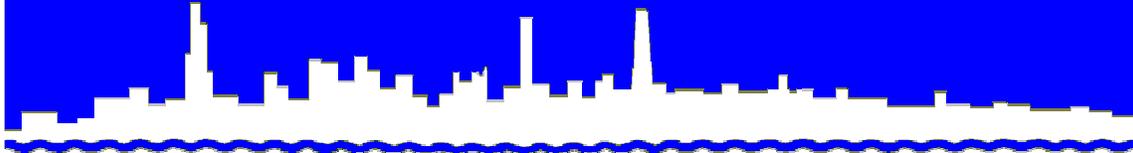


*Protecting Our Water Environment*



*Metropolitan Water Reclamation District of Greater Chicago*

***MONITORING AND RESEARCH  
DEPARTMENT***

*REPORT NO. 10-55*

*HARLEM AVENUE SOLIDS MANAGEMENT AREA*

*MONITORING REPORT FOR*

*THIRD QUARTER 2010*

*DECEMBER 2010*

## Protecting Our Water Environment

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### Louis Kollias, P.E., BCEE

Director of Monitoring and Research

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December 1, 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 July, August, and September 2010

The attached seven tables contain the monitoring data for the Harlem Avenue Solids Management Area for July, August, and September 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 July 7, 2010

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

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

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

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

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

Table 6, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Harlem Avenue Solids Management Drying Area During August 2010

Table 7, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Harlem Avenue Solids Management Drying Area During September 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. In June 2010, the IEPA terminated monitoring of the old lysimeters. Data for these lysimeters will no longer be included in the quarterly report.

Biosolids were placed in and removed from the solids drying area during July, August, and September 2010.

Very truly yours,

Louis Kollias  
Director  
Monitoring and Research

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

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

Parameter	Unit	Lysimeter No.		
		L-1N1	L-2N	L-3N
pH <sup>1</sup>		7.9	7.9	8.1
EC	mS/m	252	400	199
Total Dissolved Solids	mg/L	2,000	4,860	1,784
Total Dissolved Organic Carbon	"	38	6	9
Cl <sup>-</sup>	"	796	57	130
SO <sub>4</sub> <sup>=</sup>	"	18	1,877	221
TKN	"	8	0.9	1
NH <sub>3</sub> -N	"	6	< 0.1	0.5
NO <sub>2</sub> + NO <sub>3</sub> -N	"	0.16	71	3.2
Total P	"	< 0.10	< 0.10	< 0.10
Alkalinity as CaCO <sub>3</sub>	"	368	541	786
Al	"	0.084	0.122	0.079
Ca	"	332	730	282
Cd	"	< 0.003	< 0.003	< 0.003
Cr	"	< 0.003	< 0.003	< 0.003
Cu	"	< 0.008	< 0.008	< 0.008
Fe	"	11.5	< 0.025	2.32
Hg	μg/L	< 0.20	< 0.20	< 0.20
K	mg/L	4	1	1
Mg	"	188	201	100
Mn	"	0.416	2.89	0.831
Na	"	50	25	61
Ni	"	< 0.004	0.008	< 0.004
Pb	"	< 0.020	< 0.020	< 0.020
Zn	"	< 0.015	0.035	0.018

<sup>1</sup>pH 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 JULY 2010

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Parameter	Unit	Concentration <sup>1</sup>
pH		8.1
Total Solids	%	20.6
Total Volatile Solids <sup>2</sup>	”	42.8

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<sup>1</sup>Values are the means of three samples.

<sup>2</sup>Total 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 AUGUST 2010

Parameter	Unit	Concentration <sup>1</sup>
pH		7.9
Total Solids	%	20.5
Total Volatile Solids <sup>2</sup>	"	44.3

<sup>1</sup>Values are the means of four samples.

<sup>2</sup>Total 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 SEPTEMBER 2010

Parameter	Unit	Concentration <sup>1</sup>
pH		8.2
Total Solids	%	22.7
Total Volatile Solids <sup>2</sup>	"	42.1

<sup>1</sup>Values are the means of two samples.

<sup>2</sup>Total 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 JULY 2010

Parameter	Unit	Concentration <sup>1</sup>
pH		6.1
Total Solids	%	64.8
Total Volatile Solids <sup>2</sup>	"	41.9
TKN	mg/kg	22,027
NH <sub>3</sub> -N	"	907
Total P	"	22,164
Al	"	17,997
As	"	10
Ca	"	39,211
Cd	"	3
Cr	"	150
Cu	"	421
Fe	"	16,076
Hg	"	0.75
K	"	2,554
Mg	"	18,875
Mn	"	628
Mo	"	11
Na	"	732
Ni	"	38
Pb	"	105
Se	"	< 20
Zn	"	805

<sup>1</sup>Values are the means of five samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2010

Parameter	Unit	Concentration <sup>1</sup>
pH		6.7
Total Solids	%	61.0
Total Volatile Solids <sup>2</sup>	"	38.7
TKN	mg/kg	20,627
NH <sub>3</sub> -N	"	2,438
Total P	"	16,556
Al	"	19,836
As	"	11
Ca	"	36,704
Cd	"	3
Cr	"	152
Cu	"	464
Fe	"	16,680
Hg	"	1.3
K	"	2,254
Mg	"	17,479
Mn	"	500
Mo	"	11
Na	"	716
Ni	"	42
Pb	"	133
Se	"	20
Zn	"	930

<sup>1</sup>Values are the means of 10 samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.

TABLE 7: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2010

Parameter	Unit	Concentration <sup>1</sup>
pH		7.0
Total Solids	%	71.3
Total Volatile Solids <sup>2</sup>	''	39.8
TKN	mg/kg	24,537
NH <sub>3</sub> -N	''	4,050
Total P	''	20,407
Al	''	20,443
As	''	11
Ca	''	40,579
Cd	''	3
Cr	''	161
Cu	''	427
Fe	''	17,204
Hg	''	1.3
K	''	2,548
Mg	''	19,242
Mn	''	528
Mo	''	12
Na	''	851
Ni	''	41
Pb	''	140
Se	''	< 20
Zn	''	971

<sup>1</sup>Values are the means of nine samples.

<sup>2</sup>Total volatile solids as a percentage of total solids.