

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 10-45

HARLEM AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

SECOND QUARTER 2010

AUGUST 2010

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, Illinois 60611-3154

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August 20, 2010

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: Harlem Avenue Solids Management Area - Stickney Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2009-AO-2715-1, Monitoring Report for April, May, and June 2010

The attached five tables contain the monitoring data for the Harlem Avenue Solids Management Area for April, May, and June 2010 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2009-AO-2715-1.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1N1 through L-3N at the Harlem Avenue Solids Management Area Sampled on April 7, 2010

Table 2, Analysis of Monthly Composited Biosolids Placed in the Harlem Avenue Solids Management Drying Area During April 2010

Table 3, Analysis of Monthly Composited Biosolids Placed in the Harlem Avenue Solids Management Drying Area During May 2010

Table 4, Analysis of Monthly Composited Biosolids Placed in the Harlem Avenue Solids Management Drying Area During June 2010

Subject: Harlem Avenue Solids Management Area - Stickney Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2009-AO-2715-1, Monitoring Report for April, May, and June 2010

Table 5, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Harlem Avenue Solids Management Drying Area During April 2010

Two new lysimeters, L-2N and L-3N, were installed at this site in September 2008 as replacements for L-2 and L-3, respectively. By a letter dated June 10, 2010, the IEPA approved termination of monitoring using the old lysimeters. Data for these lysimeters will not be included in future quarterly reports. Biosolids were placed in the solids drying area during April, May, and June and removed from the site during April 2010.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

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

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS L-1N1
THROUGH L-3N AT THE HARLEM AVENUE SOLIDS MANAGEMENT
AREA SAMPLED ON APRIL 7, 2010

Parameter	Unit	Lysimeter No.		
		L-1N1	L-2	L-2N
pH ¹		7.9	7.9	7.9
EC	mS/m	228	337	347
Total Dissolved Solids	mg/L	1,918	3,220	3,988
Total Dissolved Organic Carbon	"	40	5	6
Cl ⁻	"	101	203	59
SO ₄ ⁼	"	14	1,388	1,920
TKN	"	9	0.6	0.9
NH ₃ -N	"	7	< 0.1	< 0.1
NO ₂ + NO ₃ -N	"	0.14	4.9	36
Total P	"	0.14	< 0.10	< 0.10
Alkalinity as CaCO ₃	"	1,212	504	507
Al	"	0.062	0.092	0.101
Ca	"	314	564	718
Cd	"	< 0.003	< 0.003	< 0.003
Cr	"	< 0.003	< 0.003	< 0.003
Cu	"	< 0.008	< 0.008	< 0.008
Fe	"	10.8	< 0.025	< 0.025
Hg	μg/L	< 0.20	< 0.20	< 0.20
K	mg/L	4	0.4	1
Mg	"	184	145	203
Mn	"	0.376	0.498	2.88
Na	"	45	87	25
Ni	"	< 0.004	< 0.004	0.008
Pb	"	< 0.020	< 0.020	< 0.020
Zn	"	< 0.015	0.017	0.030

TABLE 1: (Continued) ANALYSIS OF WATER FROM LYSIMETERS L-1N1 THROUGH L-3N AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON APRIL 7, 2010

Parameter	Unit	Lysimeter No.	
		L-3	L-3N
pH ¹		7.9	7.9
EC	mS/m	210	160
Total Dissolved Solids	mg/L	1,732	1,508
Total Dissolved Organic Carbon	"	6	8
Cl ⁻	"	130	158
SO ₄ ⁼	"	273	214
TKN	"	< 0.5	2
NH ₃ -N	"	< 0.1	1
NO ₂ + NO ₃ -N	"	0.86	0.36
Total P	"	< 0.10	0.12
Alkalinity as CaCO ₃	"	872	636
Al	"	0.062	0.054
Ca	"	311	252
Cd	"	< 0.003	< 0.003
Cr	"	< 0.003	< 0.003
Cu	"	< 0.008	< 0.008
Fe	"	0.420	14.6
Hg	μg/L	< 0.20	< 0.20
K	mg/L	1	1
Mg	"	125	88.2
Mn	"	1.83	0.689
Na	"	57	65
Ni	"	< 0.004	< 0.004
Pb	"	< 0.020	< 0.020
Zn	"	< 0.015	< 0.015

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS
 PLACED IN THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA
 DURING APRIL 2010

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	23.2
Total Volatile Solids ²	"	46.5
TKN	mg/kg	44,128
NH ₃ -N	"	9,402

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 HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA
 DURING MAY 2010

Parameter	Unit	Concentration ¹
pH		8.3
Total Solids	%	25.0
Total Volatile Solids ²	"	52.0
TKN	mg/kg	42,701
NH ₃ -N	"	6,325

¹Values are for one sample.

²Total volatile solids as a percentage of total solids.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED BIOSOLIDS
 PLACED IN THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA
 DURING JUNE 2010

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	25.9
Total Volatile Solids ²	"	48.5
TKN	mg/kg	27,335
NH ₃ -N	"	3,157

¹Values are for one sample.

²Total volatile solids as a percentage of total solids.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING APRIL 2010

Parameter	Unit	Concentration ¹
pH		7.6
Total Solids	%	30.0
Total Volatile Solids ²	"	63.2
TKN	mg/kg	53,384
NH ₃ -N	"	8,434
Total P	"	26,839
Al	"	6,944
As	"	10
Ca	"	32,576
Cd	"	2
Cr	"	86
Cu	"	649
Fe	"	29,844
Hg	"	1.4
K	"	1,613
Mg	"	6,491
Mn	"	739
Mo	"	14
Na	"	961
Ni	"	63
Pb	"	43
Se	"	20
Zn	"	694

¹Values are for one sample.

²Total volatile solids as a percentage of total solids.