

Effluent Quality Assessment

Mosaic Fertilizer, L.L.C. – Fort Green Mine Complex

(formerly known as Cargill Fertilizer – Fort Green Mine)

Hardee and Polk Counties

NPDES #FL0027600

Sampled September 30, 2013

December 2013

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration
2013 FDEP Bureau of Labs Quality Manual
NELAC Certification No. E31780

CONTENTS

Facility Overview

Methods

Results

Conclusion

Literature Cited

Tables

Table 1 Effluent limits, Class III Freshwater Criteria, chemical data, and qualifiers

Table 2 Measured and predicted freshwater algal growth potential (AGP)

Appendices

Appendix A Facility Summary

Appendix B Explanation of measurements

Appendix C Chemical Analyses of Effluent

EPA End Sheet

Mosaic Fertilizer, L.L.C. – Fort Green Mine Complex, mailing address: 10741 State Rd 37 South, Bradley, Hardee County, Florida, 33835 NPDES #FL0027600. Physical location: Hardee and Polk counties.

Facility Overview

Mosaic Fertilizer, L.L.C. – Fort Green Mine Complex, formerly known as Cargill Fertilizer – Fort Green Mine, is a phosphate mine consisting primarily of reclamation activities to treat industrial wastewater. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent grab samples for biological and chemical analyses for this facility were collected on September 30, 2013. All samples were collected from the EFF-002 and EFF-005 NPDES sampling points for Outfalls D-002 and D-005, respectively, by Jacki Champion and Scott Rose (FDEP DWRM/PM Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

The 96-hour acute definitive toxicity tests and algal growth potential tests were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09 (see Appendix B).

Results

Chemistry Results (See Table 1 and Appendix C)

- The total ammonia concentrations in the grab samples collected and preserved for chemical analysis were 0.005 I mg N/L for Outfall D-002 and 0.041 mg N/L Outfall D-005. Based on the pH, salinity, and temperature of the effluents as collected, the calculated unionized ammonia concentrations were < 0.02 mg/L for both samples.
- **Outfall D-002**
- Arsenic, selenium, total phosphorus, total nitrogen, chlorophyll *a,* turbidity, fluoride, sulfate, total alpha, and radium 226 + 228 were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and/or permitted limits. Bis(2-ethylhexyl)phthalate, norflurazon, chromium, iron, nickel, nitrate+nitrite and total suspended solids (TSS) were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).
- **Outfall D-005**
- The dissolved oxygen (DO) concentration exceeded both the Class III Freshwater Quality Criteria for DO (62-302.533, F.A.C.) and the permitted limit.
- Arsenic, iron, total phosphorus, nitrate+nitrite, total nitrogen, chlorophyll *a,* turbidity, fluoride, sulfate, total alpha, and radium 226 + 228 were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and/or permitted limits. Chromium-III, nickel, selenium and total suspended solids (TSS) were detected between the laboratory MDL and PQL.
- Di-n-butyl phthalate, aluminum, and total organic carbon were detected in the field blanks at levels which fell between the MDL and PQL for the laboratory.

Algal Growth Potential (See Table 2 and Appendix C)

- The effluents' Algal Growth Potentials (AGP) were 11.1 A and 9.2 (EFF-002 and EFF-005, respectively) mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited (Miller et al. 1978).

Toxicity Test Results (See Appendices C)

- Tests were performed October 1 - 5, 2013.

Outfall D-002 (sample # 1538592)

Ceriodaphnia dubia 96-hour acute definitive bioassay – LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

Pimephales promelas 96-hour acute definitive bioassay – LC_{50} > 100%, 5%* mortality in 100% sample at 96 hours

Outfall D-005 (sample # 1538591)

Ceriodaphnia dubia 96-hour acute definitive bioassay – LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

Pimephales promelas 96-hour acute definitive bioassay – LC_{50} > 100%, 10%* mortality in 100% sample at 96 hours

*NOTE: In a 96-hour acute definitive test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

- The bioassay samples were not acutely toxic to the test organisms.

Conclusion

The effluent samples collected from the EFF-002 and EFF-005 NPDES sampling points for this facility on September 30, 2013, were not acutely toxic to either test species during the 96-hour acute definitive bioassays. The effluent AGP results were greater than the "problem" threshold for fresh receiving waters suggesting that nutrient enrichment may be an issue. The dissolved oxygen concentration at Outfall D-005 exceeded both the Class III Freshwater Criterion and the permitted limit. Additional effluent water quality samples collected on September 30, 2013, did not exceed any applicable water quality standards or violate any permit conditions.

For additional information concerning this sampling event, including bioassay bench sheets and SRT data, please contact Bruce.Alexander@dep.state.fl.us and/or Joseph.Faircloth@dep.state.fl.us.

Literature Cited

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Table 1. Effluent limits, Class III Freshwater Criteria, chemical data, and qualifiers.

Mosaic Fertilizer, L.L.C. - Fort Green Mine Complex	Class III Criteria	Effluent Limits	Effluent-02	Effluent-05
Organic Constituents (µg/L)				
Bis(2-ethylhexyl)phthalate			3.1 I	
Norflurazon			0.07 I	
Metals (µg/L unless otherwise noted)				
Aluminum			207	51
Arsenic	≤ 50		4.95	1.77
Cadmium	≤ 0.414 b		0.050 U	0.050 U
Calcium (mg/L)			38.3	41.5
Chromium, total	≤ 138 b ψ		0.80 I	0.33 I
Copper	≤ 15.2 b		0.50 U	0.50 U
Iron	≤ 1,000		56 I	140
Lead	≤ 6.61 b		0.20 U	0.20 U
Magnesium (mg/L)			19.9	25.5
Nickel	≤ 84.8 b		0.62 I	0.72 I
Selenium	≤ 5.0		1.06	0.50 I
Silver	≤ 0.07		0.025 U	0.025 U
Sodium			68.2	25.7
Zinc	≤ 195 b		5.0 U	5.0 U
Nutrients (mg/L)				
Ortho-phosphate			0.17	0.74
Total Phosphorus		≤ 5.0	0.46	0.89
Total Ammonia			0.005 I	0.041
Un-ionized Ammonia	≤ 0.02 s		< 0.02 c	< 0.02 c
Nitrate and Nitrite		Report	0.005 I	0.080
Total Kjeldahl Nitrogen			1.3	1.1
Organic Nitrogen			1.2950 c	1.059 c
Total Nitrogen		≤ 3.0	1.3050 c	1.18 c
Total Organic Carbon			17	16
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 3.09**	≥ 5.0	10.96	2.3
pH (SU)	6.0 - 8.5	6.0 - 8.5	8.1	8.2
Specific Conductance (µmhos/cm)	≤ 1,275	≤ 1,275	588	468
Temperature (°C)		Report	27.60	25.27
Salinity			≤ 0.27 c	≤ 0.22 c
Total Residual Chlorine (mg/L)	≤ 0.01		≤ 0.03 UQ£	≤ 0.03 UQ£
Chlorophyll *a* (µg/L) - Corrected		Report	55 A	27
Phaeophytin (µg/L)			11 A	6.3
Total Suspended Solids (mg/L)		≤ 60.0	8 I	6 I
Turbidity (NTU)	< 29 t	Report	6.1	2.5
Color (true, PCU)			42	48 A
Alkalinity (mg CaCO3/L)			149	131
CBOD, 5 day (mg/L), N - inhibited			4.6	1.3 I
Oils and Greases (mg/L)	≤ 5.0		0.71 U	0.71 U
Chloride (mg/L)			9.9	23
Fluoride (mg/L)	≤ 10.0	≤ 10.0	1.6	1.3
Sulfate (mg/L)		Report	120	62
Alpha, Total (pCi/L)	≤ 15		6.0	2.3
Alpha-Counting Error (pCi/L)			1.9	1.4
Radium 226 (pCi/L)			0.7	0.5
Radium 226-Counting Error (pCi/L)			0.1	0.1
Radium 228 (pCi/L)			0.9 U	0.8 U
Radium 228-Counting Error (pCi/L)			0.5	0.5
Radium 226 + 228 (pCi/L)	≤ 5		0.7 c	0.5 c
Flow (MGD)		Report	7.22 a*	13.76 a*
Hardness (mg $CaCO_3$)			177.58 c	208.6 c

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average

b - Value is calculated based on hardness

c - Value is calculated

s - single sample

t - Shall not exceed 29 NTUs above background

A - Value reported is the mean of two or more determinations

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Q - Sample held beyond normal holding time

U - Material analyzed for but not detected; value reported is the method detection limit

£ - measurement taken in the FDEP laboratory

* - Measured from 9/12 - 8/13

** - Criterion based on ≤ 38% saturation.

ψ - Class III Freshwater Water Quality Criterion (62-302.530(19)(a), F.A.C.) for chromium-III

Table 2. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus.

Mosaic Fertilizer, L.L.C. - Fort Green Mine Complex				
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent-02	11.1 A	0.4 ± 0.1	49.6 ± 9.9	0.1	2.8
Effluent-05	9.2	4.6 ± 0.9	44.8 ± 9.0	0.2	1.3

A - Value reported is the mean of two or more determinations

Appendix A
Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Jacki Champion	Contact Number: 813-470-5918
Facility Name (as it appears on permit): Mosaic Fertilizer, L.L.C. –Fort Green Mine Complex	Former Names: Cargill Fertilizer-Fort Green Mine
NPDES Permit Number: FL0027600	Permit Expiration Date: June 17, 2014
Physical Address: 10741 State Road 37 South, Bradley, Florida	
District: DWRM/PM	County: Polk and Hardee
Function of Facility: This mine primarily consists of reclamation activities. The beneficiation plant has been dismantled.	
Facility Type: Phosphate Mine	Permitted Capacity (MGD): NA
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): D-001 0 MGD (9/12-8/13); D-002 7.22 MGD (9/12-8/13); D-003 0 MGD (9/12-8/13); D-005 13.76 MGD (9/12-8/13) ; D-006 0.77 MGD (9/12-8/13)	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): NA	
Description of type of Discharge: ☐ Continuous ☒ Intermittent ☐ Seasonal ☒ Rainfall Dependent ☐ Other, please specify	
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): D-001/EFF-001 discharges into Payne Creek, a tributary of the Peace River. D-002/EFF-002 discharges into Payne Creek, a tributary of the Peace River. D-003/EFF-003 discharges into Horse Creek, a tributary of the Peace River. D-005/EFF-005 discharges into Little Payne Creek, a tributary of Payne Creek. D-006/EFF-006 discharges into Hickey Branch, a tributary of Payne Cree.	
Description of Permitted Outfall(s):	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): Treatment of mine recirculation water includes settling in Clay Settling Areas and nutrient uptake. Other potential effluent treatments include aeration, CO_2 addition, sulfuric acid treatment, application of algal growth blocking dye, flocculant addition, dilution, and aluminum sulfate (Alum) treatment if needed.	

Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Daily Minimum	Monthly Average	Daily Maximum	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	N/A	Report	Report	Continuous	Recorder	*
Total Non-filterable Residue (TSS) (mg/l)	N/A	30	60	1/Week	Grab	*
Total Non-volatile, Non-filterable Residue (FS) (mg/l) [See I.A.2.]	N/A	12	25	1/Week	Grab	*
Phosphorus, Total (as P) (mg/l)	N/A	3 (See I.A.3.)	5	1/Week	Grab	*
Phosphorus, Total (as P) (lbs/day)	N/A	Report	Report (See I.A.5.)	1/Week	Calculated	*
pH (std. units)	6.0	Report	8.5	1/Week	Grab	*
Turbidity (NTU)	N/A	N/A	Report (See I.A.15)	1/Month	Grab	*
Nitrogen, Total (as N) (mg/l)	N/A	N/A	3.0 (See I.A.4.)	1/Month	Grab	*
Nitrogen, Total (as N) (lbs/day)	N/A	N/A	Report (See I.A.5.)	1/Month	Calculated	*
Specific Conductance (µmhos/centimeter)	N/A	N/A	1275 (See I.A.12.)	1/Month	Grab	*
Oxygen, Dissolved (DO) (mg/l)	5.0 (See I.A.11.)	N/A	N/A	1/Month	Grab	**
Temperature Water (deg. C)	N/A	N/A	Report	1/Month	Grab	*
$NO_2 + NO_3$ (as N) (mg/l)	N/A	N/A	Report	1/Month	Grab	*
Fluoride, Total (as F) (mg/l)	N/A	N/A	10.0	1/Quarter	Grab	*
Sulfate, Total (mg/l)	N/A	N/A	Report	1/Quarter	Grab	*
Chlorophyll - a (ug/l)	N/A	N/A	Report	1/Quarter	Grab	*
Whole Effluent Toxicity – Chronic & Acute	See Permit Conditions I.A.13. & I.A.14.					

*EFF-001, EFF-002, EFF-003, EFF-005 and EFF-006
**EFF-001, EFF-002, EFF-003 and EFF-006

Receiving Waters: **Payne Creek, Little Payne Creek, Horse Creek, Hickey Branch**	**Classification (indicate whether fresh or marine):** **Class III Fresh**
Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.): **D-002 and D-005 Chronic Definitive Fresh water tests annually.** **D-001, D-003 and D-006 Acute Definitive Fresh water tests annually.**	
Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): **None**	
Facility Mixing Zone Details (if applicable): NA	

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year: none

Date	Parameter and Units	Limit	Result

Describe previous FYI and WQBEL study: Outfall D-005 was sampled on September 17, 2007. The dissolved oxygen was low and the un-ionized ammonia as calculated was 0.04 mg/L. This outfall discharges stormwater runoff from reclamation areas on the site.
Describe previous or current Enforcement Actions (including WLs): No current enforcement actions related to surface waters.
Describe any violations or problems noted in previous inspection: None noted related to surface waters.
Discuss whether DMR trends within previous five years are improving or declining: Static
Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

PART II: Sampling Event Information	
Date(s) sample collected: 9/30/13	Sampler(s): Jacki Champion, Scott Rose
Temperature (Deg C): D-005 -25.27°C D-002-27.60°C	pH (SU): Not collected due to meter errors.
Dissolved Oxygen (mg/L): D-005 -2.33 D-002-10.96	Conductivity (umhos/cm): D-005 -468 D-002-588
Total Residual Chlorine (mg/L): NA	Total Residual Chlorine - after Disinfection (mg/L): NA
Method of Chlorination: NA	Method of De-chlorination: NA
Flow During Sample Collection for each outfall (MGD): D-005-24.5 D-002-29.6	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day): D-001 0 MGD (9/12-8/13); D-002 7.22 MGD (9/12-8/13); D-003 0 MGD (9/12-8/13); D-005 13.76 MGD (9/12-8/13) ; D-006 0.77 MGD (9/12-8/13)	
Describe Discharge during Sampling Event: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here: pH data was not collected due to meter calibration issues.	

Appendix B
Explanation of measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the FDEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.floridadep.org/labs/sop/index.htm and/or http://www.floridadep.org/labs/qa/index.htm.

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following FDEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits. Exceedances of Water Quality Criteria may constitute violations of specific provisions of Chapter 62-302 (F.A.C.) and/ or facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or a violation of facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or a violation of facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or a violation of facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or a violation of facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20-60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a “problem” threshold for fresh receiving waters, implying nutrient enrichment. High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C.

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61), F.A.C.

(6) Chlorophyll *a* Content

Chlorophyll *a* content is an estimate of algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be constitute exceedances of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C.

(7) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix C.
Chemical Analyses of Effluent

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 11:55	D-002	AGP/LN	Algal Growth Potential	11.1	A	mg DryWt/L	0.3	0.9
9/30/2013 11:55	D-002	Chlorophyll/Grain Size/BOD	Phaeophytin-a	11	A	ug/L	0.43	1.3
9/30/2013 11:55	D-002	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	55	A	ug/L	0.59	1.8
9/30/2013 11:55	D-002	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	4.6		mg/L	0.2	2
9/30/2013 11:55	D-002	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	100	L	LC50		
9/30/2013 11:55	D-002	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100	L	LC50		
9/30/2013 11:55	D-002	Metals	Silver	0.025	U	ug/L	0.025	0.1
9/30/2013 11:55	D-002	Metals	Nickel	0.62	I	ug/L	0.25	1
9/30/2013 11:55	D-002	Metals	Magnesium	19.9		mg/L	0.04	0.16
9/30/2013 11:55	D-002	Metals	Sodium	68.2		mg/L	0.5	2
9/30/2013 11:55	D-002	Metals	Iron	56	I	ug/L	30	120
9/30/2013 11:55	D-002	Metals	Selenium	1.06		ug/L	0.2	0.8
9/30/2013 11:55	D-002	Metals	Aluminum	207		ug/L	5	20
9/30/2013 11:55	D-002	Metals	Calcium	38.3		mg/L	0.075	0.3
9/30/2013 11:55	D-002	Metals	Arsenic	4.95		ug/L	0.25	1
9/30/2013 11:55	D-002	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
9/30/2013 11:55	D-002	Metals	Chromium	0.80	I	ug/L	0.3	1.2
9/30/2013 11:55	D-002	Metals	Copper	0.50	U	ug/L	0.5	1
9/30/2013 11:55	D-002	Metals	Lead	0.20	U	ug/L	0.2	0.8
9/30/2013 11:55	D-002	Metals	Zinc	5.0	U	ug/L	5	20
9/30/2013 11:55	D-002	Nutrients	Chloride	9.9		mg Cl/L	0.4	1
9/30/2013 11:55	D-002	Nutrients	Sulfate	120		mg SO4/L	0.4	1
9/30/2013 11:55	D-002	Nutrients	Color (true)	42		PCU	2.5	6
9/30/2013 11:55	D-002	Nutrients	TSS	8	I	mg/L	2	10
9/30/2013 11:55	D-002	Nutrients	Kjeldahl Nitrogen	1.3		mg N/L	0.08	0.2
9/30/2013 11:55	D-002	Nutrients	Alkalinity	149		mg CaCO3/L	0.65	2.5
9/30/2013 11:55	D-002	Nutrients	Turbidity	6.1		NTU	0.1	0.1
9/30/2013 11:55	D-002	Nutrients	Fluoride	1.6		mg F/L	0.035	0.1
9/30/2013 11:55	D-002	Nutrients	Total-P	0.46		mg P/L	0.005	0.05
9/30/2013 11:55	D-002	Nutrients	O-Phosphate-P	0.17		mg P/L	0.004	0.01
9/30/2013 11:55	D-002	Nutrients	Ammonia-N	0.005	I	mg N/L	0.002	0.005
9/30/2013 11:55	D-002	Nutrients	NO2NO3-N	0.005	I	mg N/L	0.004	0.01
9/30/2013 11:55	D-002	Nutrients	Organic Carbon	17		mg C/L	0.5	1
9/30/2013 11:55	D-002	Overflow	Radium 226	0.7		pCi/L	0.1	
9/30/2013 11:55	D-002	Overflow	Alpha, Total	6.0		pCi/L	1.7	
9/30/2013 11:55	D-002	Overflow	Radium 226-Counting Error	0.1		pCi/L		
9/30/2013 11:55	D-002	Overflow	Radium 228	0.9	U	pCi/L	0.9	
9/30/2013 11:55	D-002	Overflow	Radium 228-Counting Error	0.5		pCi/L		
9/30/2013 11:55	D-002	Overflow	Oil and Grease	0.71	U	mg/L	0.71	2.5

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 11:55	D-002	Overflow	Alpha-Counting Error	1.9		pCi/L		
9/30/2013 11:55	D-002	Pesticides	Ethion	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Fonofos	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Hexazinone	0.028	UJ	ug/L	0.028	0.11
9/30/2013 11:55	D-002	Pesticides	Norflurazon	0.070	I	ug/L	0.028	0.11
9/30/2013 11:55	D-002	Pesticides	Parathion Methyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Prometryn	0.019	U	ug/L	0.019	0.076
9/30/2013 11:55	D-002	Pesticides	Butylate	0.019	U	ug/L	0.019	0.076
9/30/2013 11:55	D-002	Pesticides	Naled	0.038	U	ug/L	0.038	0.15
9/30/2013 11:55	D-002	Pesticides	Parathion Ethyl	0.019	U	ug/L	0.019	0.076
9/30/2013 11:55	D-002	Pesticides	Azinphos Methyl	0.019	UJ	ug/L	0.019	0.076
9/30/2013 11:55	D-002	Pesticides	Ametryn	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Ethoprop	0.0047	U	ug/L	0.0047	0.019
9/30/2013 11:55	D-002	Pesticides	Malathion	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Metalaxyl	0.038	U	ug/L	0.038	0.15
9/30/2013 11:55	D-002	Pesticides	Metribuzin	0.019	U	ug/L	0.019	0.076
9/30/2013 11:55	D-002	Pesticides	Mevinphos	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Bromacil	0.038	U	ug/L	0.038	0.15
9/30/2013 11:55	D-002	Pesticides	Metolachlor	0.057	U	ug/L	0.057	0.23
9/30/2013 11:55	D-002	Pesticides	Alachlor	0.057	UJ	ug/L	0.057	0.23
9/30/2013 11:55	D-002	Pesticides	Atrazine	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Fenamiphos	0.028	U	ug/L	0.028	0.11
9/30/2013 11:55	D-002	Pesticides	Simazine	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Chlorpyrifos Ethyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Chlorpyrifos Methyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Diazinon	0.0095	U	ug/L	0.0095	0.038
9/30/2013 11:55	D-002	Pesticides	Phorate	0.0047	UJ	ug/L	0.0047	0.019
9/30/2013 11:55	D-002	Priority Organic Pollutants	2-Chloronaphthalene	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.5
9/30/2013 11:55	D-002	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Isophorone	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.5
9/30/2013 11:55	D-002	Priority Organic Pollutants	Pentachlorophenol	2.8	U	ug/L	2.8	11
9/30/2013 11:55	D-002	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
9/30/2013 11:55	D-002	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	2,4-Dimethylphenol	9.4	U	ug/L	9.4	38

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 11:55	D-002	Priority Organic Pollutants	2-Chlorophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8	U	ug/L	2.8	11
9/30/2013 11:55	D-002	Priority Organic Pollutants	Di-n-butyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Hexachlorobenzene	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	2,4-Dinitrophenol	14	UJ	ug/L	14	57
9/30/2013 11:55	D-002	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.5
9/30/2013 11:55	D-002	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Diethyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Hexachlorobutadiene	2.8	U	ug/L	2.8	11
9/30/2013 11:55	D-002	Priority Organic Pollutants	2,4-Dichlorophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Hexachloroethane	2.8	U	ug/L	2.8	11
9/30/2013 11:55	D-002	Priority Organic Pollutants	Phenol	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8	U	ug/L	2.8	11
9/30/2013 11:55	D-002	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	3.1	I	ug/L	1.9	7.5
9/30/2013 11:55	D-002	Priority Organic Pollutants	Butyl benzyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Di-n-octyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8	U	ug/L	2.8	11
9/30/2013 11:55	D-002	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8	U	ug/L	2.8	11
9/30/2013 11:55	D-002	Priority Organic Pollutants	2-Nitrophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
9/30/2013 11:55	D-002	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Benzidine	94	U	ug/L	94	380
9/30/2013 11:55	D-002	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Dimethyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.75
9/30/2013 11:55	D-002	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.5
9/30/2013 11:55	D-002	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 11:55	D-002	Field Parameter	Specific Conductance	588		umhos/cm		
9/30/2013 11:55	D-002	Field Parameter	Temperature	27.60		C		
9/30/2013 11:55	D-002	Field Parameter	Dissolved Oxygen	10.96		mg/L		
9/30/2013 10:15	D-005	AGP/LN	Algal Growth Potential	9.20		mg DryWt/L	0.3	0.9
9/30/2013 10:15	D-005	Chlorophyll/Grain Size/BOD	Phaeophytin-a	6.3		ug/L	0.59	1.8
9/30/2013 10:15	D-005	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	27		ug/L	0.81	2.5

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 10:15	D-005	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.3	I	mg/L	0.2	2
9/30/2013 10:15	D-005	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100	L	LC50		
9/30/2013 10:15	D-005	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	100	L	LC50		
9/30/2013 10:15	D-005	Metals	Magnesium	25.5		mg/L	0.04	0.16
9/30/2013 10:15	D-005	Metals	Sodium	25.7		mg/L	0.5	2
9/30/2013 10:15	D-005	Metals	Aluminum	51		ug/L	5	20
9/30/2013 10:15	D-005	Metals	Arsenic	1.77		ug/L	0.25	1
9/30/2013 10:15	D-005	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
9/30/2013 10:15	D-005	Metals	Nickel	0.72	I	ug/L	0.25	1
9/30/2013 10:15	D-005	Metals	Selenium	0.50	I	ug/L	0.2	0.8
9/30/2013 10:15	D-005	Metals	Iron	140		ug/L	30	120
9/30/2013 10:15	D-005	Metals	Calcium	41.5		mg/L	0.075	0.3
9/30/2013 10:15	D-005	Metals	Chromium	0.33	I	ug/L	0.3	1.2
9/30/2013 10:15	D-005	Metals	Copper	0.50	U	ug/L	0.5	1
9/30/2013 10:15	D-005	Metals	Silver	0.025	U	ug/L	0.025	0.1
9/30/2013 10:15	D-005	Metals	Zinc	5.0	U	ug/L	5	20
9/30/2013 10:15	D-005	Metals	Lead	0.20	U	ug/L	0.2	0.8
9/30/2013 10:15	D-005	Nutrients	Color (true)	48	A	PCU	2.5	6
9/30/2013 10:15	D-005	Nutrients	Fluoride	1.3		mg F/L	0.035	0.1
9/30/2013 10:15	D-005	Nutrients	Ammonia-N	0.041		mg N/L	0.002	0.005
9/30/2013 10:15	D-005	Nutrients	Organic Carbon	16		mg C/L	0.5	1
9/30/2013 10:15	D-005	Nutrients	Chloride	23		mg Cl/L	0.4	1
9/30/2013 10:15	D-005	Nutrients	Total-P	0.89		mg P/L	0.005	0.05
9/30/2013 10:15	D-005	Nutrients	Turbidity	2.5		NTU	0.1	0.1
9/30/2013 10:15	D-005	Nutrients	O-Phosphate-P	0.74		mg P/L	0.04	0.1
9/30/2013 10:15	D-005	Nutrients	Alkalinity	131		mg CaCO3/L	0.65	2.5
9/30/2013 10:15	D-005	Nutrients	NO2NO3-N	0.080		mg N/L	0.004	0.01
9/30/2013 10:15	D-005	Nutrients	Kjeldahl Nitrogen	1.1		mg N/L	0.08	0.2
9/30/2013 10:15	D-005	Nutrients	Sulfate	62		mg SO4/L	0.4	1
9/30/2013 10:15	D-005	Nutrients	TSS	6	I	mg/L	2	10
9/30/2013 10:15	D-005	Overflow	Oil and Grease	0.71	U	mg/L	0.71	2.5
9/30/2013 10:15	D-005	Overflow	Radium 226	0.5		pCi/L	0.1	
9/30/2013 10:15	D-005	Overflow	Alpha, Total	2.3		pCi/L	1.7	
9/30/2013 10:15	D-005	Overflow	Radium 228-Counting Error	0.5		pCi/L		
9/30/2013 10:15	D-005	Overflow	Radium 226-Counting Error	0.1		pCi/L		
9/30/2013 10:15	D-005	Overflow	Radium 228	0.8	U	pCi/L	0.8	
9/30/2013 10:15	D-005	Overflow	Alpha-Counting Error	1.4		pCi/L		
9/30/2013 10:15	D-005	Pesticides	Fenamiphos	0.028	U	ug/L	0.028	0.11
9/30/2013 10:15	D-005	Pesticides	Metalaxyl	0.038	U	ug/L	0.038	0.15
9/30/2013 10:15	D-005	Pesticides	Phorate	0.0047	UJ	ug/L	0.0047	0.019
9/30/2013 10:15	D-005	Pesticides	Simazine	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Butylate	0.019	U	ug/L	0.019	0.076
9/30/2013 10:15	D-005	Pesticides	Diazinon	0.0095	U	ug/L	0.0095	0.038

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 10:15	D-005	Pesticides	Mevinphos	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Ethion	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Naled	0.038	U	ug/L	0.038	0.15
9/30/2013 10:15	D-005	Pesticides	Chlorpyrifos Methyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Hexazinone	0.028	UJ	ug/L	0.028	0.11
9/30/2013 10:15	D-005	Pesticides	Metribuzin	0.019	U	ug/L	0.019	0.076
9/30/2013 10:15	D-005	Pesticides	Norflurazon	0.028	U	ug/L	0.028	0.11
9/30/2013 10:15	D-005	Pesticides	Azinphos Methyl	0.019	UJ	ug/L	0.019	0.076
9/30/2013 10:15	D-005	Pesticides	Alachlor	0.057	UJ	ug/L	0.057	0.23
9/30/2013 10:15	D-005	Pesticides	Prometryn	0.019	U	ug/L	0.019	0.076
9/30/2013 10:15	D-005	Pesticides	Chlorpyrifos Ethyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Fonofos	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Malathion	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Metolachlor	0.057	U	ug/L	0.057	0.23
9/30/2013 10:15	D-005	Pesticides	Parathion Methyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Atrazine	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Pesticides	Bromacil	0.038	U	ug/L	0.038	0.15
9/30/2013 10:15	D-005	Pesticides	Ethoprop	0.0047	U	ug/L	0.0047	0.019
9/30/2013 10:15	D-005	Pesticides	Parathion Ethyl	0.019	U	ug/L	0.019	0.076
9/30/2013 10:15	D-005	Pesticides	Ametryn	0.0095	U	ug/L	0.0095	0.038
9/30/2013 10:15	D-005	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
9/30/2013 10:15	D-005	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8	U	ug/L	2.8	11
9/30/2013 10:15	D-005	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8	U	ug/L	2.8	11
9/30/2013 10:15	D-005	Priority Organic Pollutants	Butyl benzyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Dimethyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Phenol	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Diethyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Hexachlorobutadiene	2.8	U	ug/L	2.8	11
9/30/2013 10:15	D-005	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.5
9/30/2013 10:15	D-005	Priority Organic Pollutants	2,4-Dimethylphenol	9.4	U	ug/L	9.4	38
9/30/2013 10:15	D-005	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	2-Nitrophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
9/30/2013 10:15	D-005	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.5
9/30/2013 10:15	D-005	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8	U	ug/L	2.8	11
9/30/2013 10:15	D-005	Priority Organic Pollutants	Pentachlorophenol	2.8	U	ug/L	2.8	11

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 10:15	D-005	Priority Organic Pollutants	2,4-Dinitrophenol	14	UJ	ug/L	14	57
9/30/2013 10:15	D-005	Priority Organic Pollutants	2-Chloronaphthalene	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.5
9/30/2013 10:15	D-005	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Di-n-butyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Hexachloroethane	2.8	U	ug/L	2.8	11
9/30/2013 10:15	D-005	Priority Organic Pollutants	Isophorone	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	2,4-Dichlorophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9	U	ug/L	1.9	7.5
9/30/2013 10:15	D-005	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.5
9/30/2013 10:15	D-005	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8	U	ug/L	2.8	11
9/30/2013 10:15	D-005	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Hexachlorobenzene	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	2-Chlorophenol	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Benzidine	94	UJ	ug/L	94	380
9/30/2013 10:15	D-005	Priority Organic Pollutants	Di-n-octyl phthalate	0.94	U	ug/L	0.94	3.8
9/30/2013 10:15	D-005	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.75
9/30/2013 10:15	D-005	Field Parameter	Specific Conductance	468		umhos/cm		
9/30/2013 10:15	D-005	Field Parameter	Temperature	25.27		C		
9/30/2013 10:15	D-005	Field Parameter	Dissolved Oxygen	2.33		mg/L		
9/30/2013 12:15	BLANK	Metals	Iron	30	U	ug/L	30	120
9/30/2013 12:15	BLANK	Metals	Arsenic	0.25	U	ug/L	0.25	1
9/30/2013 12:15	BLANK	Metals	Silver	0.025	U	ug/L	0.025	0.1
9/30/2013 12:15	BLANK	Metals	Selenium	0.20	U	ug/L	0.2	0.8
9/30/2013 12:15	BLANK	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
9/30/2013 12:15	BLANK	Metals	Aluminum	6.7	I	ug/L	5	20
9/30/2013 12:15	BLANK	Metals	Copper	0.50	U	ug/L	0.5	1
9/30/2013 12:15	BLANK	Metals	Calcium	0.075	U	mg/L	0.075	0.3
9/30/2013 12:15	BLANK	Metals	Nickel	0.25	U	ug/L	0.25	1
9/30/2013 12:15	BLANK	Metals	Zinc	5.0	U	ug/L	5	20

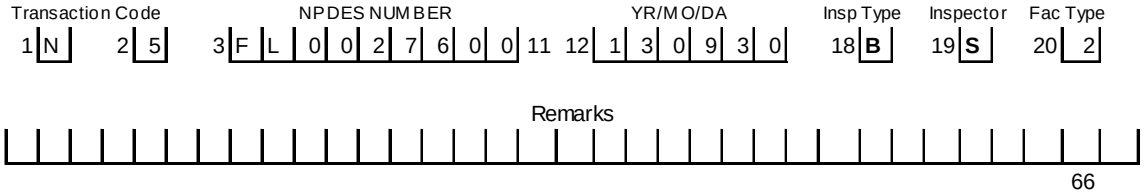
Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 12:15	BLANK	Metals	Magnesium	0.040	U	mg/L	0.04	0.16
9/30/2013 12:15	BLANK	Metals	Sodium	0.50	U	mg/L	0.5	2
9/30/2013 12:15	BLANK	Metals	Lead	0.20	U	ug/L	0.2	0.8
9/30/2013 12:15	BLANK	Metals	Chromium	0.30	U	ug/L	0.3	1.2
9/30/2013 12:15	BLANK	Nutrients	Kjeldahl Nitrogen	0.080	U	mg N/L	0.08	0.2
9/30/2013 12:15	BLANK	Nutrients	Total-P	0.002	U	mg P/L	0.002	0.005
9/30/2013 12:15	BLANK	Nutrients	Chloride	0.20	U	mg Cl/L	0.2	0.5
9/30/2013 12:15	BLANK	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
9/30/2013 12:15	BLANK	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
9/30/2013 12:15	BLANK	Nutrients	Color (true)	2.5	U	PCU	2.5	6
9/30/2013 12:15	BLANK	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
9/30/2013 12:15	BLANK	Nutrients	Turbidity	0.10	U	NTU	0.1	0.1
9/30/2013 12:15	BLANK	Nutrients	Organic Carbon	0.53	I	mg C/L	0.5	1
9/30/2013 12:15	BLANK	Nutrients	Ammonia-N	0.002	U	mg N/L	0.002	0.005
9/30/2013 12:15	BLANK	Nutrients	Sulfate	0.20	U	mg SO4/L	0.2	0.5
9/30/2013 12:15	BLANK	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
9/30/2013 12:15	BLANK	Overflow	Oil and Grease	0.71	U	mg/L	0.71	2.5
9/30/2013 12:15	BLANK	Overflow	Radium 228-Counting Error	0.5		pCi/L		
9/30/2013 12:15	BLANK	Overflow	Radium 226	0.2	U	pCi/L	0.2	
9/30/2013 12:15	BLANK	Overflow	Radium 228	0.8	U	pCi/L	0.8	
9/30/2013 12:15	BLANK	Overflow	Alpha, Total	0.7	U	pCi/L	0.7	
9/30/2013 12:15	BLANK	Overflow	Alpha-Counting Error	0.4		pCi/L		
9/30/2013 12:15	BLANK	Overflow	Radium 226-Counting Error	0.1		pCi/L		
9/30/2013 12:15	BLANK	Pesticides	Butylate	0.019	U	ug/L	0.019	0.076
9/30/2013 12:15	BLANK	Pesticides	Fonofos	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Metribuzin	0.019	U	ug/L	0.019	0.076
9/30/2013 12:15	BLANK	Pesticides	Norflurazon	0.028	U	ug/L	0.028	0.11
9/30/2013 12:15	BLANK	Pesticides	Simazine	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Alachlor	0.057	UJ	ug/L	0.057	0.23
9/30/2013 12:15	BLANK	Pesticides	Azinphos Methyl	0.019	UJ	ug/L	0.019	0.076
9/30/2013 12:15	BLANK	Pesticides	Chlorpyrifos Ethyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Hexazinone	0.028	UJ	ug/L	0.028	0.11
9/30/2013 12:15	BLANK	Pesticides	Atrazine	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Malathion	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Metolachlor	0.057	U	ug/L	0.057	0.23
9/30/2013 12:15	BLANK	Pesticides	Chlorpyrifos Methyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Diazinon	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Ethion	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Parathion Ethyl	0.019	U	ug/L	0.019	0.076
9/30/2013 12:15	BLANK	Pesticides	Phorate	0.0047	UJ	ug/L	0.0047	0.019
9/30/2013 12:15	BLANK	Pesticides	Bromacil	0.038	U	ug/L	0.038	0.15
9/30/2013 12:15	BLANK	Pesticides	Ethoprop	0.0047	U	ug/L	0.0047	0.019
9/30/2013 12:15	BLANK	Pesticides	Mevinphos	0.0095	U	ug/L	0.0095	0.038

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 12:15	BLANK	Pesticides	Fenamiphos	0.028	U	ug/L	0.028	0.11
9/30/2013 12:15	BLANK	Pesticides	Prometryn	0.019	U	ug/L	0.019	0.076
9/30/2013 12:15	BLANK	Pesticides	Ametryn	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Pesticides	Metalaxyl	0.038	U	ug/L	0.038	0.15
9/30/2013 12:15	BLANK	Pesticides	Naled	0.038	U	ug/L	0.038	0.15
9/30/2013 12:15	BLANK	Pesticides	Parathion Methyl	0.0095	U	ug/L	0.0095	0.038
9/30/2013 12:15	BLANK	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.8
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.8
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Di-n-octyl phthalate	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	160
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Phenol	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.8
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Diethyl phthalate	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	58
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Dimethyl phthalate	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Di-n-butyl phthalate	1.3	I	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2-Chlorophenol	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2,4-Dichlorophenol	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2,4-Dimethylphenol	9.7	U	ug/L	9.7	39
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2,4-Dinitrophenol	15	UJ	ug/L	15	58
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Benzidine	97	U	ug/L	97	390
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
9/30/2013 12:15	BLANK	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.8
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2-Chloronaphthalene	0.97	U	ug/L	0.97	3.9

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
9/30/2013 12:15	BLANK	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9	U	ug/L	1.9	7.8
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Butyl benzyl phthalate	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Isophorone	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
9/30/2013 12:15	BLANK	Priority Organic Pollutants	2-Nitrophenol	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.78
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Hexachlorobenzene	0.97	U	ug/L	0.97	3.9
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
9/30/2013 12:15	BLANK	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12

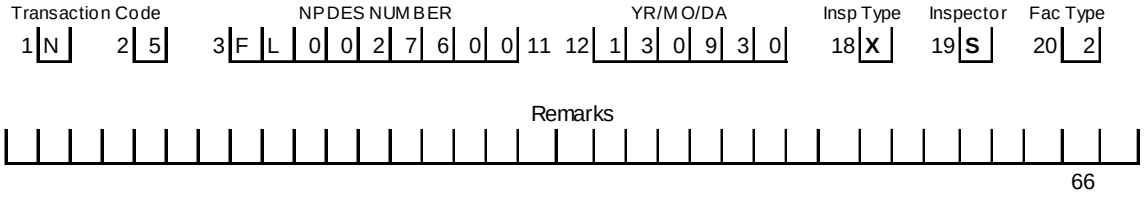
The Bioassay of Mosaic Fertilizer, L.L.C. - Fort Green Mine Complex effluent sampled on September 30, 2013. NPDES #FL0027600.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)



The Priority Pollutants Analysis of Mosaic Fertilizer, L.L.C. - Fort Green Mine Complex effluent sampled on September 30, 2013. NPDES #FL0027600.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)



Biological Analyses of Mosaic Fertilizer, L.L.C. - Fort Green Mine Complex effluent sampled on September 30, 2013. NPDES #FL0027600.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

