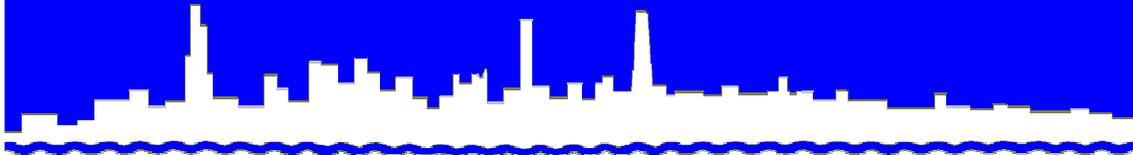


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 11-9

CALUMET EAST SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

FOURTH QUARTER 2010

MARCH 2011

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Thomas C. Granato, Ph.D.
Acting Director of Monitoring and Research
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March 7, 2011

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 - Stickney Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-0265, Monitoring Report for October, November, and December 2010

The attached five tables contain the monitoring data for the Calumet East Solids Management Area for October, November, and December 2010 as required by Illinois Environmental Protection Agency 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 October 13, 2010
- Table 2, Analysis of Monthly Compositated Biosolids Placed in the Calumet East Solids Management Drying Area during October 2010
- Table 3, Analysis of Monthly Compositated Biosolids Placed in the Calumet East Solids Management Drying Area during November 2010
- Table 4, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area during October 2010
- Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area during November 2010

Mr. S. Alan Keller

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March 7, 2011

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

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

Very truly yours,

Thomas C. Granato
Acting Director
Monitoring and Research

TCG:PL:kq

Attachments

cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Granato/O'Connor

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS L-1N
THROUGH L-6N AT THE CALUMET EAST SOLIDS MANAGEMENT
AREA SAMPLED ON OCTOBER 13, 2010

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH ¹		8.1	7.9	8.2	NA ²
EC	mS/m	415	364	288	691
Total Dissolved Solids	mg/L	4,160	3,664	2,888	6,212
Total Dissolved Organic Carbon	"	8	19	7	12
Cl ⁻	"	168	145	51	897
SO ₄ ⁼	"	1,942	1,554	1,315	2,136
TKN	"	15	4	0.9	4
NH ₃ -N	"	8	3	0.4	2
NO ₂ + NO ₃ -N	"	0.78	0.31	0.28	0.10
Total P	"	0.17	NRR ³	0.64	0.30
Alkalinity as CaCO ₃	"	515	588	399	703
Al	"	< 1.0	< 1.0	< 1.0	< 1.0
Ca	"	517	543	442	633
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.003	< 0.003	< 0.003	< 0.003
Cu	"	< 0.005	< 0.005	< 0.005	< 0.005
Fe	"	13	24	10	71
Hg	μg/L	< 0.20	< 0.20	< 0.20	< 0.20
K	mg/L	10	11	6	13
Mg	"	287	241	200	320
Mn	"	0.218	0.781	0.620	0.628
Na	"	184	112	59	696
Ni	"	0.012	< 0.008	< 0.008	< 0.008
Pb	"	< 0.03	< 0.03	< 0.03	< 0.03
Zn	"	< 0.02	< 0.02	< 0.02	0.11

TABLE 1 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1N THROUGH L-6N AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON OCTOBER 13, 2010

Parameter	Unit	Lysimeter No.	
		L-5	L-6N
pH ¹		8.1	
EC	mS/m	194	
Total Dissolved Solids	mg/L	1,636	
Total Dissolved Organic Carbon	"	2	
Cl ⁻	"	213	
SO ₄ ⁼	"	505	
TKN	"	< 0.5	
NH ₃ -N	"	< 0.1	L
NO ₂ + NO ₃ -N	"	0.45	Y
Total P	"	0.25	S
Alkalinity as CaCO ₃	"	247	I M
Al	"	< 1.0	E
Ca	"	208	T
Cd	"	< 0.001	E
Cr	"	< 0.003	R
Cu	"	< 0.005	D
Fe	"	< 0.2	R
Hg	μg/L	< 0.20	Y
K	mg/L	4	
Mg	"	96.4	
Mn	"	0.085	
Na	"	88	
Ni	"	< 0.008	
Pb	"	< 0.03	
Zn	"	< 0.02	

¹pH analyzed beyond recommended holding time of 15 minutes.

²No analysis.

³No reportable result.

TABLE 2: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS
 PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA
 DURING OCTOBER 2010

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	8.3
Total Volatile Solids ²	"	46.6

¹Values are the means of five samples.

²Total volatile solids as a percentage of total solids.

TABLE 3: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS
PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA
DURING NOVEMBER 2010

Parameter	Unit	Concentration ¹
pH		7.5
Total Solids	%	20.2
Total Volatile Solids ²	”	45.3

¹Values are for one sample.

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 OCTOBER 2010

Parameter	Unit	Concentration ¹
pH		7.7
Total Solids	%	25.0
Total Volatile Solids ²	"	45.9
TKN	mg/kg	32,522
NH ₃ -N	"	5,762
Total P	"	24,297
Al	"	11,048
Ca	"	50,571
Cd	"	3
Cr	"	64
Cu	"	430
Fe	"	23,115
Hg	"	0.97
K	"	3,993
Mg	"	16,401
Mn	"	956
Na	"	1,900
Ni	"	35
Pb	"	86
Zn	"	1,137

¹Values are the means of seven samples.

²Total volatile solids as a percentage of total solids.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2010

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	23.7
Total Volatile Solids ²	"	42.0
TKN	mg/kg	30,511
NH ₃ -N	"	7,519
Total P	"	21,260
Al	"	10,022
Ca	"	45,579
Cd	"	2
Cr	"	75
Cu	"	368
Fe	"	20,651
Hg	"	0.85
K	"	4,013
Mg	"	15,804
Mn	"	832
Na	"	1,931
Ni	"	36
Pb	"	70
Zn	"	969

¹Values are for one sample.

²Total volatile solids as a percentage of total solids.