

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from EEA.

110 South Hill Street
 South Bend, IN 46617
 Tel: (574) 233-4777
 Fax: (574) 233-8207
 1 800 332 4345

Laboratory Report

Client: Superior Watershed Partnership & Land Trust
 Attn: Geraldine Grant
 2 Peter White Drive
 Presque Isle Park
 Marquette, MI 49855
 Copies to: None

Report: 335420
 Priority: Standard Written
 Status: Final
 PWS ID: Not Supplied

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3199185	HUMWTP-EFF CEM10010240	200.8	03/04/15 11:35	Client	03/05/15 10:15
3199186	HUMWTP-EFF CEM10010240	4500-NH3 D	03/04/15 11:35	Client	03/05/15 10:15
3199187	HUMWTP-EFF CEM10010240	4500-P E	03/04/15 11:35	Client	03/05/15 10:15
3199188	HUMWTP-EFF CEM10010240	300.0	03/04/15 11:35	Client	03/05/15 10:15
3199188	HUMWTP-EFF CEM10010240	4500-F- C	03/04/15 11:35	Client	03/05/15 10:15
3199188	HUMWTP-EFF CEM10010240	2540 C	03/04/15 11:35	Client	03/05/15 10:15
3199188	HUMWTP-EFF CEM10010240	2540 D	03/04/15 11:35	Client	03/05/15 10:15

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.



Authorized Signature _____ Title _____
 Client Name: Superior Watershed Partnership & Land Trust
 Report #: 335420

04/09/2015
 Date _____

Sampling Point: HUMWTP-EFF CEM10010240

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Solids, Dissolved	2540 C	500 ^	10	330	mg/L	---	03/10/15 16:18	3199188
---	Solids, Suspended	2540 D	---	10	< 10	mg/L	---	03/10/15 23:06	3199188
14808-79-8	Sulfate	300.0	250 ^	5.0	130	mg/L	---	03/11/15 17:49	3199188
16984-48-8	Fluoride	4500-F- C	4 *	0.1	0.2	mg/L	---	03/11/15 03:36	3199188
7664-41-7	Nitrogen, Ammonia	4500-NH3 D	---	0.1	< 0.1	mg/L	---	03/11/15 22:47	3199186
7723-14-0	Phosphorus	4500-P E	---	0.05	< 0.05	mg P/L	---	03/16/15 22:29	3199187

Metals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
7440-36-0	Antimony	200.8	6 *	1.0	3.7	ug/L	---	03/10/15 19:08	3199185
7440-38-2	Arsenic	200.8	10 *	1.0	< 1.0	ug/L	---	03/10/15 19:08	3199185
7440-39-3	Barium	200.8	2000 *	2.0	8.2	ug/L	---	03/10/15 19:08	3199185
7440-42-8	Boron	200.8	---	5.0	77	ug/L	---	03/10/15 19:08	3199185
7440-43-9	Cadmium	200.8	5 *	1.0	< 1.0	ug/L	---	03/10/15 19:08	3199185
7440-47-3	Chromium	200.8	100 *	0.9	< 0.9	ug/L	---	03/10/15 19:08	3199185
7440-48-4	Cobalt	200.8	---	2.0	2.4	ug/L	---	03/10/15 19:08	3199185
7440-50-8	Copper	200.8	1300 !	1.0	1.1	ug/L	---	03/11/15 18:21	3199185
7439-92-1	Lead	200.8	15 !	1.0	< 1.0	ug/L	---	03/10/15 19:08	3199185
7439-93-2	Lithium	200.8	---	2.0	3.3	ug/L	---	03/10/15 19:08	3199185
7439-96-5	Manganese	200.8	50 ^	2.0	220	ug/L	---	03/10/15 19:08	3199185
7439-98-7	Molybdenum	200.8	---	2.0	8.6	ug/L	---	03/10/15 19:08	3199185
7440-02-0	Nickel	200.8	---	1.0	17	ug/L	---	03/10/15 19:08	3199185
7782-49-2	Selenium	200.8	50 *	2.0	< 2.0	ug/L	---	03/10/15 19:08	3199185
7440-24-6	Strontium	200.8	---	2.0	200	ug/L	---	03/10/15 19:08	3199185
7440-66-6	Zinc	200.8	5000 ^	5.0	< 5.0	ug/L	---	03/10/15 19:08	3199185

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.



Eaton Analytical

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order # 261516
Batch # 335420

www.eatonanalytical.com

CHAIN OF CUSTODY RECORD

REPORT TO: **Shaded area for EEA use only**

Page 1 of 1

SAMPLER (Signature) <i>[Signature]</i>		STATE (sample origin) <u>MI</u>		PROJECT NAME <u>CEMP</u>		PO#	
COMPLIANCE MONITORING Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		POPULATION SERVED		SAMPLE REMARKS <u>METALS</u> <u>AMMONIA</u> <u>T-phos</u> <u>TOC</u>		CHLORINATED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
SAMPLING SITE <u>HUMWTP-EFF CEM10010240</u>		TEST NAME <u>Table 1, monthly (included)</u>		TURNOVER TIME		MATRIX CODE	
LAB NUMBER		COLLECTION		DATE		TIME	
1 <u>3199185</u>		DATE <u>3/4/15</u>		TIME <u>11:35</u>		AM <input checked="" type="checkbox"/> PM <input type="checkbox"/>	
2 <u>186</u>							
3 <u>187</u>							
4 <u>188</u>							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE <u>3/4/15</u>	TIME <u>12:30</u>	RECEIVED BY: (Signature)	DATE	TIME	LAB COMMENTS
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME	LAB COMMENTS
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY: <u>K. D. Jones</u>	DATE <u>3-5-15</u>	TIME <u>10:15</u>	CONDITIONS UPON RECEIPT (check one): <input checked="" type="checkbox"/> Iced <input type="checkbox"/> Wet/Blue <input type="checkbox"/> Ambient <u>5.2</u> °C Upon Receipt <u>N/A</u>

MATRIX CODES:
 DW-DRINKING WATER
 RW-REAGENT WATER
 GW-GROUND WATER
 EW-EXPOSURE WATER
 SW-SURFACE WATER
 PW-POOL WATER
 WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES
 SW = Standard Written: (15 working days) 0%
 RV = Rush Verbal: (5 working days) 50%
 RW = Rush Written: (5 working days) 75%
 * Please call, expedited service not available for all testing

IV* = Immediate Verbal: (3 working days) 100%
IW* = Immediate Written: (3 working days) 125%
SP* = Weekend, Holiday CALL
STAT* = Less than 48 hours CALL

Sample analysis will be provided according to the standard EEA Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by EEA.

06-LO-F0435 Issue 4.0 Effective Date: 2014-05-01

Table 1

Humboldt Mill WTP Effluent Monthly List

	Frequency of Analysis*	Sample Type	Analytical Methods	Maximum Daily Limit	Quantitation/ Reporting Limit	Max Daily Limit & Quantitation Units
Field						
Dissolved Oxygen	Daily	Grab	Field	Report	NA	mg/l
pH	Daily	Grab	Field	6.5 - 9	NA	S.U.
Outfall Observation	Daily	Grab	Field	**	NA	NA
Other						
Total Suspended Solids	Monthly	Grab	2540D	30	NA	mg/L
Total Dissolved Solids	Monthly	Grab	2540C	Report	NA	mg/L
Biochemical Oxygen Demand (BOD)	Monthly	Grab	5210B	Report	NA	mg/l
Acute Toxicity	Monthly	Grab		1	NA	TU _A
Chronic Toxicity	Monthly	Grab		1	NA	TU _C
Anions						
Ammonia Nitrogen	Monthly	Grab	4500-NH3 G	Report	0.05	mg/l
Total Phosphorus	Monthly	Grab	4500-P E	Report	0.01	mg/l
Fluoride	Monthly	Grab	4500-F C	Report	100	ug/l
Sulfate	Monthly	Grab	ASTMD516-90(02)	Report	5	mg/l
Metals						
Total Antimony	Monthly	Grab	200.7/200.8	Report	1.0	ug/l
Total Arsenic	Monthly	Grab	200.7/200.8	10	1.0	ug/l
Total Barium	Monthly	Grab	200.7/200.8	Report	5.0	ug/l
Total Boron	Monthly	Grab	200.7/200.8	250	20.0	ug/l
Total Cadmium	Monthly	Grab	200.7/200.8	5	0.2	ug/l
Total Chromium	Monthly	Grab	200.7/200.8	Report	1.0	ug/l
Total Cobalt	Monthly	Grab	200.7/200.8	Report	15.0	ug/l
Total Copper	Monthly	Grab	200.7/200.8	21	1.0	ug/l
Total Lead	Monthly	Grab	200.7/200.8	Report	1.0	ug/l
Total Lithium	Monthly	Grab	200.7/200.8	Report	8.0	ug/l
Total Manganese	Monthly	Grab	200.7/200.8	Report	5.0	ug/l
Total Mercury	Monthly	Grab	1631E	2.1	0.5	ng/L
Total Molybdenum	Monthly	Grab	200.7/200.8	Report	25.0	ug/l
Total Nickel	Monthly	Grab	200.7/200.8	Report	2.0	ug/l
Total Selenium	Monthly	Grab	200.7/200.8	25	1.0	ug/l
Total Strontium	Monthly	Grab	200.7/200.8	Report	5.0	ug/l
Total Zinc	Monthly	Grab	200.7/200.8	Report	10.0	ug/l