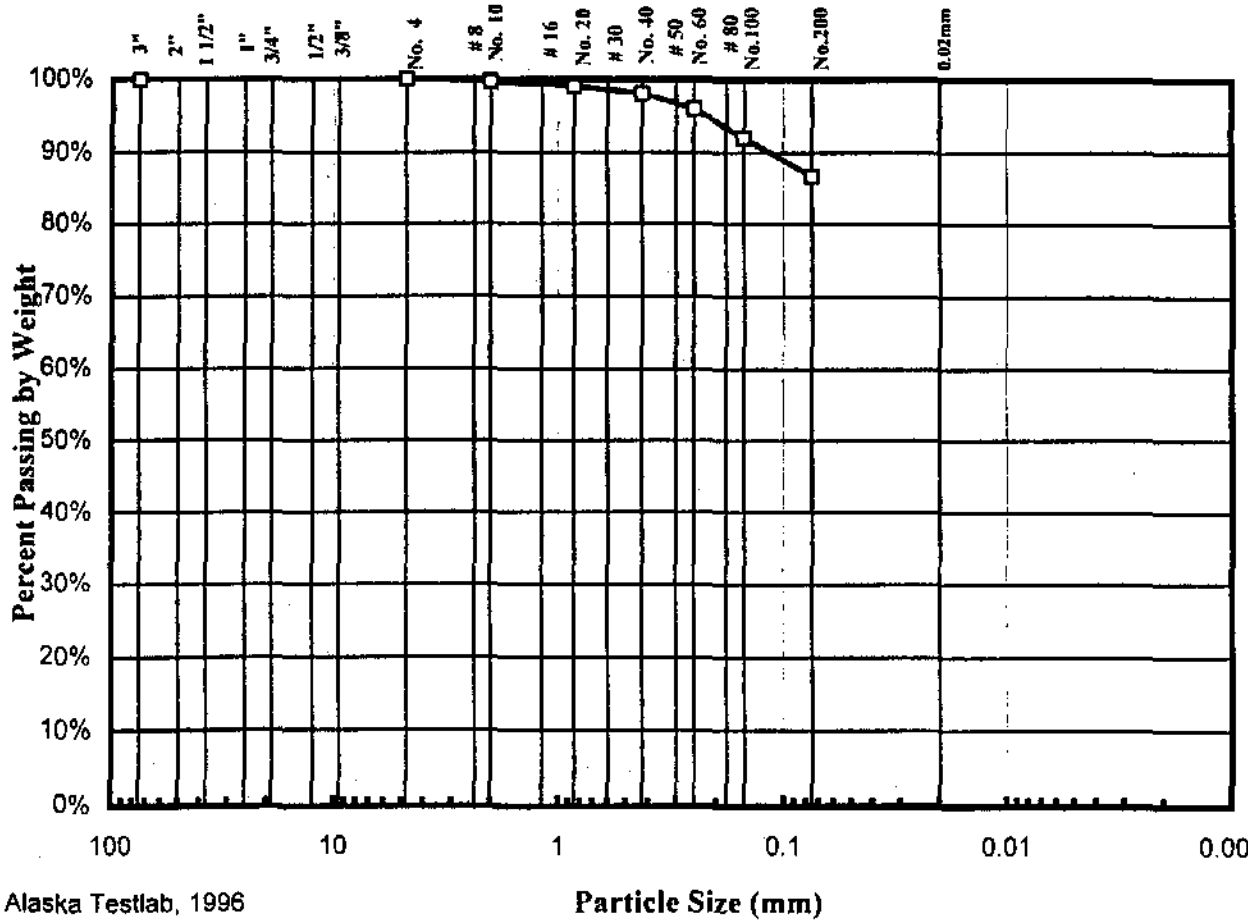
W.O. A27722

Lab No. 517

Received: March 20, 1998

Engineering Classification: Elastic SILT, MH

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = -0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	100%
Total Wt. of Coarse Fraction = 329.2g	
No. 8	
No. 10	100%
No. 16	
No. 20	99%
No. 30	
No. 40	98%
No. 50	
No. 60	96%
No. 80	
No. 100	92%
No. 200	87%
Total Wt. of Fine Fraction = 0g	
0.02 mm	

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David L. Andersen, P.E., General Manager



A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXLI09SD01(01)

Submitted by Client

PI = Non Plastic

**PARTICLE-SIZE DISTRIBUTION**

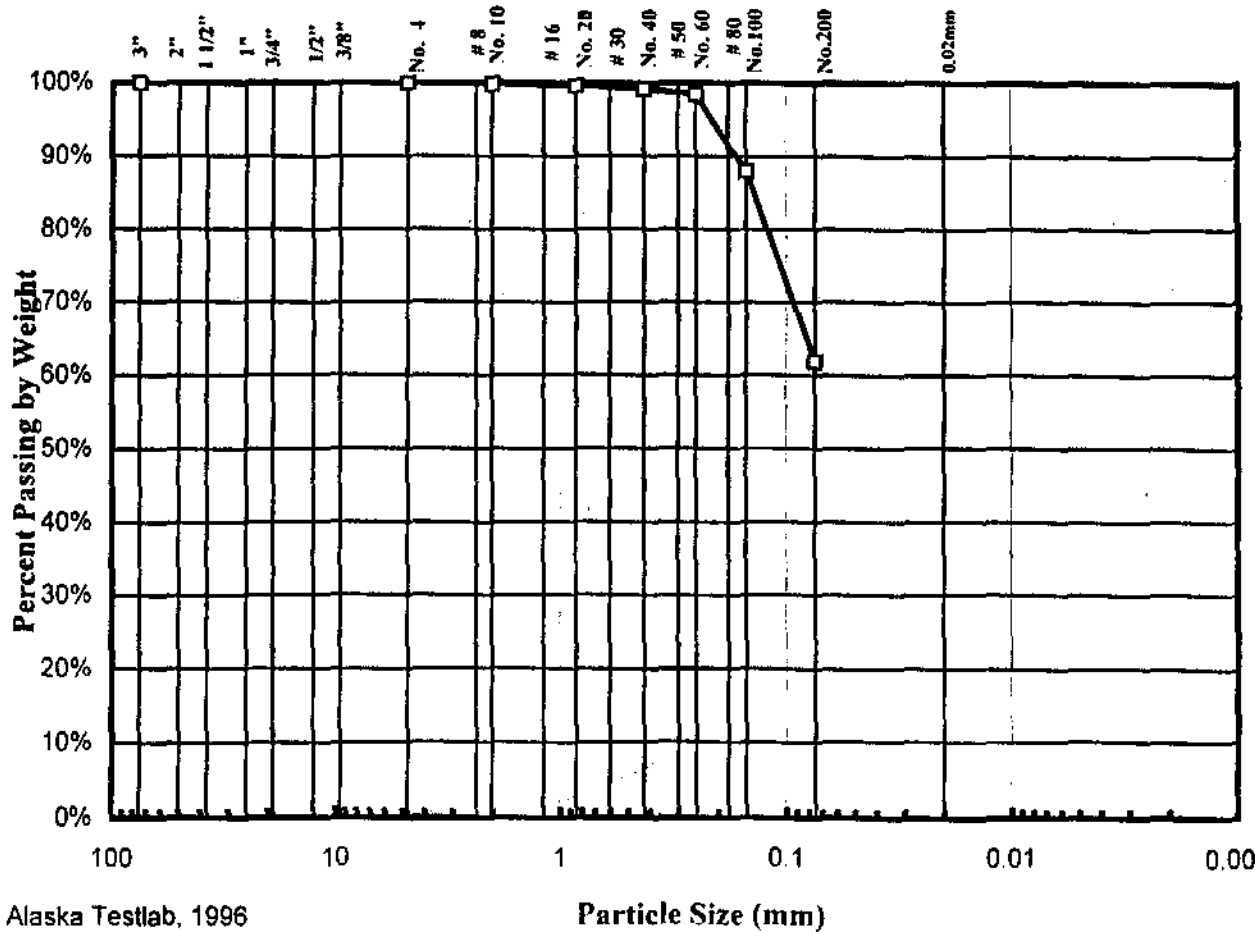
W.O. A27722

Lab No. 518

Received: March 20, 1998

Engineering Classification: Sandy SILT, ML

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = ~0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	100%
Total Wt. of Coarse Fraction = 363g	
No. 8	
No. 10	100%
No. 16	
No. 20	100%
No. 30	
No. 40	99%
No. 50	
No. 60	98%
No. 80	
No. 100	88%
No. 200	62%
Total Wt. of Fine Fraction = 0g	
0.02 mm	

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David L. Andersen, P.E., General Manager



A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXLI109SD02(03)

Submitted by Client

PI = Non Plastic

**PARTICLE-SIZE DISTRIBUTION**

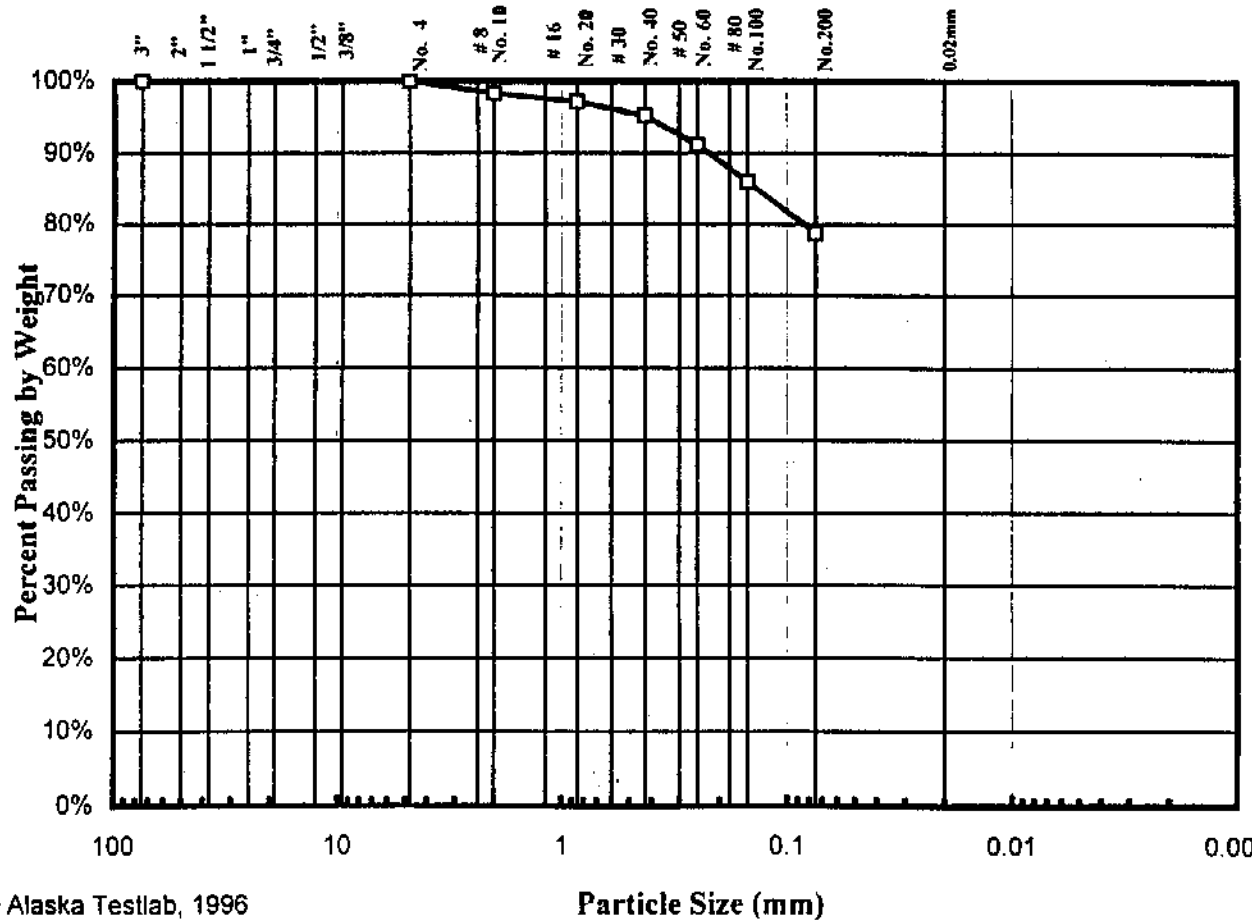
W.O. A27722

Lab No. 519

Received: March 20, 1998

Engineering Classification: SILT with Sand, ML

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = ~0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	100%
Total Wt. of Coarse Fraction = 305g	
No. 8	
No. 10	98%
No. 16	
No. 20	97%
No. 30	
No. 40	95%
No. 50	
No. 60	91%
No. 80	
No. 100	86%
No. 200	79%
Total Wt. of Fine Fraction = 0g	
0.02 mm	

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David L. Andersen, P.E., General Manager



A Division of DDWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BXL109SD03(09)

Submitted by Client

PI = Non Plastic

**PARTICLE-SIZE DISTRIBUTION**

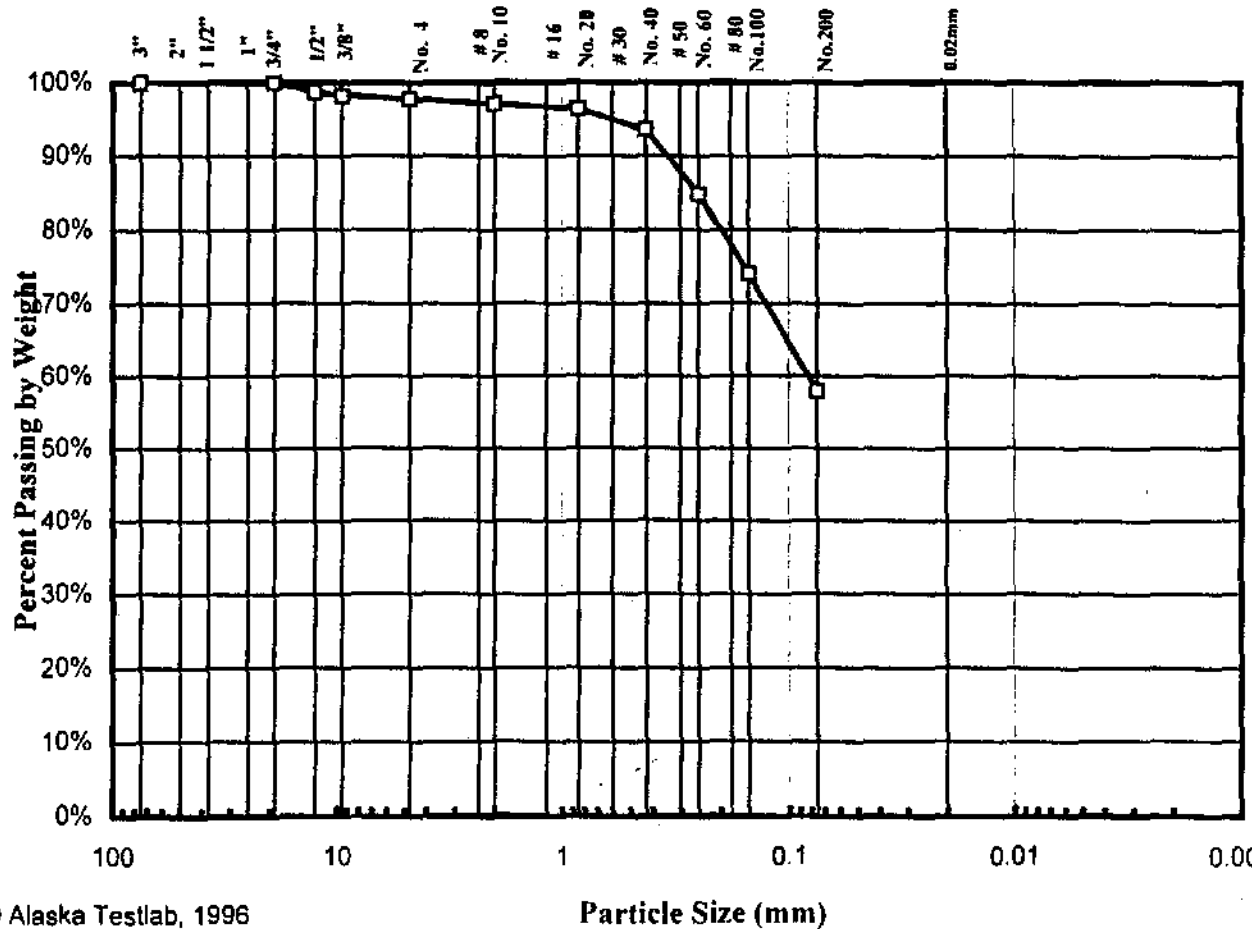
W.O. A27722

Lab No. 520

Received: March 20, 1998

Engineering Classification: Sandy SILT, ML

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = ~0%	
3"	
2"	
1 1/2"	
1"	
3/4"	100%
1/2"	99%
3/8"	98%
No. 4	98%
Total Wt. of Coarse Fraction = 526g	
No. 8	
No. 10	97%
No. 16	
No. 20	96%
No. 30	
No. 40	94%
No. 50	
No. 60	85%
No. 80	
No. 100	74%
No. 200	58%
Total Wt. of Fine Fraction = 514.1g	
0.02 mm	

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David L. Andersen, P.E., General Manager





A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

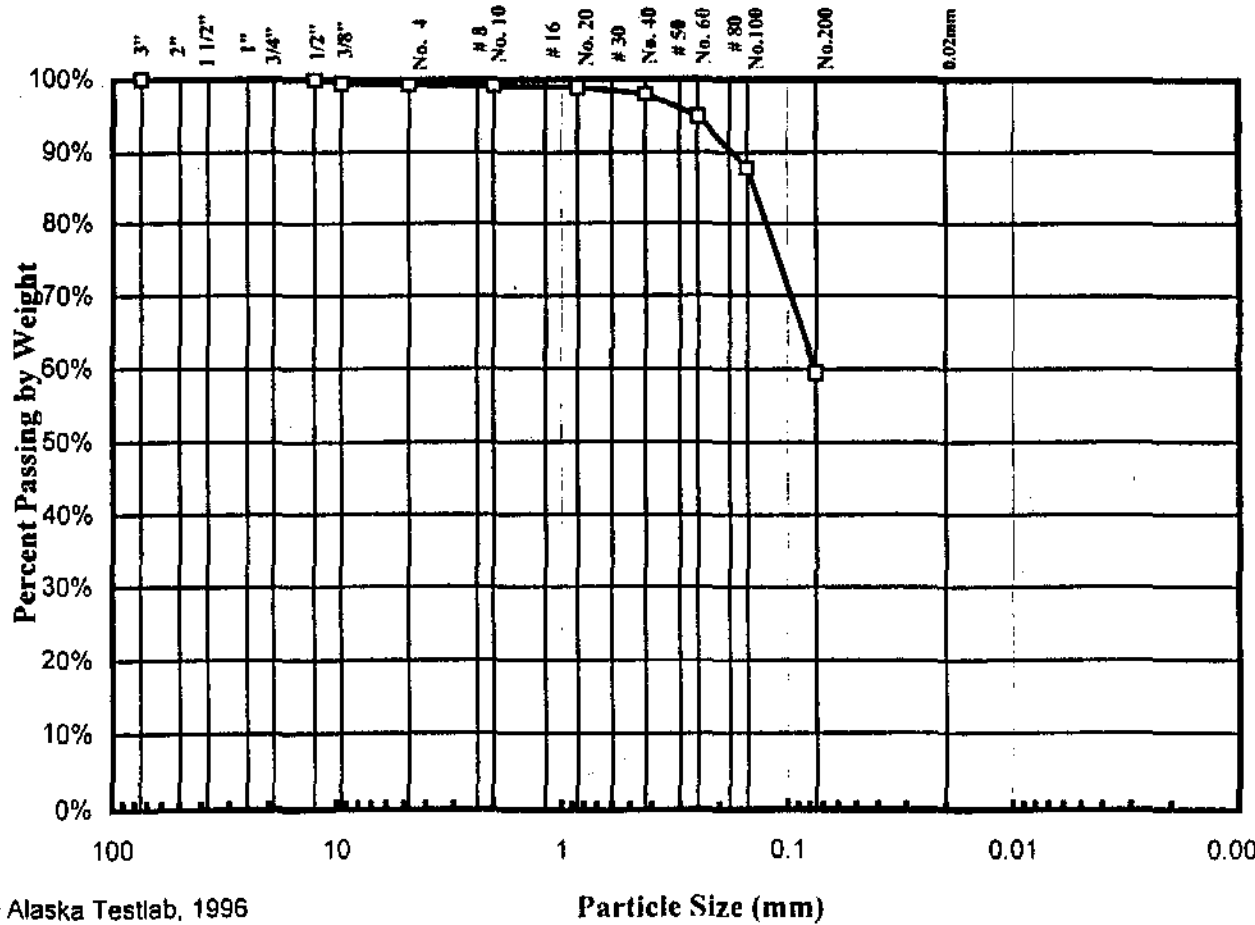
Client: MultiChem Analytical Services  
 Project: Liberty Island P.O. AK-8517

Location: 98BPXLI14SD01(01)  
 Submitted by Client  
 PI = Non Plastic

**PARTICLE-SIZE DISTRIBUTION**

W.O. A27722  
 Lab No. 521  
 Received: March 20, 1998

Engineering Classification: Sandy SILT, ML  
 Frost Classification: F4



SIZE PASSING SPECIFICATION	
+3 in Not Included in Test = ~0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	100%
3/8"	99%
No. 4	99%
Total Wt. of Coarse Fraction = 906g	
No. 8	
No. 10	99%
No. 16	
No. 20	99%
No. 30	
No. 40	98%
No. 50	
No. 60	95%
No. 80	
No. 100	88%
No. 200	59%
Total Wt. of Fine Fraction = 340.7g	
0.02 mm	

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David L. Andersen, P.E., General Manager



A Division of DOWL, Incorporated,  
4040 B Street Anchorage, Alaska 99503  
(907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXL114SD02(03)

Submitted by Client

PI = Non Plastic

**PARTICLE-SIZE  
DISTRIBUTION**

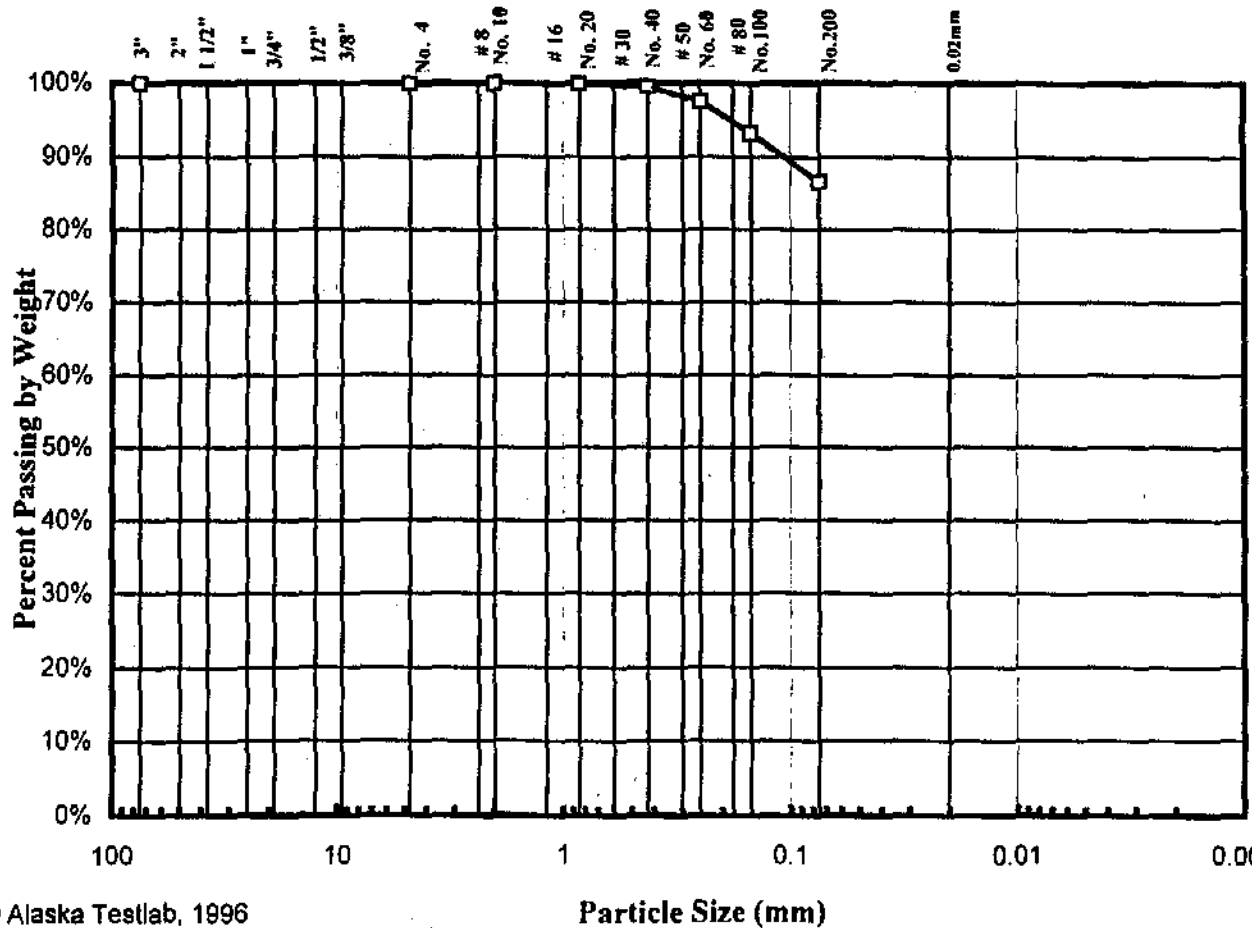
W.O. A27722

Lab No. 522

Received: March 20, 1998

Engineering Classification: SILT, ML

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = -0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	100%
Total Wt. of Coarse Fraction = 360.1g	
No. 8	
No. 10	100%
No. 16	
No. 20	100%
No. 30	
No. 40	100%
No. 50	
No. 60	98%
No. 80	
No. 100	93%
No. 200	87%
Total Wt. of Fine Fraction = 0g	
0.02 mm	

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David L. Andersen, P.E., General Manager



A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXLI14SD03(09)

Submitted by Client

PI = Non Plastic

## PARTICLE-SIZE DISTRIBUTION

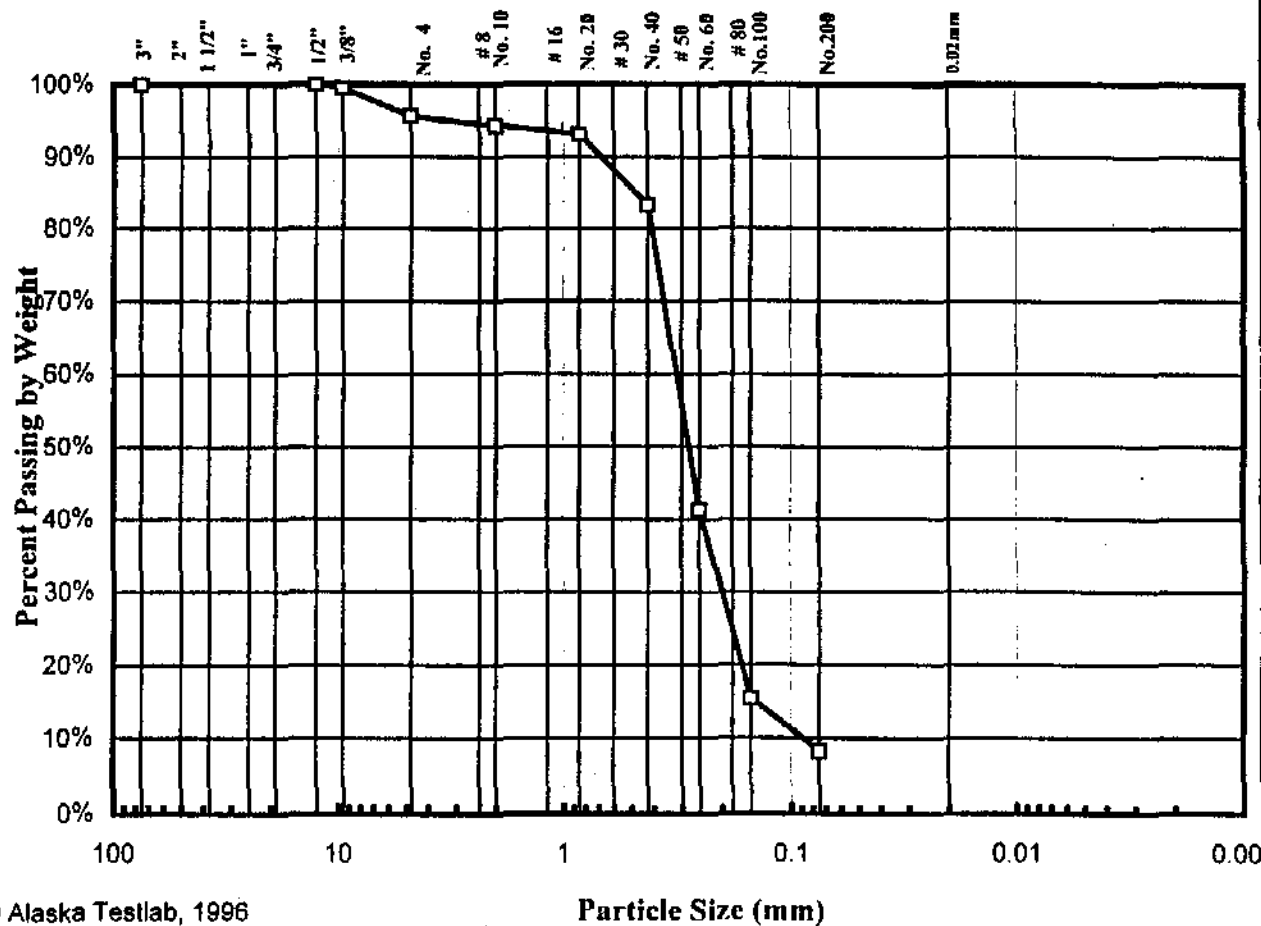
W.O. A27722

Lab No. 523

Received: March 20, 1998

**Engineering Classification: Poorly Graded SAND with Silt, SP-SM**

**Frost Classification: Not Measured**



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = -0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	100%
3/8"	99%
No. 4	96%
Total Wt. of Coarse Fraction = 848.6g	
No. 8	
No. 10	94%
No. 16	
No. 20	93%
No. 30	
No. 40	83%
No. 50	
No. 60	41%
No. 80	
No. 100	15%
No. 200	8.3%
Total Wt. of Fine Fraction = 380.4g	
0.02 mm	

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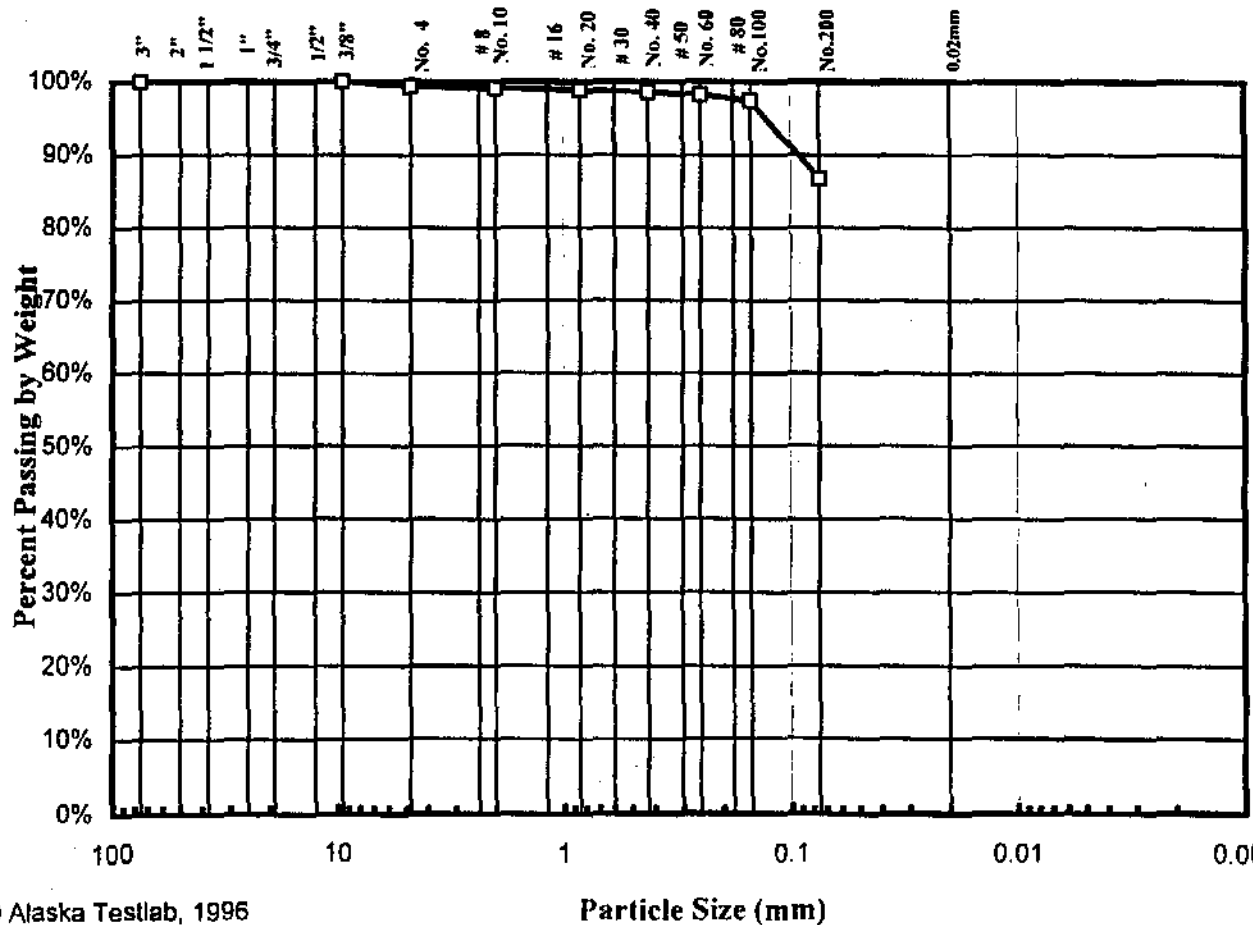
A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services  
 Project: Liberty Island P.O. AK-8517  
 Location: 98BPXLI30SD01(01)  
 Submitted by Client  
 PI = Non Plastic

**PARTICLE-SIZE DISTRIBUTION**

W.O. A27722  
 Lab No. 524  
 Received: March 20, 1998

Engineering Classification: SILT, ML  
 Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = -0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	100%
No. 4	99%
Total Wt. of Coarse Fraction = 491.9g	
No. 8	
No. 10	99%
No. 16	
No. 20	99%
No. 30	
No. 40	99%
No. 50	
No. 60	98%
No. 80	
No. 100	97%
No. 200	87%
Total Wt. of Fine Fraction = 307.8g	
0.02 mm	

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**A Division of DOWL, Incorporated**  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXLI30SD02(03)

Submitted by Client

PI = Non Plastic

**PARTICLE-SIZE DISTRIBUTION**

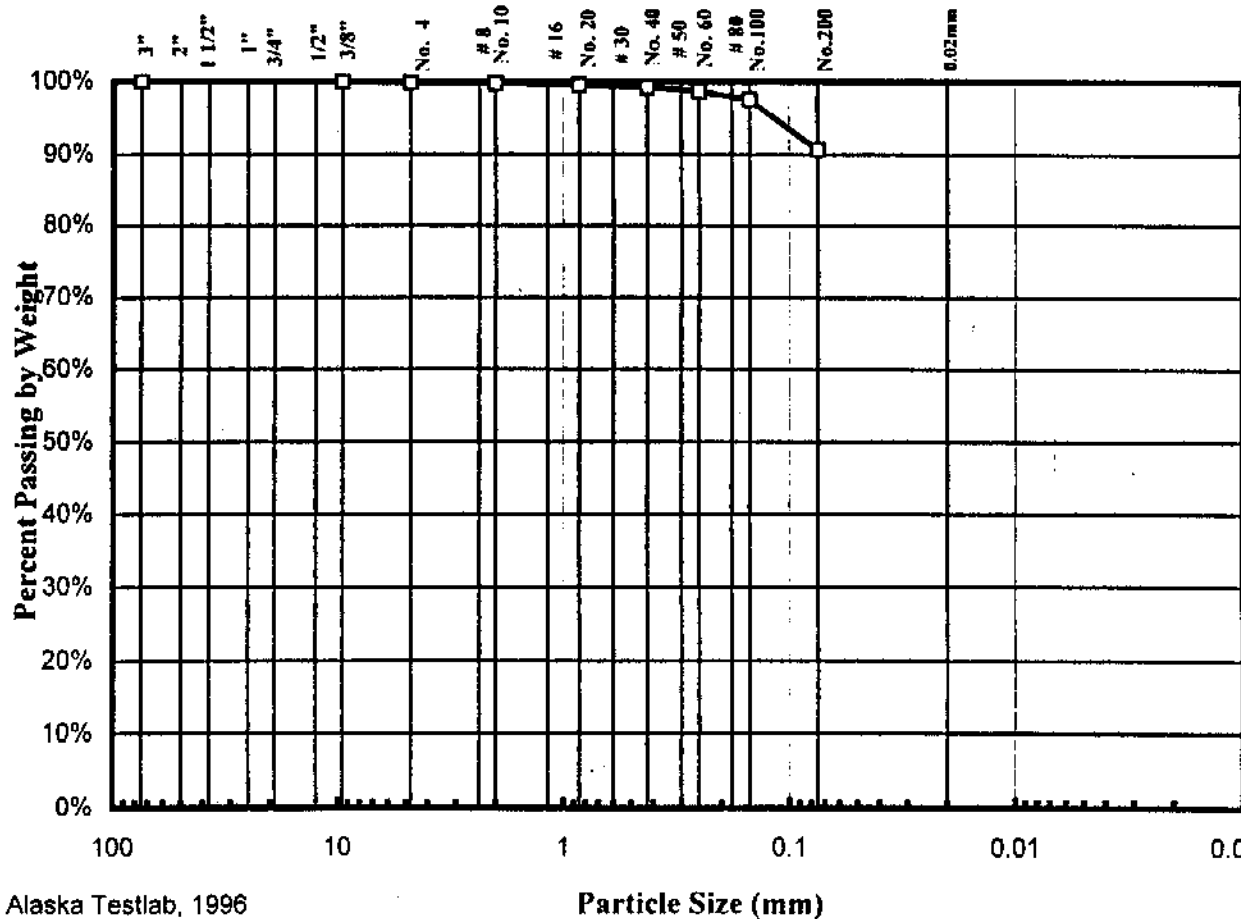
W.O. A27722

Lab No. 525

Received: March 20, 1998

Engineering Classification: SILT, ML

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = -0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	100%
No. 4	100%
Total Wt. of Coarse Fraction = 623.4g	
No. 8	
No. 10	100%
No. 16	
No. 20	100%
No. 30	
No. 40	99%
No. 50	
No. 60	99%
No. 80	
No. 100	98%
No. 200	91%
Total Wt. of Fine Fraction = 339.2g	
0.02 mm	

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A Division of DOWL, Incorporated  
 4040 B Street Anchorage, Alaska 99503  
 (907) 562-2000 FAX (907) 563-3953

Client: MultiChem Analytical Services

Project: Liberty Island P.O. AK-8517

Location: 98BPXL130SD03(09)

Submitted by Client

LL = 52, PI = 24

**PARTICLE-SIZE DISTRIBUTION**

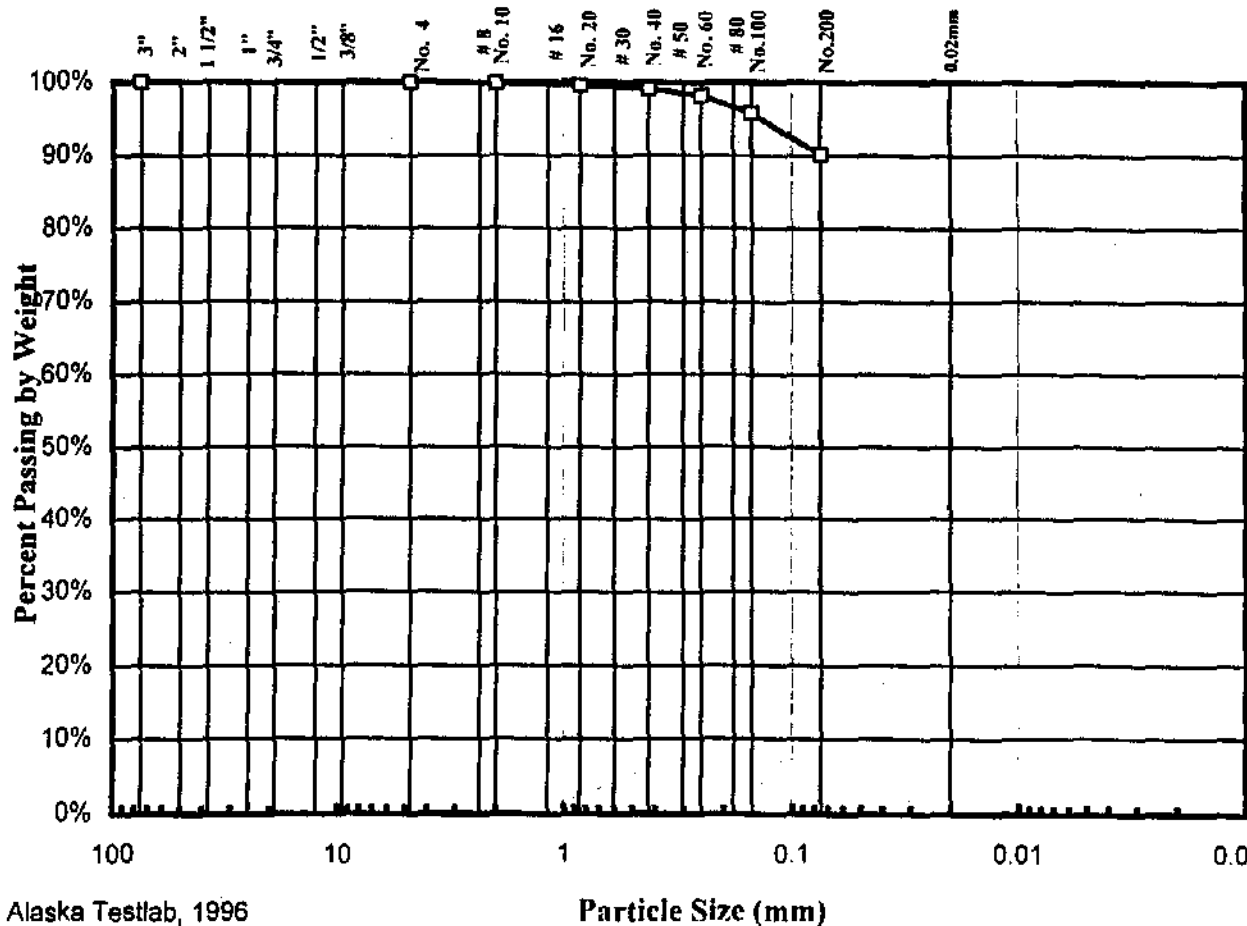
W.O. A27722

Lab No. 526

Received: March 20, 1998

Engineering Classification: Fat CLAY, CH

Frost Classification: F4



SIZE	PASSING SPECIFICATION
+3 in Not Included in Test = ~0%	
3"	
2"	
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	100%
Total Wt. of Coarse Fraction = 306.7g	
No. 8	
No. 10	100%
No. 16	
No. 20	100%
No. 30	
No. 40	99%
No. 50	
No. 60	98%
No. 80	
No. 100	96%
No. 200	90%
Total Wt. of Fine Fraction = 306.7g	
0.02 mm	

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**MultiChem**  
ANALYTICAL SERVICES

MAS I.D. # 821354  
UST - 026

April 24, 1998

Montgomery Watson  
4100 Spenard  
Anchorage AK 99517-2901

Attention : Lynn DeGeorge

Project Number : 1189002.330101

Project Name : Liberty Island

Dear Ms. DeGeorge:

On March 21, 1998, MultiChem Analytical Services received 27 samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

This is a partial report including all analyses with the exception of the semivolatiles analysis. This data will be sent as soon as it becomes available.

Sincerely,

Elaine M. Walker  
Project Manager

EMW/hal/trm

Enclosure

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

SAMPLE CROSS REFERENCE SHEET

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MAS #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
821354-1	98BPXLI02WA01	03/18/98	WATER
821354-2	98BPXLI02WA02	03/18/98	WATER
821354-3	98BPXLI02WA03	03/18/98	WATER
821354-4	98BPXLI09WA01	03/18/98	WATER
821354-5	98BPXLI09WA02	03/18/98	WATER
821354-6	98BPXLI09WA03	03/18/98	WATER
821354-7	98BPXLI14WA01	03/18/98	WATER
821354-8	98BPXLI14WA02	03/18/98	WATER
821354-9	98BPXLI30WA03	03/19/98	WATER
821354-10	98BPXLI30WA01	03/19/98	WATER
821354-11	98BPXLI30WA02	03/19/98	WATER
821354-12	98BPXLI30WA62	03/19/98	WATER
821354-13	98BPXLI02WA61	03/18/98	WATER
821354-14	98BPXLI02SD01 (01)	03/18/98	SEDIMENT
821354-15	98BPXLI02SD02 (03)	03/18/98	SEDIMENT
821354-16	98BPXLI02SD03 (09)	03/18/98	SEDIMENT
821354-17	98BPXLI09SD01 (01)	03/18/98	SEDIMENT
821354-18	98BPXLI09SD02 (03)	03/18/98	SEDIMENT
821354-19	98BPXLI09SD03 (09)	03/18/98	SEDIMENT
821354-20	98BPXLI14SD01 (01)	03/18/98	SEDIMENT
821354-21	98BPXLI14SD02 (03)	03/18/98	SEDIMENT
821354-22	98BPXLI14SD03 (09)	03/18/98	SEDIMENT
821354-23	98BPXLI30SD01 (01)	03/19/98	SEDIMENT
821354-24	98BPXLI30SD02 (03)	03/19/98	SEDIMENT
821354-25	98BPXLI30SD03 (09)	03/19/98	SEDIMENT
821354-26	98BPXLI30SD62 (03)	03/19/98	SEDIMENT
821354-27	98BPXLI02SD62 (03)	03/18/98	SEDIMENT

----- TOTALS -----

MATRIX	# SAMPLES
WATER	13
SEDIMENT	14

MAS STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.



MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

ANALYTICAL SCHEDULE

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
VOLATILE ORGANICS ANALYSIS	GCMS	EPA 8260A	R
HEXACHLOROBENZENE/HEXACHLOROBUTADIENE	GC/ECD	EPA 8081A MODIFIED	R
TOTAL ORGANIC CARBON	TOC ANALYZER	EPA 415.1	R
TOTAL ORGANIC CARBON	TOC ANALYZER	EPA 415.1 MODIFIED	R
TOTAL SUSPENDED SOLIDS	GRAVIMETRIC	EPA 160.2	R
MOISTURE	GRAVIMETRIC	CLP ILM04.0	R

R = MAS - Renton  
ANC = MAS - Anchorage  
SUB = Subcontract

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

CASE NARRATIVE

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

-----  
CASE NARRATIVE: VOLATILE ORGANICS ANALYSIS  
-----

The following anomaly was associated with the preparation and/or analysis of the samples in this accession:

The 118% recovery of the surrogate spiking compound bromofluorobenzene exceeded the current MultiChem recovery range of 66-116% in the sample identified as 821354-17 (98BPXLI09SD01(01)). Since this anomaly indicated a potential high bias with no reportable concentration of any target compound found in the sample, the anomaly was flagged "H" for reporting purposes. No further corrective action was performed.

All other associated quality assurance/quality control (QA/QC) parameters were within established MultiChem control limits.

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: N/A
PROJECT #	: 1189002.330101	DATE RECEIVED	: N/A
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<2
TETRACHLOROETHENE	<2
ETHYLBENZENE	<2
TOTAL XYLENES	<2
1,3-DICHLOROBENZENE	<2
1,4-DICHLOROBENZENE	<2
1,2-DICHLOROBENZENE	<2
1,2,4-TRICHLOROBENZENE	<5

SURROGATE PERCENT RECOVERY		LIMITS
1,2-DICHLOROETHANE-D4	102	67 - 150
TOLUENE-D8	104	85 - 116
BROMOFLUOROBENZENE	96	66 - 116

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: N/A
PROJECT #	: 1189002.330101	DATE RECEIVED	: N/A
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<2
TETRACHLOROETHENE	<2
ETHYLBENZENE	<2
TOTAL XYLENES	<2
1,3-DICHLOROBENZENE	<2
1,4-DICHLOROBENZENE	<2
1,2-DICHLOROBENZENE	<2
1,2,4-TRICHLOROBENZENE	<5

SURROGATE PERCENT RECOVERY		LIMITS
1,2-DICHLOROETHANE-D4	102	67 - 150
TOLUENE-D8	105	85 - 116
BROMOFLUOROBENZENE	95	66 - 116

MAS I.D. # 821354-14

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI02SD01(01)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROETHENE	<3
1,4-DICHLOROETHENE	<3
1,2-DICHLOROETHENE	<3
1,2,4-TRICHLOROETHENE	<7

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	104	67 - 150
TOLUENE-D8	103	85 - 116
BROMOFLUOROBENZENE	98	66 - 116

MAS I.D. # 821354-15

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLIQ2SD02(03)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<7

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	105	67 - 150
TOLUENE-D8	104	85 - 116
BROMOFLUOROBENZENE	98	66 - 116

MAS I.D. # 821354-16

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI02SD03(09)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<8

SURROGATE PERCENT RECOVERY		LIMITS
1,2-DICHLOROETHANE-D4	102	67 - 150
TOLUENE-D8	105	85 - 116
BROMOFLUOROBENZENE	98	66 - 116

MAS I.D. # 821354-17

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI09SD01(01)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<8

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	102	67 - 150
TOLUENE-D8	103	85 - 116
BROMOFLUOROBENZENE	118 H	66 - 116

H = Out of limits.



MAS I.D. # 821354-18



VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI09SD02 (03)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<8

SURROGATE PERCENT RECOVERY		LIMITS
1,2-DICHLOROETHANE-D4	104	67 - 150
TOLUENE-D8	104	85 - 116
BROMOFLUOROBENZENE	99	66 - 116

MAS I.D. # 821354-19

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI09SD03(09)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROENZENE	<3
1,4-DICHLOROENZENE	<3
1,2-DICHLOROENZENE	<3
1,2,4-TRICHLOROENZENE	<7

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	105	67 - 150
TOLUENE-D8	104	85 - 116
BROMOFLUOROBENZENE	97	66 - 116

MAS I.D. # 821354-20

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI14SD01(01)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROETHENE	<3
1,4-DICHLOROETHENE	<3
1,2-DICHLOROETHENE	<3
1,2,4-TRICHLOROETHENE	<6

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	101	67 - 150
TOLUENE-D8	101	85 - 116
BROMOFLUOROBENZENE	116	66 - 116

MAS I.D. # 821354-21

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI14SD02(03)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<6

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	107	67 - 150
TOLUENE-D8	104	85 - 116
BROMOFLUOROBENZENE	99	66 - 116

MAS I.D. # 821354-22

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI14SD03(09)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<2
TETRACHLOROETHENE	<2
ETHYLBENZENE	<2
TOTAL XYLENES	<2
1,3-DICHLOROBENZENE	<2
1,4-DICHLOROBENZENE	<2
1,2-DICHLOROBENZENE	<2
1,2,4-TRICHLOROBENZENE	<6

SURROGATE PERCENT RECOVERY		LIMITS
1,2-DICHLOROETHANE-D4	105	67 - 150
TOLUENE-D8	104	85 - 116
BROMOFLUOROBENZENE	99	66 - 116

MAS I.D. # 821354-23

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI30SD01(01)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

TRICHLOROETHENE .....	<3
TETRACHLOROETHENE .....	<3
ETHYLBENZENE .....	<3
TOTAL XYLENES .....	<3
1,3-DICHLOROBENZENE .....	<3
1,4-DICHLOROBENZENE .....	<3
1,2-DICHLOROBENZENE .....	<3
1,2,4-TRICHLOROBENZENE .....	<8

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	104	67 - 150
TOLUENE-D8 .....	104	85 - 116
BROMOFLUOROBENZENE	99	66 - 116

MAS I.D. # 821354-24

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI30SD02(03)	DATE ANALYZED	: 03/30/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<7

SURROGATE PERCENT RECOVERY		LIMITS
1,2-DICHLOROETHANE-D4	103	67 - 150
TOLUENE-D8	103	85 - 116
BROMOFLUOROBENZENE	106	66 - 116

MAS I.D. # 821354-25

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI30SD03(09)	DATE ANALYZED	: 03/31/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<6

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	107	67 - 150
TOLUENE-D8	104	85 - 116
BROMOFLUOROBENZENE	98	66 - 116



MAS I.D. # 821354-26

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI30SD62(03)	DATE ANALYZED	: 03/31/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
TRICHLOROETHENE	<3
TETRACHLOROETHENE	<3
ETHYLBENZENE	<3
TOTAL XYLENES	<3
1,3-DICHLOROBENZENE	<3
1,4-DICHLOROBENZENE	<3
1,2-DICHLOROBENZENE	<3
1,2,4-TRICHLOROBENZENE	<7

SURROGATE PERCENT RECOVERY		LIMITS
1,2-DICHLOROETHANE-D4	107	67 - 150
TOLUENE-D8	106	85 - 116
BROMOFLUOROBENZENE	97	66 - 116

MAS I.D. # 821354-27

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: 98BPXLI02SD62(03)	DATE ANALYZED	: 03/31/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

TRICHLOROETHENE .....	<3
TETRACHLOROETHENE .....	<3
ETHYLBENZENE .....	<3
TOTAL XYLENES .....	<3
1,3-DICHLOROBENZENE .....	<3
1,4-DICHLOROBENZENE .....	<3
1,2-DICHLOROBENZENE .....	<3
1,2,4-TRICHLOROBENZENE .....	<7

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	106	67 - 150
TOLUENE-D8 .....	104	85 - 116
BROMOFLUOROBENZENE	99	66 - 116

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND  
SAMPLE MATRIX : SOIL  
EPA METHOD : 8260A

SAMPLE I.D. # : BLANK  
DATE EXTRACTED : N/A  
DATE ANALYZED : 03/30/98  
UNITS : ug/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
TRICHLOROETHENE	<2.00	50.0	49.4	99	N/A	N/A	N/A
CONTROL LIMITS				% REC.			RPD
TRICHLOROETHENE				81 - 129			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
1,2-DICHLOROETHANE-D4		103		N/A		67 - 150	
TOLUENE-D8		104		N/A		85 - 116	
BROMOFLUOROBENZENE		97		N/A		66 - 116	

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND  
SAMPLE MATRIX : SOIL  
EPA METHOD : 8260A

SAMPLE I.D. # : BLANK  
DATE EXTRACTED : N/A  
DATE ANALYZED : 03/30/98  
UNITS : ug/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
TRICHLOROETHENE	<2.00	50.0	49.0	98	N/A	N/A	N/A
CONTROL LIMITS				% REC.			RPD
TRICHLOROETHENE				81 - 129			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
1,2-DICHLOROETHANE-D4		101		N/A		67 - 150	
TOLUENE-D8		105		N/A		85 - 116	
BROMOFLUOROBENZENE		95		N/A		66 - 116	

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND  
SAMPLE MATRIX : SOIL  
EPA METHOD : 8260A

SAMPLE I.D. # : 821354-17  
DATE EXTRACTED : N/A  
DATE ANALYZED : 03/30/98  
UNITS : ug/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
TRICHLOROETHENE	<3.39	84.7	75.0	89	69.9	83	7
CONTROL LIMITS				% REC.			RPD
TRICHLOROETHENE				77 - 134			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
1,2-DICHLOROETHANE-D4		108		104		67 - 150	
TOLUENE-DB		100		102		85 - 116	
BROMOFLUOROBENZENE		115		101		66 - 116	

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

CASE NARRATIVE

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

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CASE NARRATIVE: HEXACHLOROBEN~~X~~ENE/HEXACHLOROBUTADIENE ANALYSIS  
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There were no anomalies associated with the preparation and/or analysis of the samples in this accession.

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: N/A
PROJECT #	: 1189002.330101	DATE RECEIVED	: N/A
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/08/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

HEXACHLOROBENZENE	.....	<0.0017
HEXACHLOROBUTADIENE		<0.0017

SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	.....	116	28 - 138
TETRACHLORO-M-XYLENE		90	43 - 119

MAS I.D. # 821354-14

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI02SD01(01)	DATE ANALYZED	: 04/08/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

HEXACHLOROBENZENE	.....	<0.0023
HEXACHLOROBUTADIENE		<0.0023

SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	.....	108	28 - 138
TETRACHLORO-M-XYLENE		81	43 - 119



MAS I.D. # 821354-15

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI02SD02(03)	DATE ANALYZED	: 04/08/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0025
HEXACHLOROBUTADIENE .....	<0.0025

SURROGATE PERCENT RECOVERY	LIMITS
DECACHLOROBIPHENYL .....	109      28 - 138
TETRACHLORO-M-XYLENE .....	84        43 - 119

MAS I.D. # 821354-16

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLIQ2SD03(09)	DATE ANALYZED	: 04/08/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

HEXACHLOROBENZENE	.....	<0.0025
HEXACHLOROBUTADIENE		<0.0025

SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	.....	106	28 - 138
TETRACHLORO-M-XYLENE		83	43 - 119

MAS I.D. # 821354-17

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI09SD01(01)	DATE ANALYZED	: 04/08/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

---

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0028
HEXACHLOROBUTADIENE .....	<0.0028

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL .....	114	28 - 138
TETRACHLORO-M-XYLENE .....	92	43 - 119

MAS I.D. # 821354-18

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI09SD02(03)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0027
HEXACHLOROBUTADIENE .....	<0.0027

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL .....	113	28 - 138
TETRACHLORO-M-XYLENE .....	92	43 - 119

MAS I.D. # 821354-19

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI09SD03(09)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0022
HEXACHLOROBUTADIENE .....	<0.0022

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL .....	111	28 - 138
TETRACHLORO-M-XYLENE .....	92	43 - 119

MAS I.D. # 821354-20

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI14SD01(01)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0021
HEXACHLOROBUTADIENE .....	<0.0021

SURROGATE PERCENT RECOVERY	LIMITS
DECACHLOROBIPHENYL .....	112      28 - 138
TETRACHLORO-M-XYLENE .....	85        43 - 119

MAS I.D. # 821354-21

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI14SD02(03)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0022
HEXACHLOROBUTADIENE .....	<0.0022

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL .....	116	28 - 138
TETRACHLORO-M-XYLENE .....	92	43 - 119

MAS I.D. # 821354-22

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI14SD03(09)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0020
HEXACHLOROBUTADIENE .....	<0.0020

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL .....	112	28 - 138
TETRACHLORO-M-XYLENE .....	85	43 - 119



MAS I.D. # 821354-23

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI30SD01(01)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0026
HEXACHLOROBUTADIENE .....	<0.0026

SURROGATE PERCENT RECOVERY	LIMITS
DECACHLOROBIPHENYL .....	115      28 - 138
TETRACHLORO-M-XYLENE .....	90        43 - 119

MAS I.D. # 821354-24

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI30SD02(03)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0023
HEXACHLOROBUTADIENE .....	<0.0023

SURROGATE PERCENT RECOVERY	LIMITS
DECACHLOROBIPHENYL .....	111      28 - 138
TETRACHLORO-M-XYLENE .....	88        43 - 119

MAS I.D. # 821354-25

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI30SD03(09)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

---

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0022
HEXACHLOROBUTADIENE .....	<0.0022

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL .....	111	28 - 138
TETRACHLORO-M-XYLENE .....	88	43 - 119

MAS I.D. # 821354-26

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI30SD62(03)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0024
HEXACHLOROBUTADIENE .....	<0.0024

SURROGATE PERCENT RECOVERY	LIMITS
DECACHLOROBIPHENYL .....	121            28 - 138
TETRACHLORO-M-XYLENE .....	95             43 - 119

MAS I.D. # 821354-27

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 04/01/98
CLIENT I.D.	: 98BPXLI02SD62(03)	DATE ANALYZED	: 04/09/98
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081A (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
HEXACHLOROBENZENE .....	<0.0025
HEXACHLOROBUTADIENE	<0.0025

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL .....	113	28 - 138
TETRACHLORO-M-XYLENE	90	43 - 119

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND  
SAMPLE MATRIX : SOIL  
EPA METHOD : 8081A (MODIFIED)

SAMPLE I.D. # : BLANK  
DATE EXTRACTED : 04/01/98  
DATE ANALYZED : 04/08/98  
UNITS : ug/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
HEXACHLOROBENZENE	<0.00167	0.0167	0.0129	77	N/A	N/A	N/A
HEXACHLOROBUTADIENE	<0.00167	0.0167	0.0153	92	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
HEXACHLOROBENZENE	20 - 160	50
HEXACHLOROBUTADIENE	20 - 160	50

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
DECACHLOROBIPHENYL	113	N/A	28 - 138
TETRACHLORO-M-XYLENE	85	N/A	43 - 119

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

HEXACHLOROBENZENE/HEXACHLOROBUTADIENE ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	SAMPLE I.D. #	: 821354-17
PROJECT #	: 1189002.330101	DATE EXTRACTED	: 04/01/98
PROJECT NAME	: LIBERTY ISLAND	DATE ANALYZED	: 04/08/98
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8081A (MODIFIED)		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
HEXACHLOROBENZENE	<0.00282	0.0282	0.0189	67	0.0154	55	20
HEXACHLOROBUTADIENE	<0.00282	0.0282	0.0289	102	0.0273	97	6

CONTROL LIMITS	% REC.	RPD
HEXACHLOROBENZENE	20 - 160	50
HEXACHLOROBUTADIENE	20 - 160	50

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
DECACHLOROBIPHENYL	116	111	28 - 138
ETRACHLORO-M-XYLENE	95	87	43 - 119

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

CASE NARRATIVE

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

-----  
CASE NARRATIVE: GENERAL CHEMISTRY ANALYSIS  
-----

The following anomalies were associated with the preparation and/or analysis of the samples in this accession:

The bottles containing the total organic carbon (TOC) aliquots for samples 821354-10 (98BPXLI30WA01) and 821354-12 (98BPXLI30WA62) were cracked and broken. The samples were transferred to new amber bottle containers.

The percent recovery of the first continuing calibration verification (CCV) in the April 3, 1998, TOC analytical run was outside the required control limits of 90-110% due to a bad injection. The samples affected were the method blank, laboratory control samples (LCSs) and 821354-15 (98BPXLI02SD02(03)). The CCV was reanalyzed for verification and percent recovery was within control limits. Another sample, 821354-16 (98BPXLI02SD03(09)) was reanalyzed for verification. The relative percent difference (RPD) between the initial and reanalyzed result for the sample was less than 1%. After reanalysis of the CCV and sample 821354-16 (98BPXLI02SD03(09)), the instrument was determined to be stable. Therefore, analysis was resumed and TOC results for the blank, LCS and 821354-15 (98BPXLI02SD02(03)) were reported from the analytical run.

All other associated quality assurance/quality control (QA/QC) parameters were within established MultiChem control limits.



MAS I.D. # 821354



GENERAL CHEMISTRY ANALYSIS

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : WATER

PARAMETER	DATE PREPARED	DATE ANALYZED
TOTAL ORGANIC CARBON (SAMPLES -1 THRU -6)	N/A	03/25/98
TOTAL ORGANIC CARBON (SAMPLES -7 THRU -13)	N/A	03/26/98
TOTAL SUSPENDED SOLIDS	03/25/98	03/26/98

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS  
DATA SUMMARY

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : WATER  
UNITS : mg/L

MAS I.D. #	CLIENT I.D.	TOTAL ORGANIC CARBON	TOTAL SUSPENDED SOLIDS
821354-1	98BPXLI02WA01	1.5	<10
821354-2	98BPXLI02WA02	1.6	34
821354-3	98BPXLI02WA03	1.1	12
821354-4	98BPXLI09WA01	1.2	74
821354-5	98BPXLI09WA02	1.2	34
821354-6	98BPXLI09WA03	1.2	48
821354-7	98BPXLI14WA01	1.4	15
821354-8	98BPXLI14WA02	1.3	<10
821354-9	98BPXLI30WA03	1.2	17
821354-10	98BPXLI30WA01	1.7	<10
821354-11	98BPXLI30WA02	1.2	10
821354-12	98BPXLI30WA62	1.2	13
821354-13	98BPXLI02WA61	1.4	17
BLANK	-	<0.50	<10
BLANK	-	<0.50	N/A

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS  
QUALITY CONTROL DATA

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : WATER  
UNITS : mg/L

PARAMETER	MAS I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC.
TOTAL ORGANIC CARBON	BLANK	<0.500	N/A	N/A	2.16	2.00	108
TOTAL ORGANIC CARBON	BLANK	<0.500	N/A	N/A	2.20	2.00	110
TOTAL ORGANIC CARBON	821354-1	1.45	1.52	5	3.43	2.00	99
TOTAL ORGANIC CARBON	821354-7	1.43	1.47	3	3.33	2.00	95
TOTAL SUSPENDED SOLIDS	BLANK	<10.0	N/A	N/A	60.0	60.6	99
TOTAL SUSPENDED SOLIDS	821354-1	<10.0	<10.0	NC	N/A	N/A	N/A

NC = Not calculable.

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : SOIL

PARAMETER	DATE PREPARED	DATE ANALYZED
TOTAL ORGANIC CARBON (SAMPLE -14)	03/28/98	04/01/98
TOTAL ORGANIC CARBON (SAMPLES -15 THRU -19)	03/28/98	04/03/98
TOTAL ORGANIC CARBON (SAMPLES -20 THRU -27)	03/28/98	04/06/98

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS  
DATA SUMMARY

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : SOIL  
UNITS : mg/Kg

-----  
MAS I.D. #            CLIENT I.D.            TOTAL ORGANIC CARBON  
-----

821354-14	98BPXLI02SD01(01)	1.4	D4
821354-15	98BPXLI02SD02(03)	1.9	D4
821354-16	98BPXLI02SD03(09)	4.9	D0
821354-17	98BPXLI09SD01(01)	3.9	D5
821354-18	98BPXLI09SD02(03)	6.5	D0
821354-19	98BPXLI09SD03(09)	2.8	D5
821354-20	98BPXLI14SD01(01)	0.56	D4
821354-21	98BPXLI14SD02(03)	1.7	D5
821354-22	98BPXLI14SD03(09)	0.42	D4
821354-23	98BPXLI30SD01(01)	1.6	D4
821354-24	98BPXLI30SD02(03)	1.6	D5
821354-25	98BPXLI30SD03(09)	1.8	D4
821354-26	98BPXLI30SD62(03)	1.6	D4
821354-27	98BPXLI02SD62(03)	1.6	D4
BLANK	-	<0.010	
BLANK	-	<0.010	
BLANK	-	<0.010	

D4 = Value from a 10 fold diluted analysis.

D0 = Value from a 40 fold diluted analysis.

D5 = Value from a 20 fold diluted analysis.

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS  
QUALITY CONTROL DATA

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : SOIL  
UNITS : mg/Kg

PARAMETER	MAS I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC.
TOTAL ORGANIC CARBON	BLANK(LCS)	<0.0100	N/A	N/A	0.382	0.375	102
TOTAL ORGANIC CARBON	BLANK(LCS)	<0.0100	N/A	N/A	0.437	0.375	117
TOTAL ORGANIC CARBON	BLANK(LCS)	<0.0100	N/A	N/A	0.422	0.375	113
TOTAL ORGANIC CARBON	821354-14	1.41	1.56	10	1.91	0.496	101
TOTAL ORGANIC CARBON	821354-24	1.62	1.53	6	2.58	1.02	94

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : SOIL

-----  
PARAMETER DATE ANALYZED  
-----

MOISTURE 03/24/98

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS  
DATA SUMMARY

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : SOIL

UNITS : %

MAS I.D. #	CLIENT I.D.	MOISTURE
821354-14	98BPXLI02SD01 (01)	29
821354-15	98BPXLI02SD02 (03)	33
821354-16	98BPXLI02SD03 (09)	34
821354-17	98BPXLI09SD01 (01)	41
821354-18	98BPXLI09SD02 (03)	39
821354-19	98BPXLI09SD03 (09)	25
821354-20	98BPXLI14SD01 (01)	21
821354-21	98BPXLI14SD02 (03)	23
821354-22	98BPXLI14SD03 (09)	18
821354-23	98BPXLI30SD01 (01)	36
821354-24	98BPXLI30SD02 (03)	28
821354-25	98BPXLI30SD03 (09)	23
821354-26	98BPXLI30SD62 (03)	31
821354-27	98BPXLI02SD62 (03)	33



MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS  
QUALITY CONTROL DATA

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MATRIX : SOIL  
UNITS : %

PARAMETER	MAS I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	821354-23	36	36	0	N/A	N/A	N/A
MOISTURE	821354-27	33	33	0	N/A	N/A	N/A


$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

10 KENNON

BPX LI .stand

pg 1 of 2

Montgomery Watson 4100 Spenard Road Anchorage AK 99517 (907)248-8883 Fax (907) 248-8884 ATTN: Lynn DeGeorge		Laboratory: Multichem Analytical Services 2000 West International Airport Road Anchorage, Alaska 99502 (907) 248-8273 (907) 248-8273 FAX Attn: Mike Vogel		SOIL				WATER		MAS 821354  <b>ADEC</b> 21 cal day.	
		MW Job Number: 1187aa2 21-DAY 330101 TURNAROUND		VOCs- 8260a 2 x 2-oz amber glass SVOCs- 8278 1 x 8-oz amber glass TOC-415.1 1 x 4-oz amber glass Grain Size - ASTM D422 1 x 8-oz amber glass Particle Size - ASTM D2487 1 x 4-oz amber glass				TSS- 160.2 250 ml poly TOC-415.1 1 x 250 ml amber			
Sampler's Signature: <u>1998</u> <u>Borchman</u>											
MAS#	Date	Time	Sample ID	Matrix	Total Containers					Comments	
-1	3-18	2210	98BPXLI 02 WA01	W	2					✓ ✓	
-2	3-18	2130	98BPXLI 02 WA02	W	2					✓ ✓	
-3	3-18	2200	98BPXLI 02 WA03	W	2					✓ ✓	
-4	3-18	1530	98BPXLI 09 WA01	W	2					✓ ✓	MSPMSD
-5	3-18	1540	98BPXLI 09 WA02	W	2					✓ ✓	
-6	3-18	1550	98BPXLI 09 WA03	W	2					✓ ✓	
-7	3-18	1300	98BPXLI 14 WA01	W	2					✓ ✓	
-8	3-18	1315	98BPXLI 14 WA02	W	2					✓ ✓	
-9	3-19	0200	98BPXLI 30 WA03	W	2					✓ ✓	
-10	3-19	0120	98BPXLI 30 WA01	W	2					✓ ✓	
-11	3-19	0140	98BPXLI 30 WA02	W	2					✓ ✓	
			<del>98BPXLI WA03</del>								No Sample
-12	3-19	0150	98BPXLI 30 WA62		2					✓ ✓	
-13	3-18	2110	98BPXLI 02 WA61		2					✓ ✓	
			<del>98BPXLI WA</del>								
			<del>98BPXLI WA</del>								
Released by: <u>Borchman</u>		Date: <u>5-20-98</u> Time: <u>10:00</u>		If not Delivered: <input checked="" type="checkbox"/> N Shipped Via:		Akbill Number:		Date:			
Received for Laboratory by: <u>Ray Taylor</u>		Date: <u>3/20</u> Time: <u>10:00</u>		Cooler Temperature: <u>4.8°</u> <u>3.7°</u> °C Upon Arrival: <u>5.1°</u> <u>11.7°</u>		Laboratory Notified:		Faxed:			


02. Matthew 3/21/98 0930

3/21/98

11-11-20  
Island

pg 2 of 2

1109002.  
330101

Montgomery Watson 4100 Spenard Road Anchorage AK 99517 (907) 248-8881 Fax (907) 248-8884 ATTN: Lynn DeGeorge		Laboratory: Mulchem Analytical Services 2000 West International Airport Road Anchorage, Alaska 99502 (907) 248-8273 (907) 248-8273 FAX Attn: Mike Vogel	SOIL					WATER	
			1189002, 330101 MW Job Number: C 118922, 30101 21-DAY TURNAROUND	VOCs- 8260a 2 x 2-oz amber glass	SVOCs- 8270 1 x 8-oz amber glass	TOC- 415.1 1 x 4-oz amber glass	Grain Size - ASTM D422 1 x 8-oz amber glass	Particle Size- ASTM D2487 1 x 4-oz amber glass	TSS- 160.2 250 ml poly

MAS  
821354

ADEC

Sampler's Signature: [Signature] Date: 1998

Cool to 4 degrees C

MAS#  
-14  
-15  
-16  
-17  
-18  
-19  
-20  
-21  
-22  
-23  
-24  
-25  
-26  
-27

Date	Time	Sample ID	Matrix	Total Containers	VOCs- 8260a	SVOCs- 8270	TOC- 415.1	Grain Size - ASTM D422	Particle Size- ASTM D2487	TSS- 160.2	TOC- 415.1
3-18	2210	98BPXLI 02 SD01(01)	S	5	✓	✓	✓	✓	✓		
3-18	2230	98BPXLI 02 SD02(03)	S	5							
3-18	2330	98BPXLI 02 SD03(09)	S	5							
3-18	1610	98BPXLI 09 SD01(01)	S	5							
3-18	1620	98BPXLI 09 SD02(03)	S	5							
3-18	1630	98BPXLI 09 SD03(09)	S	5							
3-18	1330	98BPXLI 14 SD01(01)	S	5							
3-18	1345	98BPXLI 14 SD02(03)	S	5							
3-18	1400	98BPXLI 14 SD03(09)	S	5							
3-19	0250	98BPXLI 30 SD01(01)	S	5							
3-19	0300	98BPXLI 30 SD02(03)	S	5							
3-19	0330	98BPXLI 30 SD03(09)	S	5	✓	✓	✓	✓	✓		
3-19	0310	98BPXLI 30 SD6 2(03)	S	3	✓	✓	✓				
3-18	2200	98BPXLI 02 SD6 2(03)	S	3	✓	✓	✓				
		98BPXLI SD ( )									
		98BPXLI SD ( )									

MAS/MSD

Retrieved by: [Signature] Date: 3-20-98 Time: 1530

Received for Laboratory by: [Signature] Date: 3-20-98 Time: 0:00

Inspected/ Shipped Via: [Signature] N

Cooler Temperature: °C Upon Arrival

Airbill Number:                      Date:                     

Laboratory Notified:                      Time:                     

10. [Signature] 3/21/98  
0930

GW  
3/2

NON-CONFORMANCES?  
 Y  N #1  
 (if Y see other side)

## MultiChem Analytical Services

### SAMPLE LOG-IN CHECKLIST

DATE: 3/21/98  
 TIME: 0930  
 INITIALS: JUD

ACCESSION NO. 821354  
 CLIENT: MAS-AK  
 PROJECT: LIBERTY ISLAND

**Shipping:**

Type:

Cooler  
 Box  
 Other

COC Seals:

Ship. Cont.  
 On Bottles  
 None

Intact?

Y  N  
 Y  N

Packing Material:

Styrofoam  
 Bubble Bags  
 Foam Vial Packs  
 Other

Refrigerant:

Gel Ice Pack  
 Loose Ice  
 Other  
 None

Frozen?

Y  N  
 Y  N  
 Y  N

Received Via:

Hand Delivery  
 Federal Express  
 Airborne  
 Other  
 Courier  
 UPS  
 Taxi  
 Goldstreak

**Sample Information:**

Samp. #	Bottle #	Type	Soil VOAs	0 headspace	<input checked="" type="radio"/> Y <input type="radio"/> N	<input type="radio"/> N
<u>14</u>	<u>42</u>	Soil	Water VOAs	0 headspace	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> N
<u>13</u>	<u>26</u>	Water		Preserved?	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> N
		Product		Trip blanks?	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> N
		Other				

Condition of Samples:

Containers: \_\_\_\_\_  
 Intact? (Bottle/Lid)  Y  N  
 Correct Type?  Y  N  
 CA # \_\_\_\_\_  
 Waters Preserved? (if needed)  Y  N  N  
 ID's \_\_\_\_\_ Match C.O.C.  Y  N  N

Temperature: 1.5 C # 1 CA NO. \_\_\_\_\_  
 (See corrective action on reverse side for explanation if temperature is outside of the MAS recommended range.)

LAB USE ONLY:  NO NOTICE  SEND OUTS NEEDED BY \_\_\_\_\_  
 COC/TAT DOES NOT MATCH NOTICE  NEED TEST(S) VERIFIED BY CLIENT

COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# MultiChem Analytical Services Corrective Action Sheet

(if Y see other side)

ACCESSION # 821354

## CORRECTIVE ACTION AREA

**PLAIN CORRECTIVE ACTION:**

CA NO.

Salvaged Sample

Replaced Lid

Preserved Sample w/

CA NO.

Replaced Bottle

Notified P.M.

CA NO.

Verified Id w/Client

Notified Client

Comments:

Temperature: 1.5 C #1 CA NO.

Comments: Samples were received outside of the MAS recommended temperature range (4 C +/- 2 C). Samples were received within 5 hours of collection and may not have had sufficient time to equilibrate with coolant. A temperature range from 2 to 15 degrees Celsius is considered acceptable. The samples will be analyzed as scheduled unless directed otherwise by client.

Comments: Samples were received outside of the MAS recommended temperature range (4 C +/- 2 C). The samples will be analyzed as scheduled unless directed otherwise by client.

Tech. Signature/Date: [Signature] 3/21/98 P.M. Signature/Date: [Signature] 3/24/98

## CORRECTIVE ACTION TAKEN:

Explain Action Taken:

*Alaska Airlines*

**GOLDSTREAK  
PACKAGE EXPRESS**

Airline **027-** Origin **ANC** AIR WAYBILL Number **5247 4295**

From Shipper: <b>MULTICHEM ANALYTICAL SVCS</b>		Total Pieces <b>3</b>	Total Weight <b>1.87</b>	MULTIPLE PIECES FOR AS FLIGHTS ONLY Please <input checked="" type="checkbox"/> If Live Animal <input type="checkbox"/>										
Address: <b>2000 W INT'L A/P RD DC7</b>		Phone: <b>907-240-2273</b>	Form of Payment <input type="checkbox"/> Cash <input type="checkbox"/> Check <input type="checkbox"/> GBL-Attach GBL <input type="checkbox"/> AS/OX Account Number <b>27442230749</b> <input type="checkbox"/> Credit Card Number		PCS.	WY. RANGE	RATE	CHARGE						
City: <b>ANCHORAGE</b>	State: <b>AK</b>	Zip Code: <b>99507</b>	Validata Approval <small>(May not be used each and every)</small> Executed By: Date/Time _____ a.m. p.m.			GSX LETTER								
Shipper's Signature _____	SUBJECT TO RATE AUDIT	Date _____	Time _____	a.m. p.m.		1-15								
The Federal Aviation Administration requires Alaska Airlines to inform you of the following Shipper's Security Notification: I certify that this shipment does not contain any unauthorized explosives, destructive devices or hazardous materials. I consent to a search of this shipment. I am aware that this endorsement and original signature, along with other shipping documents, will be retained on file until the shipment is delivered.		Contents <b>NONHAZ WARE</b>		Declared Value of Customs			16-50							
Type of first personal identification reviewed: Matching photo ID? Indicate: Yes or No _____ Number appearing on ID _____	Type of second personal identification reviewed: Matching photo ID? Indicate: Yes or No _____ Number appearing on ID _____		Remarks <b>KEEP COOL</b>		Carrier <b>AS</b>		Flight		Destination		E.T.A.		Subtotal Charges	
To Consignee: (Complete Consignee Information required on package) <b>MULTICHEM ANALYTICAL SVCS</b>		Address: <b>560 NACHES AVE SW #101</b>		Phone: <b>425-228-0335</b>		CHECK ONE ONLY <input checked="" type="checkbox"/> AIRPORT TO AIRPORT SERVICE		ENTER → AS COURIER CHARGES		1st Carrier		Other Charges		
City: <b>RENTON</b>	State: <b>WA</b>	Zip Code: <b>98055</b>	PICK-UP ONLY <input type="checkbox"/>		DELIVERY ONLY <input type="checkbox"/>		DOOR TO DOOR <input type="checkbox"/>		2nd Carrier		3rd Carrier		Tax (Offline only)	
Consignee's Printed Name - Signature (Received in Good Order Except as Noted) _____		Date _____	Time _____	a.m. p.m.	AS AGENT <input type="checkbox"/>		AS AGENT <input type="checkbox"/>		AS AGENT <input type="checkbox"/>		AS 800 SERVICES (800) 634-7113		Delivery (NON AS COURIER)	
Origin Courier Signature _____		Date _____	Time _____	a.m. p.m.	Destination Courier Signature _____		Date _____	Time _____	a.m. p.m.	Special Service		Insurance		
Airline <b>027-</b> Origin <b>ANC</b> AIR WAYBILL Number <b>5247 4295</b>		This is a non-negotiable AIR WAYBILL, subject to the terms and conditions set forth in the reverse of this document.		Thank you for shipping with <i>Alaska Airlines</i>		P.O. Box 68900 Seattle, WA 98168		TOTAL						

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**Consignee Memo**



MultiChem  
ANALYTICAL SERVICES

April 30, 1998

MAS I. D. # 821354

Montgomery Watson  
4100 Spenard Road  
Anchorage, AK 99517

Attn: Lynn DeGeorge

Project Name: Liberty Island Sediments

Project Number: 1189002.330101

Dear Ms. DeGeorge:

On March 20, 1998, MultiChem Analytical Services, LLC of Alaska received twenty seven samples for analysis in conjunction with the above listed project. The requested analyses were performed using EPA or equivalent methods. The reports of analyses and deliverables are enclosed. Below is an outline of the laboratories that participated in this project.

MAS-WA Analysis Performed: Volatile Organics (8260), Semivolatile Organics (8270), Pesticides/PCBs (8081), Total Organic Carbon (TOC) and Total Suspended Solids (TSS)

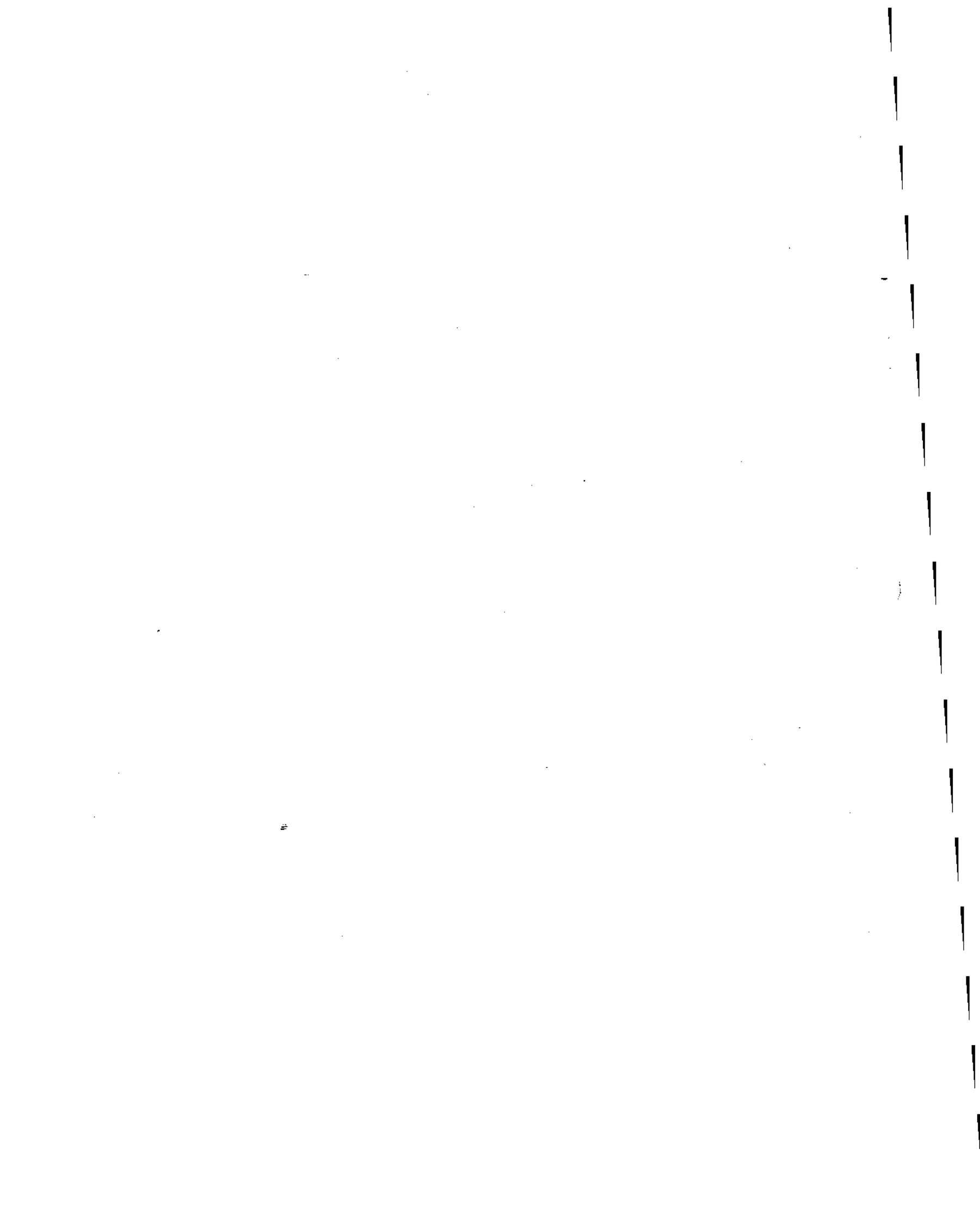
Dow/Alaska Analysis Performed: Grain Size and Particle Size Distribution (ASTM D-422)  
Testlabs

**\*Please note:** this report contains results for the Semivolatile Organics (8270), which completes this file. The electronic deliverables are currently in progress, and will be E-mailed directly to you as quickly as possible.

Please do not hesitate to contact us at (907) 248-8273, if you have any questions or comments.

Sincerely,  
MultiChem Analytical Services

Victoria L. Bayly  
Project Manager







**MultiChem**  
ANALYTICAL SERVICES

MAS I.D. # 821354  
UST - 026

April 29, 1998

Montgomery Watson  
4100 Spenard  
Anchorage AK 99517-2901

Attention : Lynn DeGeorge

Project Number : 1189002.330101

Project Name : Liberty Island

Dear Ms. DeGeorge:

On March 21, 1998, MultiChem Analytical Services received 27 samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

This is a partial report containing results for the semivolatle analysis only. All other data has been previously forwarded under separate cover.

Sincerely,

Elaine M. Walker  
Project Manager

EMW/hal/trm

Enclosure

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

SAMPLE CROSS REFERENCE SHEET

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

MAS #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
821354-1	98BPXLI02WA01	03/18/98	WATER
821354-2	98BPXLI02WA02	03/18/98	WATER
821354-3	98BPXLI02WA03	03/18/98	WATER
821354-4	98BPXLI09WA01	03/18/98	WATER
821354-5	98BPXLI09WA02	03/18/98	WATER
821354-6	98BPXLI09WA03	03/18/98	WATER
821354-7	98BPXLI14WA01	03/18/98	WATER
821354-8	98BPXLI14WA02	03/18/98	WATER
821354-9	98BPXLI30WA03	03/19/98	WATER
821354-10	98BPXLI30WA01	03/19/98	WATER
821354-11	98BPXLI30WA02	03/19/98	WATER
821354-12	98BPXLI30WA62	03/19/98	WATER
821354-13	98BPXLI02WA61	03/18/98	WATER
821354-14	98BPXLI02SD01 (01)	03/18/98	SEDIMENT
821354-15	98BPXLI02SD02 (03)	03/18/98	SEDIMENT
821354-16	98BPXLI02SD03 (09)	03/18/98	SEDIMENT
821354-17	98BPXLI09SD01 (01)	03/18/98	SEDIMENT
821354-18	98BPXLI09SD02 (03)	03/18/98	SEDIMENT
821354-19	98BPXLI09SD03 (09)	03/18/98	SEDIMENT
821354-20	98BPXLI14SD01 (01)	03/18/98	SEDIMENT
821354-21	98BPXLI14SD02 (03)	03/18/98	SEDIMENT
821354-22	98BPXLI14SD03 (09)	03/18/98	SEDIMENT
821354-23	98BPXLI30SD01 (01)	03/19/98	SEDIMENT
821354-24	98BPXLI30SD02 (03)	03/19/98	SEDIMENT
821354-25	98BPXLI30SD03 (09)	03/19/98	SEDIMENT
821354-26	98BPXLI30SD62 (03)	03/19/98	SEDIMENT
821354-27	98BPXLI02SD62 (03)	03/18/98	SEDIMENT

----- TOTALS -----

MATRIX	# SAMPLES
WATER	13
SEDIMENT	14

MAS STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

ANALYTICAL SCHEDULE

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
SEMIVOLATILE ORGANICS ANALYSIS	GCMS	EPA 8270A	R

R = MAS - Renton  
ANC = MAS - Anchorage  
SUB = Subcontract

## CASE NARRATIVE

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

-----  
CASE NARRATIVE: SEMIVOLATILE ORGANICS ANALYSIS  
-----

The following anomalies were associated with the preparation and/or analysis of the samples in this accession:

Base/Neutral Fractions

Bis(2-ethylhexyl)phthalate was detected in several samples from this set. This is a common laboratory and field contaminant because of its use in plastics. Note that this compound was also detected in the associated method blank at a level below our method detection limit (MDL).

Recoveries of the surrogate nitrobenzene-d5 from sample extracts 821354-15 (98BPXLI02SD02[03]), 821354-19 (98BPXLI09SD03[09]), 821354-20 (98BPXLI14SD01[01]) and 821354-21 (98BPXLI14SD02[03]) fell below MultiChem control limits. No action was performed since all other surrogate recoveries were within limits.

The initial analysis of the blank spike and blank spike duplicate (BS/BSD) samples showed several recovery and relative percent difference (RPD) values which exceeded MultiChem's advisory limits. The BS and BSD were reanalyzed and all recoveries and RPDs were within limits with the exception of n-nitrosodiphenylamine, which had recoveries slightly lower than our advisory limit. No further corrective action was performed since these control limits are advisory (not statistically generated due to insufficient data points) and all other spike recoveries were within limits.

The RPD between recoveries of the compounds pyrene and bis(2-ethylhexyl)phthalate from the matrix spike and matrix spike duplicate samples (MS/MSD) exceeded the MultiChem advisory limit of 20%. No corrective action was performed since both recoveries were within limits and limits are only advisory. These RPD values were flagged with "H".

The responses of continuing calibration check (CCC) compound pentachlorophenol from the CCCs preceding the base/neutral extract set fell below the method control limit. No corrective action was performed since this compound (and all other phenols) was analyzed in the acid fraction and was not a target compound in the base/neutral fraction.

Acid Fractions

Benzoic acid was detected in the associated method blank at a concentration below the reporting limit. This compound was also detected in several samples from this set, at concentrations below our MDL.

CONTINUED ON NEXT PAGE

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

CASE NARRATIVE  
CONTINUED

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND

-----  
CASE NARRATIVE: SEMIVOLATILE ORGANICS ANALYSIS  
-----

This sample set was extracted along with a BS and a BSD. However, one of these extracts was blown dry during the concentration step. Therefore, results were reported for only a BS.

Recoveries of 2-4-dimethylphenol and benzyl alcohol from the associated BS sample fell below MultiChem control limits. Recoveries of benzyl alcohol from the MS/MSD also fell below MultiChem control limits. No action was performed since all control limits are only advisory.

All other associated quality assurance/quality control (QA/QC) parameters were within established MultiChem control limits.

MAS I.D. # 821354-14

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI02SD01(01)	DATE ANALYZED	: 04/06/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	38
2-METHYLPHENOL	<23
4-METHYLPHENOL	<25
2,4-DIMETHYLPHENOL	<21
PENTACHLOROPHENOL	<41
BENZYL ALCOHOL	<37
BENZOIC ACID	<180

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	79	39 - 132
2-FLUOROPHENOL	69	36 - 130
2,4,6-TRIBROMOPHENOL	100	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI02SD01(01)	DATE ANALYZED	: 04/22/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.024
ACENAPHTHYLENE	<0.022
ACENAPHTHENE	<0.024
FLUORENE	<0.027
PHENANTHRENE	0.033
ANTHRACENE	<0.025
2-METHYLNAPHTHALENE	0.025
FLUORANTHENE	<0.026
PYRENE	<0.033
BENZO (A) ANTHRACENE	<0.031
CHRYSENE	<0.031
BENZO (B) FLUORANTHENE	<0.033
BENZO (K) FLUORANTHENE	<0.042
BENZO (A) PYRENE	<0.027
INDENO (1, 2, 3-CD) PYRENE	<0.042
DIBENZO (A, H) ANTHRACENE	<0.043
BENZO (G, H, I) PERYLENE	<0.043
1, 2-DICHLOROBENZENE	<0.026
1, 4-DICHLOROBENZENE	<0.023
1, 2, 4-TRICHLOROBENZENE	<0.022
DIBENZOFURAN	<0.024
HEXACHLOROETHANE	<0.026
N-NITROSODIPHENYLAMINE	<0.029
DIMETHYLPHTHALATE	<0.048
DIETHYLPHTHALATE	<0.057
DI-N-BUTYLPHTHALATE	<0.033
BUTYLBENZYLPHTHALATE	<0.043
BIS (2-ETHYLHEXYL) PHTHALATE	0.056
DI-N-OCTYLPHTHALATE	<0.040

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	57	41 - 117
2-FLUOROBIPHENYL	71	36 - 128
TERPHENYL-D14	88	38 - 146

MAS I.D. # 821354-15

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI02SD02(03)	DATE ANALYZED	: 04/06/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<23
2-METHYLPHENOL	<24
4-METHYLPHENOL	<26
2,4-DIMETHYLPHENOL	<23
PENTACHLOROPHENOL	<43
BENZYL ALCOHOL	<39
BENZOIC ACID	<190

SURROGATE PERCENT RECOVERY		LIMITS
PHENOL-D5	99	39 - 132
2-FLUOROPHENOL	83	36 - 130
2,4,6-TRIBROMOPHENOL	104	13 - 133



SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI02SD02(03)	DATE ANALYZED	: 04/22/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.025
ACENAPHTHYLENE	<0.023
ACENAPHTHENE	<0.025
FLUORENE	<0.029
PHENANTHRENE	0.031
ANTHRACENE	<0.027
2-METHYLNAPHTHALENE	<0.025
FLUORANTHENE	<0.028
PYRENE	<0.035
BENZO (A) ANTHRACENE	<0.033
CHRYSENE	<0.033
BENZO (B) FLUORANTHENE	<0.035
BENZO (K) FLUORANTHENE	<0.044
BENZO (A) PYRENE	<0.028
INDENO (1, 2, 3-CD) PYRENE	<0.044
DIBENZO (A, H) ANTHRACENE	<0.046
BENZO (G, H, I) PERYLENE	<0.046
1, 2-DICHLOROBENZENE	<0.027
1, 4-DICHLOROBENZENE	<0.025
1, 2, 4-TRICHLOROBENZENE	<0.023
DIBENZOFURAN	<0.026
HEXACHLOROETHANE	<0.028
N-NITROSODIPHENYLAMINE	<0.030
DIMETHYLPHTHALATE	<0.051
DIETHYLPHTHALATE	<0.060
DI-N-BUTYLPHTHALATE	<0.035
BUTYLBENZYLPHTHALATE	<0.046
BIS (2-ETHYLHEXYL) PHTHALATE	0.046
DI-N-OCTYLPHTHALATE	<0.043

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	30	H	41 - 117
2-FLUOROBIPHENYL	64		36 - 128
TERPHENYL-D14	74		38 - 146

H = Out of limits.

MAS I.D. # 821354-16

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLIQ2SD03(09)	DATE ANALYZED	: 04/06/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<23
2-METHYLPHENOL	<25
4-METHYLPHENOL	64
2,4-DIMETHYLPHENOL	<23
PENTACHLOROPHENOL	<44
BENZYL ALCOHOL	<40
BENZOIC ACID	<190

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	100	39 - 132
2-FLUOROPHENOL	82	36 - 130
2,4,6-TRIBROMOPHENOL	100	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI02SD03(09)	DATE ANALYZED	: 04/22/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.026
ACENAPHTHYLENE	<0.023
ACENAPHTHENE	<0.026
FLUORENE	<0.029
PHENANTHRENE	<0.029
ANTHRACENE	<0.027
2-METHYLNAPHTHALENE	<0.025
FLUORANTHENE	<0.028
PYRENE	<0.035
BENZO (A) ANTHRACENE	<0.033
CHRYSENE	<0.034
BENZO (B) FLUORANTHENE	<0.036
BENZO (K) FLUORANTHENE	<0.045
BENZO (A) PYRENE	<0.029
INDENO (1, 2, 3-CD) PYRENE	<0.045
DIBENZO (A, H) ANTHRACENE	<0.047
BENZO (G, H, I) PERYLENE	<0.046
1, 2-DICHLOROBENZENE	<0.028
1, 4-DICHLOROBENZENE	<0.025
1, 2, 4-TRICHLOROBENZENE	<0.023
DIBENZOFURAN	<0.026
HEXACHLOROETHANE	<0.028
N-NITROSODIPHENYLAMINE	<0.031
DIMETHYLPHTHALATE	<0.052
DIETHYLPHTHALATE	<0.061
DI-N-BUTYLPHTHALATE	<0.036
BUTYLBENZYLPHTHALATE	<0.046
BIS (2-ETHYLHEXYL) PHTHALATE	0.27
DI-N-OCTYLPHTHALATE	<0.043

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	48	41 - 117
2-FLUOROBIPHENYL	71	36 - 128
TERPHENYL-D14	91	38 - 146

MAS I.D. # 821354-17

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI09SD01(01)	DATE ANALYZED	: 04/06/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL .....	<26
2-METHYLPHENOL	<28
4-METHYLPHENOL	<30
2,4-DIMETHYLPHENOL .....	<26
PENTACHLOROPHENOL	<49
BENZYL ALCOHOL	<45
BENZOIC ACID .....	<210

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	94	39 - 132
2-FLUOROPHENOL	87	36 - 130
2,4,6-TRIBROMOPHENOL .....	83	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI09SD01(01)	DATE ANALYZED	: 04/22/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.029
ACENAPHTHYLENE	<0.026
ACENAPHTHENE	<0.029
FLUORENE	<0.033
PHENANTHRENE	<0.033
ANTHRACENE	<0.030
2-METHYLNAPHTHALENE	<0.028
FLUORANTHENE	<0.032
PYRENE	<0.040
BENZO (A) ANTHRACENE	<0.037
CHRYSENE	<0.038
BENZO (B) FLUORANTHENE	<0.040
BENZO (K) FLUORANTHENE	<0.050
BENZO (A) PYRENE	<0.032
NDENO (1, 2, 3-CD) PYRENE	<0.050
BIBENZO (A, H) ANTHRACENE	<0.052
BENZO (G, H, I) PERYLENE	<0.052
1, 2-DICHLOROBENZENE	<0.031
1, 4-DICHLOROBENZENE	<0.028
1, 2, 4-TRICHLOROBENZENE	<0.026
DIBENZOFURAN	<0.029
HEXACHLOROETHANE	<0.032
N-NITROSODIPHENYLAMINE	<0.035
DIMETHYLPHTHALATE	<0.058
DIETHYLPHTHALATE	<0.068
DI-N-BUTYLPHTHALATE	<0.040
BUTYLBENZYLPHTHALATE	<0.052
BIS (2-ETHYLHEXYL) PHTHALATE	0.11
DI-N-OCTYLPHTHALATE	<0.048

SURROGATE PERCENT RECOVERY		LIMITS
NITROBENZENE-D5	42	41 - 117
2-FLUOROBIPHENYL	54	36 - 128
TERPHENYL-D14	100	38 - 146

MAS I.D. # 821354-18

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI09SD02(03)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<25
2-METHYLPHENOL	<27
4-METHYLPHENOL	62
2,4-DIMETHYLPHENOL	<25
PENTACHLOROPHENOL	<48
BENZYL ALCOHOL	<43
BENZOIC ACID	<210

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	93	39 - 132
2-FLUOROPHENOL	77	36 - 130
2,4,6-TRIBROMOPHENOL	84	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI09SD02(03)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.028
ACENAPHTHYLENE	<0.025
ACENAPHTHENE	<0.028
FLUORENE	<0.032
PHENANTHRENE	<0.032
ANTHRACENE	<0.029
2-METHYLNAPHTHALENE	<0.027
FLUORANTHENE	<0.031
PYRENE	<0.038
BENZO (A) ANTHRACENE	<0.036
CHRYSENE	<0.036
BENZO (B) FLUORANTHENE	<0.039
BENZO (K) FLUORANTHENE	<0.049
BENZO (A) PYRENE	0.092
INDENO (1, 2, 3-CD) PYRENE	<0.049
DIBENZO (A, H) ANTHRACENE	<0.050
BENZO (G, H, I) PERYLENE	<0.050
1, 2-DICHLOROBENZENE	<0.030
1, 4-DICHLOROBENZENE	<0.027
1, 2, 4-TRICHLOROBENZENE	<0.025
DIBENZOFURAN	<0.028
HEXACHLOROETHANE	<0.031
N-NITROSODIPHENYLAMINE	<0.033
DIMETHYLPHTHALATE	<0.056
DIETHYLPHTHALATE	<0.066
DI-N-BUTYLPHTHALATE	<0.039
BUTYLBENZYLPHTHALATE	<0.050
BIS (2-ETHYLHEXYL) PHTHALATE	0.32
DI-N-OCTYLPHTHALATE	<0.047

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	48	41 - 117
2-FLUOROBIPHENYL	73	36 - 128
TERPHENYL-D14	109	38 - 146

MAS I.D. # 821354-19

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI09SD03(09)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<21
2-METHYLPHENOL	<22
4-METHYLPHENOL	37
2,4-DIMETHYLPHENOL	<20
PENTACHLOROPHENOL	<39
BENZYL ALCOHOL	<35
BENZOIC ACID	<170

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	98	39 - 132
2-FLUOROPHENOL	89	36 - 130
2,4,6-TRIBROMOPHENOL	92	13 - 133



SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI09SD03(09)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.023
ACENAPHTHYLENE	<0.020
ACENAPHTHENE	<0.023
FLUORENE	<0.026
PHENANTHRENE	<0.026
ANTHRACENE	<0.024
2-METHYLNAPHTHALENE	<0.022
FLUORANTHENE	<0.025
PYRENE	<0.031
BENZO (A) ANTHRACENE	<0.029
CHRYSENE	<0.030
BENZO (B) FLUORANTHENE	<0.031
BENZO (K) FLUORANTHENE	<0.039
BENZO (A) PYRENE	<0.025
INDENO (1, 2, 3-CD) PYRENE	<0.039
DIBENZO (A, H) ANTHRACENE	<0.041
BENZO (G, H, I) PERYLENE	<0.041
1, 2-DICHLOROBENZENE	<0.024
1, 4-DICHLOROBENZENE	<0.022
1, 2, 4-TRICHLOROBENZENE	<0.021
DIBENZOFURAN	<0.023
HEXACHLOROETHANE	<0.025
N-NITROSODIPHENYLAMINE	<0.027
DIMETHYLPHTHALATE	<0.046
DIETHYLPHTHALATE	<0.054
DI-N-BUTYLPHTHALATE	<0.031
BUTYLBENZYLPHTHALATE	<0.041
BIS (2-ETHYLHEXYL) PHTHALATE	0.19
DI-N-OCTYLPHTHALATE	<0.038

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	34 H	41 - 117
2-FLUOROBIPHENYL	75	36 - 128
TERPHENYL-D14	116	38 - 146

H = Out of limits.

MAS I.D. # 821354-20

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI14SD01(01)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

PHENOL .....	<19
2-METHYLPHENOL	<21
4-METHYLPHENOL	<22
2,4-DIMETHYLPHENOL .....	<19
PENTACHLOROPHENOL	<37
BENZYL ALCOHOL	<33
BENZOIC ACID .....	<160

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	105	39 - 132
2-FLUOROPHENOL	96	36 - 130
2,4,6-TRIBROMOPHENOL .....	94	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI14SD01(01)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.022
ACENAPHTHYLENE	<0.019
ACENAPHTHENE	<0.021
FLUORENE	<0.025
PHENANTHRENE	<0.025
ANTHRACENE	<0.023
2-METHYLNAPHTHALENE	<0.021
FLUORANTHENE	<0.024
PYRENE	<0.030
BENZO (A) ANTHRACENE	<0.028
CHRYSENE	<0.028
BENZO (B) FLUORANTHENE	<0.030
BENZO (K) FLUORANTHENE	<0.037
BENZO (A) PYRENE	<0.024
INDENO (1, 2, 3-CD) PYRENE	<0.037
DIBENZO (A, H) ANTHRACENE	<0.039
BENZO (G, H, I) PERYLENE	<0.039
1, 2-DICHLOROBEZENE	<0.023
1, 4-DICHLOROBEZENE	<0.021
1, 2, 4-TRICHLOROBEZENE	<0.019
DIBENZOFURAN	<0.022
HEXACHLOROETHANE	<0.024
N-NITROSODIPHENYLAMINE	<0.026
DIMETHYLPHTHALATE	<0.043
DIETHYLPHTHALATE	<0.051
DI-N-BUTYLPHTHALATE	<0.030
BUTYLBENZYLPHTHALATE	<0.039
BIS (2-ETHYLHEXYL) PHTHALATE	0.091
DI-N-OCTYLPHTHALATE	<0.036

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	34 H	41 - 117
2-FLUOROBIPHENYL	52	36 - 128
TERPHENYL-D14	95	38 - 146

H = Out of limits.

MAS I.D. # 821354-21

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI14SD02(03)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<20
2-METHYLPHENOL	<21
4-METHYLPHENOL	<23
2,4-DIMETHYLPHENOL	<20
PENTACHLOROPHENOL	<38
BENZYL ALCOHOL	<34
BENZOIC ACID	<160

SURROGATE PERCENT RECOVERY		LIMITS
PHENOL-D5	106	39 - 132
2-FLUOROPHENOL	93	36 - 130
2,4,6-TRIBROMOPHENOL	103	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI14SD02 (03)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.022
ACENAPHTHYLENE	<0.020
ACENAPHTHENE	<0.022
FLUORENE	<0.025
PHENANTHRENE	0.027
ANTHRACENE	<0.023
2-METHYLNAPHTHALENE	<0.022
FLUORANTHENE	<0.024
PYRENE	<0.030
BENZO (A) ANTHRACENE	<0.028
CHRYSENE	<0.029
BENZO (B) FLUORANTHENE	<0.031
BENZO (K) FLUORANTHENE	<0.038
BENZO (A) PYRENE	<0.025
INDENO (1, 2, 3-CD) PYRENE	<0.038
DIBENZO (A, H) ANTHRACENE	<0.040
BENZO (G, H, I) PERYLENE	<0.040
1, 2-DICHLOROBENZENE	<0.024
1, 4-DICHLOROBENZENE	<0.021
1, 2, 4-TRICHLOROBENZENE	<0.020
DIBENZOFURAN	<0.022
HEXACHLOROETHANE	<0.024
N-NITROSODIPHENYLAMINE	<0.026
DIMETHYLPHTHALATE	<0.044
DIETHYLPHTHALATE	<0.052
DI-N-BUTYLPHTHALATE	<0.031
BUTYLBENZYLPHTHALATE	<0.040
BIS (2-ETHYLHEXYL) PHTHALATE	0.48
DI-N-OCTYLPHTHALATE	<0.037

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	28 H	41 - 117
2-FLUOROBIPHENYL	64	36 - 128
TERPHENYL-D14	87	38 - 146

H = Out of limits.

MAS I.D. # 821354-22

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI14SD03(09)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<19
2-METHYLPHENOL	<20
4-METHYLPHENOL	<22
2,4-DIMETHYLPHENOL	<19
PENTACHLOROPHENOL	<35
BENZYL ALCOHOL	<32
BENZOIC ACID	<150

SURROGATE PERCENT RECOVERY		LIMITS
PHENOL-D5	67	39 - 132
2-FLUOROPHENOL	53	36 - 130
2,4,6-TRIBROMOPHENOL	96	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI14SD03(09)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.021
ACENAPHTHYLENE	<0.019
ACENAPHTHENE	<0.021
FLUORENE	<0.024
PHENANTHRENE	<0.024
ANTHRACENE	<0.022
2-METHYLNAPHTHALENE	<0.020
FLUORANTHENE	<0.023
PYRENE	<0.029
BENZO (A) ANTHRACENE	<0.027
CHRYSENE	<0.027
BENZO (B) FLUORANTHENE	<0.029
BENZO (K) FLUORANTHENE	<0.036
BENZO (A) PYRENE	<0.023
INDENO (1, 2, 3-CD) PYRENE	<0.036
DIBENZO (A, H) ANTHRACENE	<0.038
BENZO (G, H, I) PERYLENE	<0.037
1, 2-DICHLOROBENZENE	<0.022
1, 4-DICHLOROBENZENE	<0.020
1, 2, 4-TRICHLOROBENZENE	<0.019
DIBENZOFURAN	<0.021
HEXACHLOROETHANE	<0.023
N-NITROSODIPHENYLAMINE	<0.025
DIMETHYLPHTHALATE	<0.042
DIETHYLPHTHALATE	<0.049
DI-N-BUTYLPHTHALATE	<0.029
BUTYLBENZYLPHTHALATE	<0.037
BIS (2-ETHYLHEXYL) PHTHALATE	0.065
DI-N-OCTYLPHTHALATE	<0.035

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	51	41 - 117
2-FLUOROBIPHENYL	56	36 - 128
TERPHENYL-D14	77	38 - 146

MAS I.D. # 821354-23

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD01(01)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

-----  
COMPOUNDS RESULTS  
-----

PHENOL	<24
2-METHYLPHENOL	<26
4-METHYLPHENOL	<28
2,4-DIMETHYLPHENOL	<24
PENTACHLOROPHENOL	<45
BENZYL ALCOHOL	<41
BENZOIC ACID	<200

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	70	39 - 132
2-FLUOROPHENOL	59	36 - 130
2,4,6-TRIBROMOPHENOL	96	13 - 133



SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD01(01)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.027
ACENAPHTHYLENE	<0.024
ACENAPHTHENE	<0.026
FLUORENE	<0.030
PHENANTHRENE	<0.030
ANTHRACENE	<0.028
2-METHYLNAPHTHALENE	<0.026
FLUORANTHENE	<0.029
PYRENE	<0.037
BENZO (A) ANTHRACENE	<0.034
CHRYSENE	<0.035
BENZO (B) FLUORANTHENE	<0.037
BENZO (K) FLUORANTHENE	<0.046
BENZO (A) PYRENE	<0.030
INDENO (1, 2, 3-CD) PYRENE	<0.046
DIBENZO (A, H) ANTHRACENE	<0.048
BENZO (G, H, I) PERYLENE	<0.048
1, 2-DICHLOROBENZENE	<0.028
1, 4-DICHLOROBENZENE	<0.026
1, 2, 4-TRICHLOROBENZENE	<0.024
DIBENZOFURAN	<0.027
HEXACHLOROETHANE	<0.029
N-NITROSODIPHENYLAMINE	<0.032
DIMETHYLPHTHALATE	<0.053
DIETHYLPHTHALATE	<0.063
DI-N-BUTYLPHTHALATE	<0.037
BUTYLBENZYLPHTHALATE	<0.048
BIS (2-ETHYLHEXYL) PHTHALATE	0.072
DI-N-OCTYLPHTHALATE	<0.045

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	54	41 - 117
2-FLUOROBIPHENYL	53	36 - 128
TERPHENYL-D14	72	38 - 146

MAS I.D. # 821354-24

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD02(03)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<21
2-METHYLPHENOL	<23
4-METHYLPHENOL	<25
2,4-DIMETHYLPHENOL	<21
PENTACHLOROPHENOL	<40
BENZYL ALCOHOL	<37
BENZOIC ACID	<180

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	100	39 - 132
2-FLUOROPHENOL	85	36 - 130
2,4,6-TRIBROMOPHENOL	106	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD02(03)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.024
ACENAPHTHYLENE	<0.021
ACENAPHTHENE	<0.023
FLUORENE	<0.027
PHENANTHRENE	<0.027
ANTHRACENE	<0.025
2-METHYLNAPHTHALENE	<0.023
FLUORANTHENE	<0.026
PYRENE	<0.033
BENZO (A) ANTHRACENE	<0.030
CHRYSENE	<0.031
BENZO (B) FLUORANTHENE	<0.033
BENZO (K) FLUORANTHENE	<0.041
BENZO (A) PYRENE	<0.026
INDENO (1, 2, 3-CD) PYRENE	<0.041
DIBENZO (A, H) ANTHRACENE	<0.043
BENZO (G, H, I) PERYLENE	<0.043
1, 2-DICHLOROBENZENE	<0.025
1, 4-DICHLOROBENZENE	<0.023
1, 2, 4-TRICHLOROBENZENE	<0.021
DIBENZOFURAN	<0.024
HEXACHLOROETHANE	<0.026
N-NITROSODIPHENYLAMINE	<0.028
DIMETHYLPHTHALATE	<0.048
DIETHYLPHTHALATE	<0.056
DI-N-BUTYLPHTHALATE	<0.033
BUTYLBENZYLPHTHALATE	<0.043
BIS (2-ETHYLHEXYL) PHTHALATE	0.21
DI-N-OCTYLPHTHALATE	<0.040

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	53	41 - 117
2-FLUOROBIPHENYL	60	36 - 128
TERPHENYL-D14	86	38 - 146

MAS I.D. # 821354-25

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD03(09)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL	<20
2-METHYLPHENOL	<21
4-METHYLPHENOL	280
2,4-DIMETHYLPHENOL	<20
PENTACHLOROPHENOL	<38
BENZYL ALCOHOL	<34
BENZOIC ACID	<160

SURROGATE PERCENT RECOVERY		LIMITS
PHENOL-D5	106	39 - 132
2-FLUOROPHENOL	90	36 - 130
2,4,6-TRIBROMOPHENOL	110	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD03(09)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.022
ACENAPHTHYLENE	<0.020
ACENAPHTHENE	<0.022
FLUORENE	<0.025
PHENANTHRENE	0.033
ANTHRACENE	<0.023
2-METHYLNAPHTHALENE	0.025
FLUORANTHENE	<0.024
PYRENE	<0.030
BENZO (A) ANTHRACENE	<0.028
CHRYSENE	<0.029
BENZO (B) FLUORANTHENE	<0.031
BENZO (K) FLUORANTHENE	<0.038
BENZO (A) PYRENE	<0.025
INDENO (1, 2, 3-CD) PYRENE	<0.038
DIBENZO (A, H) ANTHRACENE	<0.040
BENZO (G, H, I) PERYLENE	<0.040
1, 2-DICHLOROBENZENE	<0.024
1, 4-DICHLOROBENZENE	<0.021
1, 2, 4-TRICHLOROBENZENE	<0.020
DIBENZOFURAN	<0.022
HEXACHLOROETHANE	<0.024
N-NITROSODIPHENYLAMINE	<0.026
DIMETHYLPHTHALATE	<0.044
DIETHYLPHTHALATE	<0.052
DI-N-BUTYLPHTHALATE	<0.031
BUTYLBENZYLPHTHALATE	<0.040
BIS (2-ETHYLHEXYL) PHTHALATE	0.56
DI-N-OCTYLPHTHALATE	<0.037

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	47	41 - 117
2-FLUOROBIPHENYL	70	36 - 128
TERPHENYL-D14	95	38 - 146

MAS I.D. # 821354-26

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD62(03)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL .....	<22
2-METHYLPHENOL	<24
4-METHYLPHENOL	<26
2,4-DIMETHYLPHENOL .....	<22
PENTACHLOROPHENOL	<42
BENZYL ALCOHOL	<38
BENZOIC ACID .....	<180

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	78	39 - 132
2-FLUOROPHENOL	66	36 - 130
2,4,6-TRIBROMOPHENOL .....	98	13 - 133

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/19/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI30SD62(03)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.025
ACENAPHTHYLENE	<0.022
ACENAPHTHENE	<0.024
FLUORENE	<0.028
PHENANTHRENE	<0.028
ANTHRACENE	<0.026
2-METHYLNAPHTHALENE	<0.024
FLUORANTHENE	<0.027
PYRENE	<0.034
BENZO (A) ANTHRACENE	<0.032
CHRYSENE	<0.032
BENZO (B) FLUORANTHENE	<0.034
BENZO (K) FLUORANTHENE	<0.043
BENZO (A) PYRENE	<0.027
INDENO (1, 2, 3-CD) PYRENE	<0.043
DIBENZO (A, H) ANTHRACENE	<0.045
BENZO (G, H, I) PERYLENE	<0.044
1, 2-DICHLOROBENZENE	<0.026
1, 4-DICHLOROBENZENE	<0.024
1, 2, 4-TRICHLOROBENZENE	<0.022
DIBENZOFURAN	<0.025
HEXACHLOROETHANE	<0.027
N-NITROSODIPHENYLAMINE	<0.030
DIMETHYLPHTHALATE	<0.050
DIETHYLPHTHALATE	<0.058
DI-N-BUTYLPHTHALATE	<0.034
BUTYLBENZYLPHTHALATE	<0.044
BIS (2-ETHYLHEXYL) PHTHALATE	0.13
DI-N-OCTYLPHTHALATE	<0.041

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	48	41 - 117
2-FLUOROBIPHENYL	58	36 - 128
TERPHENYL-D14	84	38 - 146

MAS I.D. # 821354-27

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLIQ2SD62(03)	DATE ANALYZED	: 04/07/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PHENOL .....	<23
2-METHYLPHENOL	<24
4-METHYLPHENOL	<26
2,4-DIMETHYLPHENOL .....	<23
PENTACHLOROPHENOL	<43
BENZYL ALCOHOL	<39
BENZOIC ACID .....	<190

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	106	39 - 132
2-FLUOROPHENOL	87	36 - 130
2,4,6-TRIBROMOPHENOL .....	107	13 - 133



SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: 03/18/98
PROJECT #	: 1189002.330101	DATE RECEIVED	: 03/21/98
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: 98BPXLI02SD62(03)	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.025
ACENAPHTHYLENE	<0.023
ACENAPHTHENE	<0.025
FLUORENE	<0.029
PHENANTHRENE	<0.029
ANTHRACENE	<0.027
2-METHYLNAPHTHALENE	0.031
FLUORANTHENE	<0.028
PYRENE	<0.035
BENZO (A) ANTHRACENE	<0.033
CHRYSENE	<0.033
BENZO (B) FLUORANTHENE	<0.035
BENZO (K) FLUORANTHENE	<0.044
BENZO (A) PYRENE	<0.028
NDENO (1, 2, 3-CD) PYRENE	<0.044
DIBENZO (A, H) ANTHRACENE	<0.046
BENZO (G, H, I) PERYLENE	<0.046
1, 2-DICHLOROBENZENE	<0.027
1, 4-DICHLOROBENZENE	<0.025
1, 2, 4-TRICHLOROBENZENE	<0.023
DIBENZOFURAN	<0.026
HEXACHLOROETHANE	<0.028
N-NITROSODIPHENYLAMINE	<0.030
DIMETHYLPHTHALATE	<0.051
DIETHYLPHTHALATE	<0.060
DI-N-BUTYLPHTHALATE	<0.035
BUTYLBENZYLPHTHALATE	<0.046
BIS (2-ETHYLHEXYL) PHTHALATE	0.052
DI-N-OCTYLPHTHALATE	<0.043

SURROGATE	PERCENT RECOVERY	LIMITS
NITROBENZENE-D5	43	41 - 117
2-FLUOROBIPHENYL	64	36 - 128
TERPHENYL-D14	67	38 - 146

MAS I.D. # 821354

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: N/A
PROJECT #	: 1189002.330101	DATE RECEIVED	: N/A
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
NAPHTHALENE	<0.017
ACENAPHTHYLENE	<0.015
ACENAPHTHENE	<0.017
FLUORENE	<0.019
PHENANTHRENE	<0.019
ANTHRACENE	<0.018
2-METHYLNAPHTHALENE	<0.017
FLUORANTHENE	<0.019
PYRENE	<0.023
BENZO (A) ANTHRACENE	<0.022
CHRYSENE	<0.022
BENZO (B) FLUORANTHENE	<0.024
BENZO (K) FLUORANTHENE	<0.030
BENZO (A) PYRENE	<0.019
INDENO (1, 2, 3-CD) PYRENE	<0.030
DIBENZO (A, H) ANTHRACENE	<0.031
BENZO (G, H, I) PERYLENE	<0.031
1, 2-DICHLOROBENZENE	<0.018
1, 4-DICHLOROBENZENE	<0.017
1, 2, 4-TRICHLOROBENZENE	<0.015
DIBENZOFURAN	<0.017
HEXACHLOROETHANE	<0.019
N-NITROSODIPHENYLAMINE	<0.020
DIMETHYLPHTHALATE	<0.034
DIETHYLPHTHALATE	<0.040
DI-N-BUTYLPHTHALATE	<0.024
BUTYLBENZYLPHTHALATE	<0.031
BIS (2-ETHYLHEXYL) PHTHALATE	<0.025
DI-N-OCTYLPHTHALATE	<0.029

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	73	41 - 117
2-FLUOROBIPHENYL	65	36 - 128
TERPHENYL-D14	75	38 - 146

MAS I.D. # 821354

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ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
DATA SUMMARY

CLIENT	: MONTGOMERY WATSON	DATE SAMPLED	: N/A
PROJECT #	: 1189002.330101	DATE RECEIVED	: N/A
PROJECT NAME	: LIBERTY ISLAND	DATE EXTRACTED	: 03/24/98
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/06/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

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COMPOUNDS RESULTS  
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PHENOL .....	<15
2-METHYLPHENOL	<16
4-METHYLPHENOL	<18
2,4-DIMETHYLPHENOL .....	<15
PENTACHLOROPHENOL	<29
BENZYL ALCOHOL	<26
BENZOIC ACID .....	<130

SURROGATE PERCENT RECOVERY

LIMITS

PHENOL-D5	95	39 - 132
2-FLUOROPHENOL	80	36 - 130
2,4,6-TRIBROMOPHENOL .....	47	13 - 133

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA

CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND  
SAMPLE MATRIX : SEDIMENT  
EPA METHOD : 8270A

SAMPLE I.D. # : BLANK  
DATE EXTRACTED : 03/24/98  
DATE ANALYZED : 04/06/98  
UNITS : ug/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
PHENOL	<15.4	200	191	96	N/A	N/A	N/A
2-METHYLPHENOL	<16.4	200	173	87	N/A	N/A	N/A
4-METHYLPHENOL	<17.7	200	169	85	N/A	N/A	N/A
2,4-DIMETHYLPHENOL	<15.2	200	17.4	9H	N/A	N/A	N/A
PENTACHLOROPHENOL	<29.0	200	162	81	N/A	N/A	N/A
BENZYL ALCOHOL	<26.3	400	137	34H	N/A	N/A	N/A
BENZOIC ACID	3.39	1000	673	67	N/A	N/A	N/A

CONTROL LIMITS

	% REC.	RPD
PHENOL	40 - 160	20
2-METHYLPHENOL	40 - 160	20
4-METHYLPHENOL	40 - 160	20
2,4-DIMETHYLPHENOL	40 - 160	20
PENTACHLOROPHENOL	40 - 160	20
BENZYL ALCOHOL	40 - 160	20
BENZOIC ACID	40 - 160	20

SURROGATE RECOVERIES

	SPIKE	DUP. SPIKE	LIMITS
PHENOL-D5	119	N/A	39 - 132
2-FLUOROPHENOL	108	N/A	36 - 130
2,4,6-TRIBROMOPHENOL	86	N/A	13 - 133

H = Out of limits.

SEMIVOLATILE ORGANICS ANALYSIS  
 QUALITY CONTROL DATA

 CLIENT : MONTGOMERY WATSON  
 PROJECT # : 1189002.330101  
 PROJECT NAME : LIBERTY ISLAND  
 SAMPLE MATRIX : SEDIMENT  
 EPA METHOD : 8270A

 SAMPLE I.D. # : BLANK  
 DATE EXTRACTED : 03/24/98  
 DATE ANALYZED : 04/23/98  
 UNITS : mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
NAPHTHALENE	<0.0170	0.400	0.323	81	0.316	79	2
ACENAPHTHYLENE	<0.0153	0.400	0.300	75	0.298	74	1
ACENAPHTHENE	<0.0169	0.400	0.299	75	0.299	75	0
FLUORENE	<0.0194	0.400	0.325	81	0.312	78	4
PHENANTHRENE	<0.0194	0.400	0.317	79	0.306	76	4
ANTHRACENE	<0.0179	0.400	0.291	73	0.295	74	1
2-METHYLNAPHTHALENE	<0.0166	0.400	0.313	78	0.304	76	3
FLUORANTHENE	<0.0188	0.400	0.369	92	0.362	90	2
PYRENE	<0.0234	0.400	0.409	102	0.368	92	11
BENZO (A) ANTHRACENE	<0.0218	0.400	0.401	100	0.365	91	9
CHRYSENE	<0.0222	0.400	0.400	100	0.357	89	11
BENZO (B) FLUORANTHENE	<0.0236	0.400	0.330	83	0.307	77	7
BENZO (K) FLUORANTHENE	<0.0296	0.400	0.357	89	0.328	82	8
BENZO (A) PYRENE	<0.0189	0.400	0.313	78	0.298	74	5
INDENO (1, 2, 3-CD) PYRENE	<0.0296	0.400	0.335	84	0.304	76	10
DIBENZO (A, H) ANTHRACENE	<0.0308	0.400	0.311	78	0.281	70	10
BENZO (G, H, I) PERYLENE	<0.0306	0.400	0.343	86	0.309	77	10
1, 2-DICHLOROBENZENE	<0.0182	0.400	0.272	68	0.265	66	3
1, 4-DICHLOROBENZENE	<0.0165	0.400	0.269	67	0.261	65	3
1, 2, 4-TRICHLOROBENZENE	<0.0154	0.400	0.293	73	0.289	72	1
DIBENZOFURAN	<0.0173	0.400	0.316	79	0.312	78	1
HEXACHLOROETHANE	<0.0187	0.400	0.321	80	0.312	78	3
N-NITROSODIPHENYLAMINE	<0.0204	0.400	0.138	35H	0.149	37H	8
DIMETHYLPHTHALATE	<0.0342	0.400	0.197	49	0.207	52	5
DIETHYLPHTHALATE	<0.0402	0.400	0.305	76	0.303	76	1
DI-N-BUTYLPHTHALATE	<0.0236	0.400	0.363	91	0.354	88	3
BUTYLBENZYLPHTHALATE	<0.0306	0.400	0.377	94	0.347	87	8
BIS (2-ETHYLHEXYL) PHTHALATE	<0.0254	0.400	0.507	127	0.451	113	12
DI-N-OCTYLPHTHALATE	<0.0286	0.400	0.426	107	0.383	96	11

H = Out of limits.

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MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA  
CONTINUED

CLIENT	: MONTGOMERY WATSON	SAMPLE I.D. #	: BLANK
PROJECT #	: 1189002.330101	DATE EXTRACTED	: 03/24/98
PROJECT NAME	: LIBERTY ISLAND	DATE ANALYZED	: 04/23/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
CONTROL LIMITS				% REC.			RPD
NAPHTHALENE				40 - 160			20
ACENAPHTHYLENE				40 - 160			20
ACENAPHTHENE				40 - 160			20
FLUORENE				40 - 160			20
PHENANTHRENE				40 - 160			20
ANTHRACENE				40 - 160			20
2-METHYLNAPHTHALENE				40 - 160			20
FLUORANTHENE				40 - 160			20
PYRENE				40 - 160			20
BENZO (A) ANTHRACENE				40 - 160			20
CHRYSENE				40 - 160			20
BENZO (B) FLUORANTHENE				40 - 160			20
BENZO (K) FLUORANTHENE				40 - 160			20
BENZO (A) PYRENE				40 - 160			20
INDENO (1, 2, 3-CD) PYRENE				40 - 160			20
DIBENZO (A, H) ANTHRACENE				40 - 160			20
BENZO (G, H, I) PERYLENE				40 - 160			20
1, 2-DICHLOROBENZENE				40 - 160			20
1, 4-DICHLOROBENZENE				40 - 160			20
1, 2, 4-TRICHLOROBENZENE				40 - 160			20
DIBENZOFURAN				40 - 160			20
HEXACHLOROETHANE				40 - 160			20
N-NITROSODIPHENYLAMINE				40 - 160			20
DIMETHYLPHTHALATE				40 - 160			20
DIETHYLPHTHALATE				40 - 160			20
DI-N-BUTYLPHTHALATE				40 - 160			20
BUTYLBENZYLPHTHALATE				40 - 160			20
BIS (2-ETHYLHEXYL) PHTHALATE				40 - 160			20
DI-N-OCTYLPHTHALATE				40 - 160			20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
NITROBENZENE-D5	84	83	41 - 117
2-FLUOROBIPHENYL	72	70	36 - 128
TERPHENYL-D14	97	87	38 - 146

MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA

CLIENT	: MONTGOMERY WATSON	SAMPLE I.D. #	: 821354-17
PROJECT #	: 1189002.330101	DATE EXTRACTED	: 03/24/98
PROJECT NAME	: LIBERTY ISLAND	DATE ANALYZED	: 04/06/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8270A		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
PHENOL	10.1	339	280	80	264	75	6
2-METHYLPHENOL	<27.8	339	303	89	285	84	6
4-METHYLPHENOL	17.3	339	333	93	313	87	6
2,4-DIMETHYLPHENOL	<25.8	339	235	69	223	66	5
PENTACHLOROPHENOL	<49.2	339	166	49	197	58	17
BENZYL ALCOHOL	2.46	678	226	33H	212	31H	6
BENZOIC ACID	44.2	1690	1610	93	1540	89	4

CONTROL LIMITS	% REC.	RPD
PHENOL	40 - 160	20
2-METHYLPHENOL	40 - 160	20
4-METHYLPHENOL	40 - 160	20
,4-DIMETHYLPHENOL	40 - 160	20
PENTACHLOROPHENOL	40 - 160	20
BENZYL ALCOHOL	40 - 160	20
BENZOIC ACID	40 - 160	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
PHENOL-D5	99	95	39 - 132
2-FLUOROPHENOL	93	85	36 - 130
2,4,6-TRIBROMOPHENOL	86	88	13 - 133

H = Out of limits.

SEMIVOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA

CLIENT	: MONTGOMERY WATSON	SAMPLE I.D. #	: 821354-17
PROJECT #	: 1189002.330101	DATE EXTRACTED	: 03/24/98
PROJECT NAME	: LIBERTY ISLAND	DATE ANALYZED	: 04/22/98
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8270A		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPI
NAPHTHALENE	<0.0289	0.678	0.427	63	0.458	68	7
ACENAPHTHYLENE	<0.0259	0.678	0.522	77	0.558	82	7
ACENAPHTHENE	<0.0286	0.678	0.520	77	0.548	81	5
FLUORENE	<0.0329	0.678	0.573	85	0.594	88	4
PHENANTHRENE	<0.0329	0.678	0.609	90	0.643	95	5
ANTHRACENE	<0.0303	0.678	0.560	83	0.577	85	3
2-METHYLNAPHTHALENE	<0.0281	0.678	0.489	72	0.511	75	4
FLUORANTHENE	<0.0318	0.678	0.663	98	0.696	103	5
PYRENE	<0.0397	0.678	0.677	100	0.858	127	24 <sup>u</sup>
BENZO (A) ANTHRACENE	<0.0369	0.678	0.654	96	0.702	104	7
CHRYSENE	<0.0376	0.678	0.701	103	0.853	126	20
BENZO (B) FLUORANTHENE	<0.0400	0.678	0.597	88	0.581	86	3
BENZO (K) FLUORANTHENE	<0.0502	0.678	0.523	77	0.599	88	14
BENZO (A) PYRENE	<0.0321	0.678	0.570	84	0.591	87	4
INDENO (1, 2, 3-CD) PYRENE	<0.0502	0.678	0.580	86	0.616	91	6
DIBENZO (A, H) ANTHRACENE	<0.0522	0.678	0.541	80	0.568	84	5
BENZO (G, H, I) PERYLENE	<0.0519	0.678	0.608	90	0.647	95	6
1, 2-DICHLOROBENZENE	<0.0308	0.678	0.333	49	0.354	52	6
1, 4-DICHLOROBENZENE	<0.0280	0.678	0.315	46	0.347	51	10
1, 2, 4-TRICHLOROBENZENE	<0.0261	0.678	0.390	58	0.415	61	6
DIBENZOFURAN	<0.0294	0.678	0.560	83	0.590	87	5
HEXACHLOROETHANE	<0.0317	0.678	0.337	50	0.345	51	2
N-NITROSODIPHENYLAMINE	<0.0346	0.678	0.465	69	0.528	78	13
DIMETHYLPHTHALATE	<0.0580	0.678	0.369	54	0.359	53	3
DIETHYLPHTHALATE	<0.0681	0.678	0.552	81	0.571	84	3
DI-N-BUTYLPHTHALATE	<0.0400	0.678	0.623	92	0.638	94	2
BUTYLBENZYLPHTHALATE	<0.0519	0.678	0.624	92	0.761	112	20
BIS (2-ETHYLHEXYL) PHTHALATE	0.114	0.678	0.848	108	1.05	138	211
DI-N-OCTYLPHTHALATE	<0.0485	0.678	0.590	87	0.621	92	5

H = Out of limits.

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MAS I.D. # 821354

**MultiChem**  
ANALYTICAL SERVICES

SEMIVOLATILE ORGANICS ANALYSIS  
QUALITY CONTROL DATA  
CONTINUED


CLIENT : MONTGOMERY WATSON  
PROJECT # : 1189002.330101  
PROJECT NAME : LIBERTY ISLAND  
SAMPLE MATRIX : SEDIMENT  
EPA METHOD : 8270A

SAMPLE I.D. # : 821354-17  
DATE EXTRACTED : 03/24/98  
DATE ANALYZED : 04/22/98  
UNITS : mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
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CONTROL LIMITS	% REC.	RPD
NAPHTHALENE	40 - 160	20
ACENAPHTHYLENE	40 - 160	20
ACENAPHTHENE	40 - 160	20
FLUORENE	40 - 160	20
PHENANTHRENE	40 - 160	20
ANTHRACENE	40 - 160	20
2-METHYLNAPHTHALENE	40 - 160	20
FLUORANTHENE	40 - 160	20
PYRENE	40 - 160	20
ENZO (A) ANTHRACENE	40 - 160	20
CHRYSENE	40 - 160	20
BENZO (B) FLUORANTHENE	40 - 160	20
BENZO (K) FLUORANTHENE	40 - 160	20
BENZO (A) PYRENE	40 - 160	20
INDENO (1, 2, 3-CD) PYRENE	40 - 160	20
DIBENZO (A, H) ANTHRACENE	40 - 160	20
BENZO (G, H, I) PERYLENE	40 - 160	20
1, 2-DICHLOROBENZENE	40 - 160	20
1, 4-DICHLOROBENZENE	40 - 160	20
1, 2, 4-TRICHLOROBENZENE	40 - 160	20
DIBENZOFURAN	40 - 160	20
HEXACHLOROETHANE	40 - 160	20
N-NITROSODIPHENYLAMINE	40 - 160	20
DIMETHYLPHTHALATE	40 - 160	20
DIETHYLPHTHALATE	40 - 160	20
DI-N-BUTYLPHTHALATE	40 - 160	20
BUTYLBENZYLPHTHALATE	40 - 160	20
BIS (2-ETHYLHEXYL) PHTHALATE	40 - 160	20
DI-N-OCTYLPHTHALATE	40 - 160	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
NITROBENZENE-D5	56	62	41 - 117
2-FLUOROBIPHENYL	69	74	36 - 128
TERPHENYL-D14	95	123	38 - 146

<b>Montgomery Watson</b> 4100 Spenard Road Anchorage AK 99517 (907) 248-8883 Fax (907) 248-8884 ATTN: Lynn DeGeorge		Laboratory: Alutchem Analytical Services 2000 West International Airport Road Anchorage, Alaska 99502 (907) 248-8273 (907) 248-8273 FAX Ann: Mike Vogel		<b>SOIL</b>						<b>WATER</b>		MAS 821354  <b>ADEC</b> 21 cal day.
		MW Job Number: 1187002 21-DAY 380101 TURNAROUND		VOCs-8260a 2 x 2-oz amber glass	SVOCs-8270 1 x 8-oz amber glass	TOC-415.1 1 x 4-oz amber glass	Grain Size - ASTM D422 1 x 8-oz amber glass	Particle Size - ASTM D2487 1 x 4-oz amber glass	TSS-160.2 250 ml poly	TOC-415.1 1 x 250 ml amber	Comments	
Sampler's Signature 1998 <i>B. Borchman</i>												
MAS#	On Date	Time	Sample ID	Matrix	Total Containers							
-1	3-18	12210	98BPXLI 02 WA01	w	2						✓	✓
-2	3-18	12130	98BPXLI 02 WA02	w	2						✓	✓
-3	3-18	12200	98BPXLI 02 WA03	w	2						✓	✓
-4	3-18	11530	98BPXLI 09 WA01	w	2						✓	✓
-5	3-18	1540	98BPXLI 09 WA02	w	2						✓	✓
-6	3-18	1550	98BPXLI 09 WA03	w	2						✓	✓
-7	3-18	11300	98BPXLI 14 WA01	w	2						✓	✓
-8	3-18	11315	98BPXLI 14 WA02	w	2						✓	✓
-9	3-19	01200	98BPXLI 30 WA01	w	2						✓	✓
-10	3-19	0120	98BPXLI 30 WA01	w	2						✓	✓
-11	3-19	0140	98BPXLI 30 WA02	w	2						✓	✓
			<del>98BPXLI WA03</del>									
-12	3-19	0150	98BPXLI 30 WA6Z		2						✓	✓
-13	3-18	2110	98BPXLI 02 WA61		2						✓	✓
			<del>98BPXLI WA</del>									
			<del>98BPXLI WA</del>									
Requalified by <i>B. Borchman</i>				Date 5-20-98 Time 10:00		Hand Delivered <input checked="" type="checkbox"/> N Shipped Via		Airbill Number		Date Time		
Received for Laboratory by <i>Lynn DeGeorge</i>				Date 3/20 Time 10:00		Cooler Temperature 4.8° 3.7° °C Upon Arrival 5.1° 11.7°		Laboratory Notified		Faxed		

MS/MSD

No Sample


REC *Lynn DeGeorge* 3/21/98 0930

4

1-12-04

pg 2 of 2

1189002.  
330101

Montgomery Watson 4100 Spenard Road, Anchorage AK 99517 (907) 248-8883 Fax (907) 248-8884 ATTN: Lynn DeGeorge		Laboratory: Mulichem Analytical Services 27XX West International Airport Road Anchorage, Alaska 99512 (907) 248-8273 (907) 248-8273 FAX Attn: Mike Vogel		SOIL					WATER		MAS 821354  ADEC
		1189002, 330101 MW Job Number: C 118922-30101 21-DAY TURNAROUND		VOCs- 8260a 2 x 2-oz amber glass SVOCs- 8270 1 x 8-oz amber glass TOC- 415.1 1 x 4-oz amber glass Grain Size - ASTM D422 1 x 8-oz amber glass Particle Size- ASTM D2487 1 x 4-oz amber glass					TSS- 160.2 250 ml poly TOC- 415.1 1 x 250 ml amber		
Sampler's Signature 1998 <i>B. M. ...</i>			Cool to 4 degrees C					Cool to 4 degrees C		112504	
MAS#	Date	Time	Sample ID	Matrix	Total Containers						
-14	3-18	2210	98BPXLI 02 SD01(01)	S	5	✓	✓	✓	✓		
-15	3-18	2230	98BPXLI 02 SD02(03)	S	5						
-16	3-18	2330	98BPXLI 02 SD03(09)	S	5						
-17	3-18	1610	98BPXLI 09 SD01(01)	S	5						
-18	3-18	1620	98BPXLI 09 SD02(03)	S	5				MAS / MSD		
-19	3-18	1630	98BPXLI 09 SD03(09)	S	5						
-20	3-18	1330	98BPXLI 14 SD01(01)	S	5						
-21	3-18	1345	98BPXLI 14 SD02(03)	S	5						
-22	3-18	1400	98BPXLI 14 SD03(09)	S	5						
-23	3-19	10250	98BPXLI 30 SD01(01)	S	5						
-24	3-19	10300	98BPXLI 30 SD02(03)	S	5			✓	✓		
-25	3-19	0330	98BPXLI 30 SD03(09)	S	5	✓	✓	✓	✓		
-26	3-19	0310	98BPXLI 30 SD6 2(03)	S	3	✓	✓	✓			
-27	3-18	2200	98BPXLI 62 SD62(03)	S	3	✓	✓	✓			
			98BPXLI SD ( )								
			98BPXLI SD ( )								
Relinquished by: <i>B. M. ...</i>			Date: 3-20-98 Time: 1:50		Hand Delivered: <input checked="" type="checkbox"/> N Shipped Via:		Airbill Number: _____ Date: _____ Time: _____				
Received for Laboratory by: <i>Y. ...</i>			Date: 3-20-98 Time: 10:00		Cooler Temperature: _____ °C Upon Arrival:		Laboratory Notified: _____ Faxed:				

MAS#  
-14  
-15  
-16  
-17  
-18  
-19  
-20  
-21  
-22  
-23  
-24  
-25  
-26  
-27

10 *...* 3/21/98  
0930

*...*

N #1

(if Y see other side)

MultiChem Analytical Services  
SAMPLE LOG-IN CHECKLISTDATE: 3/21/98  
TIME: 0930  
INITIALS: JVDACCESSION NO. 821354  
CLIENT: MAS-AK  
PROJECT: LIBERTY ISLAND

## Shipping:

Type:	COC Seals:	Intact?	Packing Material:
<input checked="" type="checkbox"/> Cooler	<input checked="" type="checkbox"/> Ship. Cont.	<input checked="" type="radio"/> Y <input type="radio"/> N	<input type="checkbox"/> Styrofoam
<input type="checkbox"/> Box	<input type="checkbox"/> On Bottles	<input type="radio"/> Y <input type="radio"/> N	<input checked="" type="checkbox"/> Bubble Bags
<input type="checkbox"/> Other	<input type="checkbox"/> None		<input type="checkbox"/> Foam Vial Packs
			<input type="checkbox"/> Other

## Refrigerant:

 Gel Ice Pack  
 Loose Ice  
 Other  
 None

## Frozen?

 Y  N  
 Y  N  
 Y  N

## Received Via:

 Hand Delivery  
 Federal Express  
 Airborne  
 Other: \_\_\_\_\_
  Courier  
 UPS  
 Taxi  
 Goldstreak

## Sample Information:

Samp. #	Bottle #	Type	Soil VOAs	0 headspace	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N
<u>14</u>	<u>42</u>	Soil	Water VOAs	0 headspace	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> N
<u>13</u>	<u>26</u>	Water		Preserved?	<input type="radio"/> Y <input type="radio"/> N
		Product		Trip blanks?	<input type="radio"/> Y <input type="radio"/> N
		Other			

## Condition of Samples:

Containers:

Intact? (Bottle/Lid)

Correct Type?

 Y  N  
 Y  N

Waters Preserved?

CA # (if needed)

ID's

Match C.O.C.

 Y  N  N Y  N  NTemperature: 1.5 C #1 CA NO.

(See corrective action on reverse side for explanation if temperature is outside of the MAS recommended range.)

LAB USE ONLY:  NO NOTICE  SEND OUTS NEEDED BY COC/TAT DOES NOT MATCH NOTICE  NEED TEST(S) VERIFIED BY CLIENT

COMMENTS:

MULTICHEM Analytical Services  
Corrective Action Sheet

ACCESSION # 821354

CORRECTIVE ACTION AREA

PLAIN CORRECTIVE ACTION:

CA NO.

Salvaged Sample

Replaced Lid

Preserved Sample w/

CA NO.

Replaced Bottle

Notified P.M.

CA NO.

Verified Id w/Client

Notified Client

Comments:

Temperature: 1.5 C #1 CA NO.

Comments: Samples were received outside of the MAS recommended temperature range (4 C +/- 2 C). Samples were received within 5 hours of collection and may not have had sufficient time to equilibrate with coolant. A temperature range from 2 to 15 degrees Celsius is considered acceptable. The samples will be analyzed as scheduled unless directed otherwise by client.

Comments: Samples were received outside of the MAS recommended temperature range (4 C +/- 2 C). The samples will be analyzed as scheduled unless directed otherwise by client.

Tech. Signature/Date: *[Signature]* 3/21/98

P.M. Signature/Date: *[Signature]* 3/24/98

CORRECTIVE ACTION TAKEN:

Explain Action Taken:

*Alaska Airlines*

**GOLDSTREAK  
PACKAGE EXPRESS**

Airline Origin AIR WAYBILL Number  
**027- ANU 5247 4295**

From Shipper:  
**MULTICHEM ANALYTICAL SVCS**  
 Address: **2000 W. HURON A/P RD #177**  
 City: **ANCHORAGE** State: **AK** Zip Code: **99502**  
 Shipper's Signature: **SUBJECT TO RATE AUDIT** Date: \_\_\_\_\_ Time: \_\_\_\_\_ a.m. p.m.

Total Pieces: **3** Total Weight: **1.38**  
 Form of Payment  
 Cash  Check  GBL-Attach GBL  
 AS/OX Account Number **27442758720**  
 Credit Card Number

MULTIPLE PIECES FOR AS FLIGHTS ONLY  
 Please All Live Animal

POS.	WT RANGE	RATE	CHARGE
	GSK LETTER		
	1-6		
	16-60		
	61-70		
	71-100		

The Federal Aviation Administration requires Alaska Airlines to inform you of the following "Shipper's Security Notification":  
 I certify that this shipment does not contain any unauthorized explosives, destructive devices or hazardous materials. I consent to a search of this shipment. I am aware that this endorsement and original signature, along with other shipping documents, will be retained on file until the shipment is delivered.  
 Type of first personal identification reviewed: \_\_\_\_\_  
 Matching photo ID? Indicate: Yes or No \_\_\_\_\_  
 Number appearing on ID: \_\_\_\_\_  
 Type of second personal identification reviewed: \_\_\_\_\_  
 Matching photo ID? Indicate: Yes or No \_\_\_\_\_  
 Number appearing on ID: \_\_\_\_\_

Contents: **NONHAZ. MARGOT**  
 Insured Value: \_\_\_\_\_  
 Declared Value of Customs: \_\_\_\_\_  
 Remarks: **KEEP COOL**

Validata Approval: \_\_\_\_\_  
 Executed By: \_\_\_\_\_ Date/Time: \_\_\_\_\_ a.m. p.m.

Carrier	Flight	Destination	E.T.A.
<b>AS</b>			

Subtotal Charges: \_\_\_\_\_  
 Other Charges: \_\_\_\_\_  
 1st Carrier: \_\_\_\_\_  
 2nd Carrier: \_\_\_\_\_  
 3rd Carrier: \_\_\_\_\_

To Consignee: (Complete Consignee information required on package)  
**MULTICHEM ANALYTICAL SVCS**  
 Address: **560 NACHES AVE SW #101**  
 City: **RENTON** State: **WA** Zip Code: **98055**  
 Consignee's Printed Name - Signature (Received in Good Order Except as Noted) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ a.m. p.m.

CHECK ONE ONLY  
 AIRPORT TO AIRPORT SERVICE  
 PICK-UP ONLY AS AGENT  
 DELIVERY ONLY AS AGENT  
 DOOR TO DOOR AS AGENT  
 AS 800 SERVICES (800) 834-7113

Tax (Offline only): \_\_\_\_\_  
 AS COURIER CHARGES: \_\_\_\_\_  
 Pickup (NON AS COURIER): \_\_\_\_\_  
 Delivery (NON AS COURIER): \_\_\_\_\_  
 Special Service: \_\_\_\_\_  
 Insurance: \_\_\_\_\_

Origin Courier Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ a.m. p.m.  
 Destination Courier Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ a.m. p.m.  
 Airline Origin AIR WAYBILL Number:  
**027- ANU 5247 4295**

This is a non-negotiable AIR WAYBILL subject to the terms and conditions set forth on the reverse of shipper's copy.  
 Thank you for shipping with *Alaska Airlines*  
 P.O. Box 68900  
 Seattle, WA 98168

TOTAL: \_\_\_\_\_

SHIPPER TO COMPLETE OR SIGN

Door-to-Door Service: (800) 834-7113

**Consignee Memo**

**APPENDIX D**  
**c. Laboratory Data Sheet-BPX**

# Prudhoe Bay Laboratory Analysis Report

Record File: 98030213  
Sample Type: 1201

Sample ID		PB09347	PB09348	PB09349	PB09350	PB09351	PB09352
Date		03/18/98	03/18/98	03/18/98	03/18/98	03/18/98	03/18/98
Time		21:00	21:30	22:00	15:30	15:40	15:50
Facility		Endicott	Endicott	Endicott	Endicott	Endicott	Endicott
Skid/Module		N/A	N/A	N/A	N/A	N/A	N/A
Well		N/A	N/A	N/A	N/A	N/A	N/A
Location		98BPXLI 02 WA01	98BPXLI 02 WA02	98BPXLI 02 WA03	98BPXLI 09 WA01	98BPXLI 09 WA02	98BPXLI 09 WA03
Description		seawater	seawater	seawater	seawater	seawater	seawater
Comments							
Tests	UOM	Results	Results	Results	Results	Results	Results
BOD	mg/L	<1	<1	<1	<1	<1	<1
Turbidity	NTU	2	5	0	11	7	11

Sample ID		PB09353	PB09354	PB09355	PB09356	PB09357	PB09358
Date		03/18/98	03/18/98	03/19/98	03/19/98	03/19/98	03/19/98
Time		13:00	13:15	02:00	01:20	01:40	01:50
Facility		Endicott	Endicott	Endicott	Endicott	Endicott	Endicott
Skid/Module		N/A	N/A	N/A	N/A	N/A	N/A
Well		N/A	N/A	N/A	N/A	N/A	N/A
Location		98BPXLI 14 WA01	98BPXLI 14 WA02	98BPXLI 30 WA03	98BPXLI 30 WA01	98BPXLI 30 WA02	98BPXLI 30 WA02
Description		seawater	seawater	seawater	seawater	seawater	seawater
Comments							
Tests	UOM	Results	Results	Results	Results	Results	Results
BOD	mg/L	<1	<1	<1	<1	<1	<1
Turbidity	NTU	1	3	6	0	0	---

Sample ID		PB09359					
Date		03/18/98					
Time		21:10					
Facility		Endicott					
Skid/Module		N/A					
Well		N/A					
Location		98BPXLI 02 WA61					
Description		seawater					
Comments							
Tests	UOM	Results					
BOD	mg/L	<1					
Turbidity	NTU	---					

Phone: 659-4861 (659-4357 no longer in use), Fax: 659-4313.

Analyzed by: DB  
Don Brink  
907 659 4861