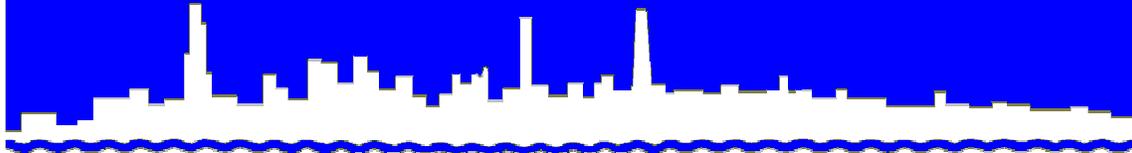


*Protecting Our Water Environment*



***Metropolitan Water Reclamation District of Greater Chicago***

***MONITORING AND RESEARCH  
DEPARTMENT***

***REPORT NO. 12-9***

***HARLEM AVENUE SOLIDS MANAGEMENT AREA***

***MONITORING REPORT FOR***

***FOURTH QUARTER 2011***

***FEBRUARY 2012***

**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 Department

[thomas.granato@mwrld.org](mailto:thomas.granato@mwrld.org)

February 22, 2012

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 October, November, and December 2011

The attached five tables contain the monitoring data for the Harlem Avenue Solids Management Area for October, November, and December 2011 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 October 19, 2011

Table 2, Analysis of Monthly Compositied Biosolids Placed in the Harlem Avenue Solids Management Drying Area During December 2011

Table 3, Analysis of Monthly Compositied Processed Digested Biosolids Removed from the Harlem Avenue Solids Management Drying Area During October 2011

Table 4, Analysis of Monthly Compositied Processed Digested Biosolids Removed from the Harlem Avenue Solids Management Drying Area During November 2011

Subject: Harlem Avenue Solids Management Area – Stickney Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2009-AO-2715-1, Monitoring Report for October, November, and December 2011

Table 5, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Harlem Avenue Solids Management Drying Area During December 2011

Biosolids were placed in the solids drying area during December and removed from the site during October, November, and December 2011.

Very truly yours

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

TCG:PL:cm  
Attachments  
cc w/att: R. Sulski, IEPA  
Records Unit, IEPA

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS L-1N1  
THROUGH L-3N AT THE HARLEM AVENUE SOLIDS MANAGEMENT  
AREA SAMPLED ON OCTOBER 19, 2011

Parameter	Unit	Lysimeter No.		
		L-1N1	L-2N	L-3N
pH <sup>1</sup>		8.0	7.9	8.1
EC	mS/m	205	354	163
Total Dissolved Solids	mg/L	1,610	3,366	1,608
Total Dissolved Organic Carbon	"	38	6	13
Cl <sup>-</sup>	"	101	51	103
SO <sub>4</sub> <sup>=</sup>	"	61	1,682	109
TKN	"	7	1	1
NH <sub>3</sub> -N	"	6	< 0.1	0.8
NO <sub>2</sub> + NO <sub>3</sub> -N	"	0.12	92	2.6
Total P	"	< 0.10	< 0.10	0.66
Alkalinity as CaCO <sub>3</sub>	"	899	547	1,054
Al	"	< 1.0	< 1.0	< 1.0
Ca	"	344	696	293
Cd	"	< 0.001	< 0.001	< 0.001
Cr	"	< 0.003	< 0.003	< 0.003
Cu	"	< 0.005	< 0.005	< 0.005
Fe	"	0.5	< 0.2	21
Hg	μg/L	< 0.20	< 0.20	< 0.20
K	mg/L	4	< 1	< 1
Mg	"	189	193	118
Mn	"	0.347	2.29	0.844
Na	"	47	28	44
Ni	"	< 0.008	0.011	< 0.008
Pb	"	< 0.03	< 0.03	< 0.03
Zn	"	< 0.02	0.04	< 0.02

<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 DECEMBER 2011

---

Parameter	Unit	Concentration <sup>1</sup>
pH		8.1
Total Solids	%	19.1
Total Volatile Solids <sup>2</sup>	”	45.9

---

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

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

TABLE 3: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING OCTOBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		6.4
Total Solids	%	63.9
Total Volatile Solids <sup>2</sup>	"	41.0
TKN	mg/kg	23,715
NH <sub>3</sub> -N	"	2,504
Total P	"	25,095
Al	"	19,278
As	"	< 10
Ca	"	41,844
Cd	"	4
Cr	"	156
Cu	"	448
Fe	"	17,374
Hg	"	1.1
K	"	2,366
Mg	"	20,186
Mn	"	603
Mo	"	9
Na	"	1,004
Ni	"	41
Pb	"	116
Se	"	< 5
Zn	"	848

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

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

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		6.5
Total Solids	%	63.0
Total Volatile Solids <sup>2</sup>	"	42.0
TKN	mg/kg	25,951
NH <sub>3</sub> -N	"	2,618
Total P	"	26,549
Al	"	21,798
As	"	< 10
Ca	"	42,110
Cd	"	4
Cr	"	162
Cu	"	449
Fe	"	18,427
Hg	"	0.90
K	"	3,374
Mg	"	19,995
Mn	"	637
Mo	"	10
Na	"	1,123
Ni	"	43
Pb	"	121
Se	"	< 5
Zn	"	886

<sup>1</sup>Values are the means of four 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 DECEMBER 2011

Parameter	Unit	Concentration <sup>1</sup>
pH		7.2
Total Solids	%	44.4
Total Volatile Solids <sup>2</sup>	"	41.4
TKN	mg/kg	32,050
NH <sub>3</sub> -N	"	4,857
Total P	"	28,195
Al	"	20,832
As	"	< 10
Ca	"	39,798
Cd	"	3
Cr	"	149
Cu	"	399
Fe	"	17,109
Hg	"	0.86
K	"	3,294
Mg	"	19,390
Mn	"	590
Mo	"	9
Na	"	978
Ni	"	37
Pb	"	107
Se	"	< 5
Zn	"	815

<sup>1</sup>Values are for one sample.

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