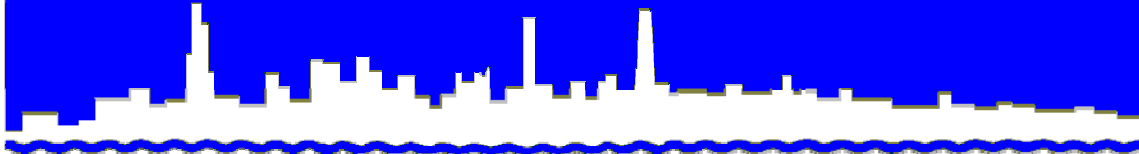


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-34

HARLEM AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

FIRST QUARTER 2007

MAY 2007

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312-751-5600

Louis Kollias, P.E., BCEE
Director of Research and Development
312-751-5190

May 24, 2007

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 WRP, Contract No. 84-111-2P, IEPA Permit No. 2004-AO-2591, Monitoring Report for January, February, and March 2007

The attached five tables contain the monitoring data for the Harlem Avenue Solids Management Area for January, February, and March 2007 as required by IEPA Operating Permit No. 2004-AO-2591. During February, all lysimeters were frozen and could not be sampled. In a letter dated January 19, 2007, the IEPA granted permission to terminate the monitoring of lysimeters L-1 and L-1N. Therefore, monitoring data for these lysimeters will not be included in this and subsequent reports.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-2 through L-1N-1 at the Harlem Avenue Solids Management Area Sampled on January 3, 2007

Table 2, Analysis of Water from Lysimeters L-2 through L-1N-1 at the Harlem Avenue Solids Management Area Sampled on January 17, 2007

Table 3, Analysis of Water from Lysimeters L-2 through L-1N-1 at the Harlem Avenue Solids Management Area Sampled on March 1, 2007

Table 4, Analysis of Water from Lysimeters L-2 through L-1N-1 at the Harlem Avenue Solids Management Area Sampled on March 14, 2007

Table 5, Analysis of Water from Lysimeters L-2 through L-1N-1 at the Harlem Avenue Solids Management Area Sampled on March 28, 2007

Subject: Harlem Avenue Solids Management Area - Stickney WRP, Contract No. 84-111-2P, IEPA Permit No. 2004-AO-2591, Monitoring Report for January, February, and March 2007

No biosolids were placed in or removed from the solids drying area during January, February, and March 2007.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:spy

Attachments

cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Mr. W. Stuba
Dr. T. Granato
Dr. A. Cox
Dr. P. Lindo
Ms. M. Patel

cc wo/att: Ms. M. Sharma
Mr. S. Levy
Mr. O. Jamjun
Mr. A. Quintanilla
Mr. A. Ryzak

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS
L-2 THROUGH L-1N-1 AT THE HARLEM AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JANUARY 3, 2007

Parameter	Unit	Lysimeter No.		
		L-2	L-3	L-1N-1
pH ¹		7.3	7.2	7.4
EC	mS/m	176	230	257
Total Dissolved Solids	mg/L	1,346	1,788	1,964
Total Diss. Org. Carbon	"	3	8	42
Cl ⁻	"	201	93	101
SO ₄ ⁼	"	255	258	2
TKN	"	1.3	0.73	8.3
NH ₃ -N	"	0.72	<0.02	5.4
NO ₂ + NO ₃ -N	"	0.67	1.2	0.98
Total P	"	<0.05	<0.05	<0.10
Alkalinity as CaCO ₃	"	425	1,109	1,526
Al	"	0.046	0.063	0.066
Ca	"	219	326	302
Cd	"	<0.0004	<0.0004	<0.0008
Cr	"	<0.0005	<0.0005	<0.0010
Cu	"	<0.002	<0.002	<0.004
Fe	"	0.010	0.026	5.84
Hg	μg/L	<0.05	<0.05	<0.10
K	mg/L	0.4	1	4
Mg	"	55.1	146	190
Mn	"	0.0083	0.1208	0.3602
Na	"	75	37	46
Ni	"	<0.0004	<0.0004	<0.0008
Pb	"	0.004	0.004	0.010
Zn	"	0.007	0.009	0.020

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-2 THROUGH L-1N-1 AT THE HARLEM AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JANUARY 17, 2007

Parameter	Unit	Lysimeter No.		
		L-2	L-3	L-1N-1
pH ¹			7.3	
EC	mS/m		217	
Total Dissolved Solids	mg/L		1,768	
Total Diss. Org. Carbon	"		8	
Cl ⁻	"		95	
SO ₄ ⁼	"		744	
		L		L
TKN	"	Y	0.88	Y
NH ₃ -N	"	S	<0.02	S
NO ₂ + NO ₃ -N	"	I	0.20	I
Total P	"	M	<0.05	M
Alkalinity as CaCO ₃	"	E	1,113	E
		T		T
Al	"	E	0.044	E
Ca	"	R	323	R
Cd	"		0.0006	
Cr	"	F	<0.0005	F
Cu	"	R	<0.002	R
		O		O
Fe	"	Z	0.014	Z
Hg	μg/L	E	<0.05	E
K	mg/L	N	1	N
Mg	"		146	
Mn	"		0.1522	
Na	"		38	
Ni	"		0.0048	
Pb	"		<0.004	
Zn	"		0.019	

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-2 THROUGH L-1N-1 AT THE HARLEM AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 1, 2007

Parameter	Unit	Lysimeter No.		
		L-2	L-3	L-1N-1
pH ¹		7.8	7.3	7.5
EC	mS/m	170	220	232
Total Dissolved Solids	mg/L	1,008	1,550	1,252
Total Diss. Org. Carbon	"	3	8	42
Cl ⁻	"	241	93	108
SO ₄ ⁼	"	281	238	8
TKN	"	0.80	0.87	9.3
NH ₃ -N	"	<0.02	<0.02	4.8
NO ₂ + NO ₃ -N	"	0.11	0.22	0.11
Total P	"	0.05	0.05	0.05
Alkalinity as CaCO ₃	"	404	1,095	1,318
Al	"	0.031	0.038	0.039
Ca	"	243	331	305
Cd	"	<0.0004	<0.0004	<0.0004
Cr	"	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002
Fe	"	0.024	0.004	0.054
Hg	μg/L	<0.05	<0.05	<0.05
K	mg/L	0.6	1	4
Mg	"	59.7	147	204
Mn	"	0.0182	0.1185	0.3418
Na	"	76	36	47
Ni	"	<0.0004	<0.0004	0.0026
Pb	"	<0.004	<0.004	<0.004
Zn	"	0.013	0.007	0.026

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF WATER FROM LYSIMETERS
L-2 THROUGH L-1N-1 AT THE HARLEM AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 14, 2007

Parameter	Unit	Lysimeter No.		
		L-2	L-3	L-1N-1
pH ¹			7.4	7.6
EC	mS/m		232	237
Total Dissolved Solids	mg/L		1,746	NA
Total Diss. Org. Carbon	"		8	38
Cl ⁻	"		111	107
SO ₄ ⁼	"		248	18
		L		
TKN	"	Y	0.89	7.7
NH ₃ -N	"	S	<0.02	5.1
NO ₂ + NO ₃ -N	"	I	0.53	0.31
Total P	"	M	0.05	0.05
Alkalinity as CaCO ₃	"	E	1,141	1,330
		T		
Al	"	E	0.066	0.059
Ca	"	R	331	302
Cd	"		<0.0004	<0.0004
Cr	"	F	<0.0005	<0.0005
Cu	"	R	<0.002	<0.002
		O		
Fe	"	Z	0.008	2.47
Hg	μg/L	E	<0.05	<0.05
K	mg/L	N	1	4
Mg	"		143	188
Mn	"		0.2261	0.3736
Na	"		39	46
Ni	"		<0.0004	0.0012
Pb	"		<0.004	<0.004
Zn	"		0.014	0.013

¹pH analyzed beyond recommended holding time of 15 minutes.

NA = No analysis; insufficient sample.

TABLE 5: ANALYSIS OF WATER FROM LYSIMETERS
L-2 THROUGH L-1N-1 AT THE HARLEM AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 28, 2007

Parameter	Unit	Lysimeter No.		
		L-2	L-3	L-1N-1
pH ¹		7.2	7.1	7.4
EC	mS/m	142	180	490
Total Dissolved Solids	mg/L	1,714	1,664	1,548
Total Diss. Org. Carbon	"	2	6	41
Cl ⁻	"	231	138	107
SO ₄ ⁼	"	373	239	3
TKN	"	1.1	0.67	8.8
NH ₃ -N	"	<0.02	<0.02	4.8
NO ₂ + NO ₃ -N	"	0.38	0.56	0.28
Total P	"	<0.05	<0.05	<0.05
Alkalinity as CaCO ₃	"	388	971	1,436
Al	"	0.068	0.073	0.074
Ca	"	275	287	288
Cd	"	<0.0004	<0.0004	<0.0004
Cr	"	0.0007	0.0011	0.0020
Cu	"	<0.002	<0.002	<0.002
Fe	"	0.010	0.009	8.15
Hg	μg/L	<0.05	<0.05	<0.05
K	mg/L	<0.2	1	4
Mg	"	66.9	120	183
Mn	"	0.0086	0.2694	0.3369
Na	"	70	50	45
Ni	"	<0.0004	<0.0004	0.0018
Pb	"	<0.004	<0.004	<0.004
Zn	"	0.015	0.010	0.014

¹pH analyzed beyond recommended holding time of 15 minutes.