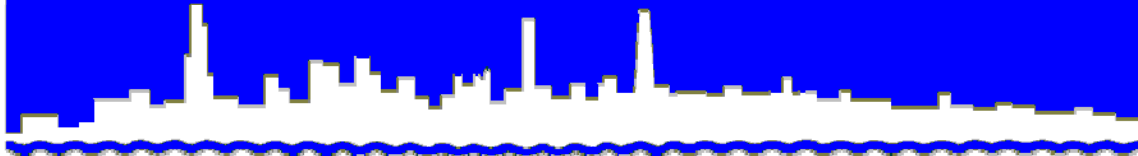


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 13-16

LAWNDALE AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

FIRST QUARTER 2013

MAY 2013

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

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May 24, 2013

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: Lawndale Avenue Solids Management Area - Stickney Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-0267, Monitoring Report for January, February, and March 2013

The attached three tables contain the monitoring data for the Lawndale Avenue Solids Management Area for January, February, and March 2013 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2010-AO-0267.

The data reported are as follows:

Table 1, Analysis of Water from Monitoring Wells M-11 Through M-15 at the Lawndale Avenue Solids Management Area Sampled on January 9, 2013

Table 2, Analysis of Water from Lysimeters L-4N and L-6N at the Lawndale Avenue Solids Management Area Sampled During January, February, and March 2013

Table 3, Analysis of Water from Lysimeters L-1N Through L-9N at the Lawndale Avenue Solids Management Area Sampled on March 20, 2013

Mr. S. Alan Keller

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May 24, 2013

Subject: Lawndale Avenue Solids Management Area - Stickney Water Reclamation Plant, Illinois Environmental Protection Agency Permit No. 2010-AO-0267, Monitoring Report for January, February, and March 2013

A new lysimeter L-7N-1 was installed in June 2010 as a replacement for L-7N. No biosolids were placed in or removed from the solids drying area during January, February, and March 2013.

Very truly yours,

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

TCG:PL:cm
Attachments
cc w/att: Mr. Patel, IEPA
Records Unit, IEPA

TABLE 1: ANALYSIS OF WATER FROM MONITORING WELLS M-11
THROUGH M-15 AT THE LAWNDALE AVENUE SOLIDS MANAGEMENT
AREA SAMPLED ON JANUARY 9, 2013

Parameter	Unit	Monitoring Well No.		
		M-11	M-12	M-13
pH ¹		7.1	7.5	7.5
EC	mS/m	49	69	59
Total Dissolved Solids	mg/L	672	872	1,326
Total Dissolved Organic Carbon	"	2	< 1	2
Cl ⁻	"	15	15	< 10
SO ₄ ⁼	"	186	336	613
Alkalinity as CaCO ₃	"	344	296	327
TKN	"	< 1	< 1	< 1
NH ₃ -N	"	1	0.4	0.4
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15	< 0.15
Total P	"	< 0.20	< 0.20	< 0.20
Al	"	< 1.0	< 1.0	< 1.0
Ca	"	100	84	175
Cd	"	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	< 0.005
Fe	"	0.2	< 0.1	< 0.1
Hg	μg/L	< 0.200	< 0.200	< 0.200
K	mg/L	10	11	13
Mg	"	51	41	89
Mn	"	0.003	0.002	0.009
Na	"	60	258	93
Ni	"	< 0.005	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02	< 0.02
Zn	"	0.61	0.38	1.4

TABLE 1 (Continued): ANALYSIS OF WATER FROM MONITORING WELLS M-11 THROUGH M-15 AT THE LAWNDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON JANUARY 9, 2013

Parameter	Unit	Monitoring Well No.	
		M-14	M-15
pH ¹		7.7	7.2
EC	mS/m	90	101
Total Dissolved Solids	mg/L	568	1,650
Total Dissolved Organic Carbon	"	< 1	2
Cl ⁻	"	< 10	< 10
SO ₄ ⁼	"	117	823
Alkalinity as CaCO ₃	"	322	351
TKN	"	< 1	< 1
NH ₃ -N	"	0.3	0.5
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15
Total P	"	< 0.20	< 0.20
Al	"	< 1.0	< 1.0
Ca	"	78	238
Cd	"	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005
Fe	"	0.6	2
Hg	μg/L	< 0.200	< 0.200
K	mg/L	9	11
Mg	"	45	118
Mn	"	0.006	0.020
Na	"	38	55
Ni	"	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02
Zn	"	1.8	3.8

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS L-4N
AND L-6N AT THE LAWNSDALE AVENUE SOLIDS MANAGEMENT
AREA SAMPLED DURING JANUARY, FEBRUARY, AND MARCH 2013

Parameter	Unit	Date Sampled			
		01/09/13		02/07/13	
		L-4N	L-6N	L-4N	L-6N
pH ¹		8.0		7.8	
EC	mS/m	288		312	
Total Dissolved Solids	mg/L	1,570		3,102	
Total Dissolved Organic Carbon	"	6		8	
Cl ⁻	"	25		34	
SO ₄ ⁼	"	1,521		1,437	
TKN	"	5	L	6	L
NH ₃ -N	"	4	Y	6	Y
NO ₂ + NO ₃ -N	"	1.1	S	0.97	S
Total P	"	< 0.20	I	< 0.20	I
Alkalinity as CaCO ₃	"	646	M	607	M
Al	"	< 1.0	E	< 1.0	E
Ca	"	569	T	564	T
Cd	"	< 0.001	R	< 0.001	R
Cr	"	< 0.005	F	< 0.005	F
Cu	"	< 0.005	R	< 0.005	R
Fe	"	6	O	5	O
Hg	"	6	Z	5	Z
Hg	μg/L	< 0.20	E	< 0.20	E
K	mg/L	8	N	8	N
Mg	"	142		145	
Mn	"	0.525		0.507	
Na	"	62		67	
Ni	"	< 0.005		< 0.005	
Pb	"	< 0.02		< 0.02	
Zn	"	0.04		< 0.01	

TABLE 2 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-4N AND L-6N AT THE LAWNSDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED DURING JANUARY, FEBRUARY, AND MARCH 2013

Parameter	Unit	Date Sampled	
		03/27/13 L-4N	L-6N
pH ¹		8.1	
EC	mS/m	310	
Total Dissolved Solids	mg/L	NA ²	
Total Dissolved Organic Carbon	"	6	
Cl ⁻	"	63	
SO ₄ ⁼	"	1,524	
TKN	"	5	L
NH ₃ -N	"	4	Y
NO ₂ + NO ₃ -N	"	0.89	S
Total P	"	< 0.20	I
Alkalinity as CaCO ₃	"	659	M
			E
Al	"	< 1.0	T
Ca	"	561	E
Cd	"	< 0.001	R
Cr	"	< 0.005	F
Cu	"	< 0.005	R
			O
Fe	"	< 0.1	Z
Hg	μg/L	< 0.20	E
K	mg/L	7	N
Mg	"	147	
Mn	"	0.390	
Na	"	83	
Ni	"	< 0.005	
Pb	"	< 0.02	
Zn	"	< 0.01	

¹pH analyzed beyond recommended holding time of 15 minutes.

²No analysis.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS L-1N THROUGH L-9N AT THE LAWNDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 20, 2013

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-5N
pH ¹		8.2	8.0	7.7	7.9
EC	mS/m	176	254	242	679
Total Dissolved Solids	mg/L	1,504	1,854	1,788	4,428
Total Dissolved Organic Carbon	"	6	4	22	4
Cl ⁻	"	32	363	131	700
SO ₄ ⁼	"	623	458	270	1,690
TKN	"	3	< 1	2	2
NH ₃ -N	"	3	0.2	0.8	2
NO ₂ + NO ₃ -N	"	< 0.15	0.60	0.52	0.36
Total P	"	0.24	< 0.20	< 0.20	< 0.20
Alkalinity as CaCO ₃	"	348	467	226	535
Al	"	< 1.0	< 1.0	< 1.0	< 1.0
Ca	"	197	201	339	488
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	< 0.005	< 0.005
Fe	"	1	0.5	4	3
Hg	µg/L	< 0.20	< 0.20	< 0.20	< 0.20
K	mg/L	11	5	3	18
Mg	"	135	93	143	249
Mn	"	0.080	0.207	0.523	0.286
Na	"	74	254	96	299
Ni	"	< 0.005	< 0.005	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02	< 0.02	< 0.02
Zn	"	< 0.01	< 0.01	< 0.01	< 0.01

TABLE 3 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1N THROUGH L-9N AT THE LAWDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 20, 2013

Parameter	Unit	Lysimeter No.		
		L-7N	L-8N	L-9N
pH ¹		8.4	8.3	8.1
EC	mS/m	144	246	256
Total Dissolved Solids	mg/L	1,020	NA ²	1,976
Total Dissolved Organic Carbon	"	7	5	27
Cl ⁻	"	154	1,056	566
SO ₄ ⁼	"	122	206	198
TKN	"	< 1	< 1	< 1
NH ₃ -N	"	1	< 0.1	1
NO ₂ + NO ₃ -N	"	< 0.15	0.82	< 0.15
Total P	"	< 0.20	< 0.20	< 0.20
Alkalinity as CaCO ₃	"	101	608	318
Al	"	< 1.0	< 1.0	< 1.0
Ca	"	110	152	294
Cd	"	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	< 0.005
Fe	"	< 0.1	0.4	6
Hg	μg/L	< 0.20	< 0.20	< 0.20
K	mg/L	10	8	6
Mg	"	114	64	192
Mn	"	0.169	0.202	0.566
Na	"	66	276	130
Ni	"	< 0.005	< 0.005	< 0.005
Pb	"	< 0.02	< 0.02	< 0.02
Zn	"	0.02	< 0.01	< 0.01

¹pH analyzed beyond recommended holding time of 15 minutes.

²No analysis.