

Fatty Acid Concentrations - Horse Creek at Goose Pond Road Special Sampling

As part of the Horse Creek Stewardship Program, Mosaic Phosphates samples four locations once per month on Horse Creek in Hardee and Desoto Counties for a number of chemical and physical parameters. One of these parameters is total fatty acids. A “trigger level” of 0.5 mg/l was set for total fatty acids concentrations at Goose Pond Road in the Program.

Specific Sampling

A special sampling program was carried out on June 2, 2005. Total fatty acids concentrations were measured at Horse Creek at State Road 64, in Horse Creek at Goose Pond Road, and on Brushy Creek at State Road 64. Additionally a filtered sample was taken from Horse Creek at Goose Pond Road and a duplicate sample was taken there as well. The Horse Creek at State Road 64 and Brushy Creek at State Road 64 samples represent the two major sources of water that feed the Horse Creek Prairie and are downstream from any potential source of phosphate mining influence in that basin by any party. The Horse Creek at Goose Pond Road sample represents the outflow from the Horse Creek Prairie. The duplicate was taken as a quality control sample to help assess the precision of the fatty acid analysis. The filtered sample was taken to see which portion of any of the total fatty acid detected was dissolved and which portion was associated with substances that would be retained by a 0.45 micron filter.

No fatty acids were detected in any of the samples taken on June 2, 2005.

Discussion

With no fatty acids being detected in any of the samples, no conclusions can be drawn about any differences between the sites. Total fatty acids have never been detected above the method detection limit at any sampling station other than Goose Pond Road. If the fatty acids detected were coming from Mosaic’s (or any other) phosphate mining operation, it would follow that they would be in an even greater concentration at State Road 64 in whichever stream drains that particular facility (four miles closer to the mining activities and subject to less dilution).

ANALYTICAL REPORT

Job Number: 660-2321.1

Job Description: Horse Creek

For:

Mosaic Phosphates
P.O. Box 2000
Mulberry, FL 33860

Attention: Mr. Ross Franklin



Tina Fritz
Project Manager II
tfritz@stl-inc.com
06/15/2005

Methods: FDEP, DOH Certification #: E84282 These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report. The estimated uncertainty associated with these reported results is available upon request.

Severn Trent Laboratories, Inc.

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METHOD SUMMARY

Client: Mosaic Phosphates

Job Number: 660-2321.1

Description	Method	Preparation Method
Matrix: Water		
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	SW846 8270C	
Separatory Funnel Liquid-Liquid Extraction		SW846 3510C

REFERENCES

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: Mosaic Phosphates

Job Number: 660-2321.1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
660-2321-1	HORSE CR@SR64	Water	06/02/2005 1055	06/03/2005 1030
660-2321-2	HORSE CR@GOOSE POND FILTERED	Water	06/02/2005 1120	06/03/2005 1030
660-2321-3	HORSE CR@GOOSE POND	Water	06/02/2005 1150	06/03/2005 1030
660-2321-4	BRUSHEY CR@SR64	Water	06/02/2005 1230	06/03/2005 1030
660-2321-5	DUPLICATE	Water	06/02/2005 0000	06/03/2005 1030

Analytical Data

Client: Mosaic Phosphates

Job Number: 660-2321.1

Client Sample ID: **HORSE CR@SR64**

Lab Sample ID: 660-2321-1

Date Sampled: 06/02/2005 1055

Client Matrix: Water

Date Received: 06/03/2005 1030

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: 8270C

Analysis Batch: 660-8520

Instrument ID: HP 6890/5973

Preparation: 3510C

Prep Batch: 660-8181

Lab File ID: 1BF13014.D

Dilution: 1.0

Initial Weight/Volume: 980 mL

Date Analyzed: 06/13/2005 1815

Final Weight/Volume: 1 mL

Date Prepared: 06/08/2005 0830

Injection Volume:

Analyte	Result (mg/L)	Qualifier	RL	PQL
Total Fatty Acids	0.51	U	0.51	0.51
Surrogate	%Rec	Acceptance Limits		
2,4-Dichlorophenylacetic acid	72	13 - 170		

Analytical Data

Client: Mosaic Phosphates

Job Number: 660-2321.1

Client Sample ID: **HORSE CR@GOOSE POND FILTERED**

Lab Sample ID: 660-2321-2

Date Sampled: 06/02/2005 1120

Client Matrix: Water

Date Received: 06/03/2005 1030

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch:	660-8520	Instrument ID:	HP 6890/5973
Preparation:	3510C	Prep Batch:	660-8181	Lab File ID:	1BF13015.D
Dilution:	1.0			Initial Weight/Volume:	900 mL
Date Analyzed:	06/13/2005 1844			Final Weight/Volume:	1 mL
Date Prepared:	06/08/2005 0830			Injection Volume:	

Analyte	Result (mg/L)	Qualifier	RL	PQL
Total Fatty Acids	0.56	U	0.56	0.56
Surrogate	%Rec		Acceptance Limits	
2,4-Dichlorophenylacetic acid	85		13 - 170	

Analytical Data

Client: Mosaic Phosphates

Job Number: 660-2321.1

Client Sample ID: **HORSE CR@GOOSE POND**

Lab Sample ID: 660-2321-3

Date Sampled: 06/02/2005 1150

Client Matrix: Water

Date Received: 06/03/2005 1030

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch:	660-8520	Instrument ID:	HP 6890/5973
Preparation:	3510C	Prep Batch:	660-8181	Lab File ID:	1BF13016.D
Dilution:	1.0			Initial Weight/Volume:	970 mL
Date Analyzed:	06/13/2005 1914			Final Weight/Volume:	1 mL
Date Prepared:	06/08/2005 0830			Injection Volume:	

Analyte	Result (mg/L)	Qualifier	RL	PQL
Total Fatty Acids	0.52	U	0.52	0.52
Surrogate	%Rec		Acceptance Limits	
2,4-Dichlorophenylacetic acid	84		13 - 170	

Analytical Data

Client: Mosaic Phosphates

Job Number: 660-2321.1

Client Sample ID: **BRUSHEY CR@SR64**

Lab Sample ID: 660-2321-4

Date Sampled: 06/02/2005 1230

Client Matrix: Water

Date Received: 06/03/2005 1030

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch:	660-8520	Instrument ID:	HP 6890/5973
Preparation:	3510C	Prep Batch:	660-8181	Lab File ID:	1BF13017.D
Dilution:	1.0			Initial Weight/Volume:	990 mL
Date Analyzed:	06/13/2005 1943			Final Weight/Volume:	1 mL
Date Prepared:	06/08/2005 0830			Injection Volume:	

Analyte	Result (mg/L)	Qualifier	RL	PQL
Total Fatty Acids	0.51	U	0.51	0.51
Surrogate	%Rec	Acceptance Limits		
2,4-Dichlorophenylacetic acid	81	13 - 170		

Analytical Data

Client: Mosaic Phosphates

Job Number: 660-2321.1

Client Sample ID: **DUPLICATE**

Lab Sample ID: 660-2321-5

Date Sampled: 06/02/2005 0000

Client Matrix: Water

Date Received: 06/03/2005 1030

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch:	660-8520	Instrument ID:	HP 6890/5973
Preparation:	3510C	Prep Batch:	660-8181	Lab File ID:	1BF13018.D
Dilution:	1.0			Initial Weight/Volume:	980 mL
Date Analyzed:	06/13/2005 2012			Final Weight/Volume:	1 mL
Date Prepared:	06/08/2005 0830			Injection Volume:	

Analyte	Result (mg/L)	Qualifier	RL	PQL
Total Fatty Acids	0.51	U	0.51	0.51
Surrogate	%Rec		Acceptance Limits	
2,4-Dichlorophenylacetic acid	90		13 - 170	

DATA REPORTING QUALIFIERS

Client: Mosaic Phosphates

Job Number: 660-2321.1

Lab Section	Qualifier	Description
GC/MS Semi VOA	U	Indicates that the compound was analyzed for but not detected

Quality Control Results

Client: Mosaic Phosphates

Job Number: 660-2321.1

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method Blank - Batch: 660-8181

Lab ID: MB 660-8181/1-A Date Analyzed: 06/13/2005 1647 Dilution: 1.0
 Matrix: Water Units: mg/L

Analyte	Result	Qualifier	RL	PQL
Total Fatty Acids	0.50	U	0.50	0.50

Laboratory Control Sample/ Control Duplicate - Batch: 660-8181

LCS Lab ID: LCS 660-8181/2-A Date Analyzed: 06/13/2005 1716 Dilution: 1.0
 LCSD Lab ID: LCSD 660-8181/3-A Date Analyzed: 06/13/2005 1745 Dilution: 1.0
 Matrix: Water

Analyte	% Recovery		Recovery Limits	RPD	RPD Limit	Qualifier
	LCS	LCSD				
Total Fatty Acids	85	108	40 - 150	24	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN
TRENT

STL

STL Tampa
6712 Benjamin Road, Suite 100
Tampa, FL 33634

Website: www.stl-inc.com
Phone: (813) 885-7427
Fax: (813) 885-7049

660-2321

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE <i>Horse Creek Fatty Acids</i>	PROJECT NO. <i>169251</i>	PROJECT LOCATION (STATE) <i>FL</i>	MATRIX TYPE	REQUIRED ANALYSIS								PAGE <i>1</i>	OF <i>1</i>	
SAMPLER'S SIGNATURE <i>[Signature]</i>	P.O. NUMBER <i>169251</i>	CONTRACT NO.	COMPOSITE (C) OR GRAB (G) INDICATE AQUEOUS (WATER) SOLID OR SEMISOLID AIR NONAQUEOUS LIQUID (OIL, SOLVENT,...) <i>None Fatty Acids</i>											
CLIENT (SITE) NAME <i>Horse Creek</i>	CLIENT PHONE <i>863-428-2500</i>	CLIENT FAX												
CLIENT NAME <i>Mosaic</i>	CLIENT E-MAIL													
CLIENT ADDRESS <i>P.O. Box 2000, Mulberry, FL 33860</i>														
COMPANY CONTRACTING THIS WORK (if applicable)													STANDARD REPORT DELIVERY <input type="checkbox"/>	
													DATE DUE _____	
													EXPEDITED REPORT DELIVERY (SURCHARGE) <input type="checkbox"/>	
													DATE DUE _____	
													NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	

SAMPLE		SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,...)	NUMBER OF CONTAINERS SUBMITTED								REMARKS
DATE	TIME															
6-2-05	1055	Horse Creek @ SR 64	G	✓			2									
6-2-05	1020	Horse Creek @ Goose Pond FILTERED	G	✓			2									
6-2-05	1150	Horse Creek @ Goose Pond	G	✓			2									
6-2-05	1230	Brushy Creek @ SR 64	G	✓			2									
6-2-05	—	Duplicate	G	✓			2									

RELINQUISHED BY: (SIGNATURE) <i>[Signature]</i>	DATE <i>6-3-05</i>	TIME <i>0700</i>	RELINQUISHED BY: (SIGNATURE) <i>[Signature]</i>	DATE <i>6-3-05</i>	TIME <i>0700</i>	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY: (SIGNATURE) <i>[Signature]</i>	DATE	TIME	RECEIVED BY: (SIGNATURE) <i>[Signature]</i>	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE) <i>[Signature]</i>	DATE <i>6-3-05</i>	TIME <i>1030</i>	CUSTODY INTACT YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	CUSTODY SEAL NO. <i>UK</i>	STL TAMPA LOG NO. <i>660-2321</i>	LABORATORY REMARKS
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