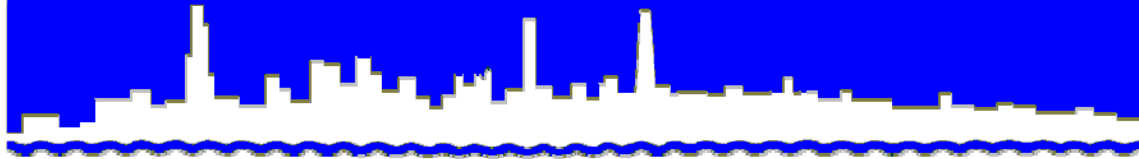


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 14-04

CALUMET EAST SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

FOURTH QUARTER 2013

February 2014

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, Illinois 60611-3154

312.751.5190

THOMAS C. GRANATO, Ph.D.

Director of Monitoring and Research

312.751.5190 f: 312.751.5194

thomas.granato@mwr.org

February 20, 2014

BOARD OF COMMISSIONERS

Kathleen Therese Meany

President

Barbara J McGowan

Vice President

Mariyana T. Spyropoulos

Chairman of Finance

Michael A. Alvarez

Frank Avila

Cynthia M. Santos

Debra Shore

Kari K. Steele

Patrick D. Thompson

Mr. S. Alan Keller, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794 - 9276

Dear Mr. Keller:

Subject: Calumet East Solids Management Area - Calumet Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-0265, Monitoring Report for October, November, and December 2013

The attached four tables contain the monitoring data for the Calumet East Solids Management Area for October, November, and December 2013 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2010-AO-0265.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1N Through L-6N at the Calumet East Solids Management Area Sampled on November 13, 2013

Table 2, Analysis of Monthly Compositied Biosolids Placed in the Calumet East Solids Management Drying Area During October 2013

Table 3, Analysis of Monthly Compositied Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During October 2013

Table 4, Analysis of Monthly Compositied Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During November 2013

Mr. S. Alan Keller

2

February 20, 2014

Subject: Calumet East Solids Management Area - Calumet Water Reclamation
Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-
0265, Monitoring Report for October, November, and December 2013

Biosolids were placed in the solids drying area during October and removed from the site during October and November 2013.

Very truly yours,

Thomas C. Granato, Ph.D.
Director
Monitoring and Research

TCG:PL:cm
Attachments
cc w/att: Mr. J. Patel, IEPA
Records Unit, IEPA

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS L-1N
THROUGH L-6N AT THE CALUMET EAST SOLIDS MANAGEMENT
AREA SAMPLED ON NOVEMBER 13, 2013

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		7.9	7.8	7.8	7.5
EC	mS/m	397	352	278	474
Total Dissolved Solids	mg/L	4,156	3,654	2,934	6,338
Total Dissolved Organic Carbon	"	9	10	6	10
Cl ⁻	"	179	142	47	901
SO ₄ ⁼	"	2,058	1,743	1,463	2,465
Alkalinity as CaCO ₃	"	556	561	463	712
TKN	"	15	3	< 1	3
NH ₃ -N	"	4	2	0.3	1
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15	< 0.15	< 0.15
Total P	"	< 0.20	2.9	2.3	0.24
Al	"	< 1.0	< 1.0	< 1.0	< 1.0
Ca	"	421	424	366	466
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	< 0.005	< 0.005
Fe	"	15	18	15	71
Hg	μg/L	< 0.20	< 0.20	< 0.20	< 0.20
K	mg/L	11	11	7	14
Mg	"	302	259	213	334
Mn	"	0.376	0.475	0.486	0.441
Na	"	173	112	62	519
Ni	"	< 0.005	< 0.005	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02	< 0.02	< 0.02
Zn	"	< 0.01	< 0.01	< 0.01	< 0.01

TABLE 1 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1N THROUGH L-6N AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON NOVEMBER 13, 2013

Parameter	Unit	Lysimeter No.	
		L-5	L-6N
pH ¹		7.9	8.0
EC	mS/m	193	176
Total Dissolved Solids	mg/L	1,560	1,582
Total Dissolved Organic Carbon	"	< 1	6
Cl ⁻	"	225	20
SO ₄ ⁼	"	542	683
Alkalinity as CaCO ₃	"	249	385
TKN	"	< 1	< 1
NH ₃ -N	"	0.3	0.9
NO ₂ + NO ₃ -N	"	0.24	0.17
Total P	"	< 0.20	2.7
Al	"	< 1.0	< 1.0
Ca	"	196	194
Cd	"	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005
Fe	"	0.8	3
Hg	μg/L	< 0.20	< 0.20
K	mg/L	5	5
Mg	"	103	102
Mn	"	0.068	0.178
Na	"	89	83
Ni	"	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02
Zn	"	< 0.01	< 0.01

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS
PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA
DURING OCTOBER 2013

Parameter	Unit	Concentration ¹
pH		7.8
Total Solids	%	6.8
Total Volatile Solids ²	"	51.6

¹Values are the means of three samples.

²Total volatile solids as a percentage of total solids.

TABLE 3: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
 BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS
 MANAGEMENT DRYING AREA DURING OCTOBER 2013

Parameter	Unit	Concentration ¹
pH		7.2
Total Solids	%	43.8
Total Volatile Solids ²	"	45.5
TKN	mg/kg	27,951
NH ₃ -N	"	3,454
Total P	"	25,544
Al	"	9,774
Ca	"	49,163
Cd	"	2
Cr	"	50
Cu	"	407
Fe	"	22,155
Hg	"	0.82
K	"	2,733
Mg	"	16,976
Mn	"	935
Na	"	1,593
Ni	"	28
Pb	"	81
Zn	"	1,132

¹Values are the means of two samples.

²Total volatile solids as a percentage of total solids.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2013

Parameter	Unit	Concentration ¹
pH		7.8
Total Solids	%	22.2
Total Volatile Solids ²	"	46.4
TKN	mg/kg	29,055
NH ₃ -N	"	5,060
Total P	"	23,481
Al	"	10,964
Ca	"	47,717
Cd	"	2
Cr	"	52
Cu	"	401
Fe	"	22,082
Hg	"	0.95
K	"	2,922
Mg	"	15,359
Mn	"	908
Na	"	1,679
Ni	"	28
Pb	"	81
Zn	"	1,173

¹Values are for one sample.

²Total volatile solids as a percentage of total solids.