

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 06-81

122ND STREET AND STONY ISLAND AVENUE SOLIDS

MANAGEMENT AREA MONITORING DATA FOR

THIRD QUARTER 2006

December 2006

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

December 22, 2006

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: 122nd and Stony Island Avenue Solids Management Area - Stickney
WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for July,
August, and September 2006

The attached six tables contain the monitoring data for the 122nd and Stony Island Avenue Solids Management Area for July, August, and September 2006 as required by IEPA Operating Permit No. 2005-AO-4283.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on July 13, 2006

Table 2, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on August 9, 2006

Table 3, Analysis of Water from Lysimeters L-1 through L-4 at the 122nd and Stony Island Avenue Solids Management Area Sampled on September 6, 2006

Table 4, Analysis of Monthly Compositated Digested Biosolids Placed in the 122nd and Stony Island Avenue Solids Management Drying Area During July 2006

Table 5, Analysis of Monthly Compositated Digested Biosolids Placed in the 122nd and Stony Island Avenue Solids Management Drying Area During August 2006

Table 6, Analysis of Monthly Compositated Digested Biosolids Placed in the 122nd and Stony Island Avenue Solids Management Drying Area During September 2006

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WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for July,
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Biosolids were placed in the solids drying area during July, August, and September. No biosolids were removed from the solids drying area during this quarter.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:spy
Attachments

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

TABLE 1: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 13, 2006

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.6	7.5	7.5	7.7
EC	mS/m	268	422	266	185
Total Dissolved Solids	mg/L	2,074	3,948	2,868	1,194
Total Dissolved Organic Carbon	"	33	13	42	17
Cl ⁻	"	212	648	80	255
SO ₄ ⁼	"	284	955	692	39
TKN	"	40	6.6	10	5.5
NH ₃ -N	"	36	4.4	5.8	3.7
NO ₂ + NO ₃ -N	"	0.12	0.46	0.21	0.09
Total P	"	< 0.05	< 0.05	< 0.05	< 0.05
Alkalinity as CaCO ₃	"	1,054	389	1,098	526
Al	"	0.044	0.037	0.050	0.030
B	"	4.74	1.32	0.456	1.40
Ca	"	288	318	514	134
Cd	"	0.0007	0.0017	< 0.0004	0.0004
Cr	"	0.0008	0.0007	0.0007	0.0008
Cu	"	< 0.002	< 0.002	< 0.002	< 0.002
Fe	"	0.841	3.21	5.31	0.381
Hg	μg/L	< 0.05	< 0.05	< 0.05	< 0.05
K	mg/L	31	61	5	11
Mg	"	139	192	165	62.3
Mn	"	0.3228	2.244	0.5703	0.1321
Na	"	168	472	44	192
Ni	"	< 0.0004	0.0067	< 0.0004	0.0008
Pb	"	0.007	0.009	0.004	0.006
Zn	"	0.005	0.004	0.006	0.005

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 9, 2006

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.4	7.3	7.3	7.6
EC	mS/m	288	413	271	170
Total Dissolved Solids	mg/L	2,050	4,218	2,952	1,228
Total Dissolved Organic Carbon	"	33	12	42	17
Cl ⁻	"	215	620	90	268
SO ₄ ⁼	"	236	1,341	699	37
TKN	"	38	5.4	10	5.0
NH ₃ -N	"	25	3.3	5.8	3.4
NO ₂ + NO ₃ -N	"	0.22	0.12	0.91	0.16
Total P	"	< 0.05	< 0.05	< 0.05	< 0.05
Alkalinity as CaCO ₃	"	1,117	376	1,118	554
Al	"	0.043	0.038	0.053	0.020
B	"	4.34	1.34	0.456	1.30
Ca	"	282	338	526	132
Cd	"	0.0005	0.0025	0.0005	0.0007
Cr	"	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cu	"	< 0.002	< 0.002	< 0.002	< 0.002
Fe	"	0.210	3.06	4.20	0.179
Hg	μg/L	< 0.05	< 0.05	< 0.05	< 0.05
K	mg/L	30	60	7	11
Mg	"	133	194	168	60.1
Mn	"	0.3078	2.577	0.6506	0.1213
Na	"	163	430	52	190
Ni	"	0.0011	0.0082	0.0013	0.0020
Pb	"	< 0.004	< 0.004	< 0.004	< 0.004
Zn	"	0.006	0.006	0.005	0.003

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 6, 2006

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.5	7.3	7.4	7.7
EC	mS/m	268	403	295	189
Total Dissolved Solids	mg/L	2,064	3,732	3,110	1,292
Total Dissolved Organic Carbon	"	34	13	42	18
Cl ⁻	"	244	634	107	292
SO ₄ ⁼	"	251	1,125	773	58
TKN	"	42	4.7	9.7	5.8
NH ₃ -N	"	36	2.6	5.6	3.5
NO ₂ + NO ₃ -N	"	0.24	0.12	0.06	0.13
Total P	"	0.09	< 0.05	< 0.05	< 0.05
Alkalinity as CaCO ₃	"	1,300	452	1,260	636
Al	"	0.049	0.037	0.060	0.034
B	"	4.79	1.73	0.469	1.39
Ca	"	293	298	523	140
Cd	"	0.0008	0.0018	0.0007	0.0004
Cr	"	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cu	"	< 0.002	< 0.002	< 0.002	< 0.002
Fe	"	0.603	9.67	4.51	0.302
Hg	μg/L	< 0.05	< 0.05	< 0.05	< 0.05
K	mg/L	31	62	7	12
Mg	"	140	186	171	65.3
Mn	"	0.3308	2.950	0.6489	0.1333
Na	"	171	388	53	190
Ni	"	0.0011	0.0065	< 0.0004	0.0019
Pb	"	< 0.004	< 0.004	< 0.004	0.005
Zn	"	0.006	0.005	0.015	0.004

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING JULY 2006

Parameter	Unit	Concentration*
pH		7.9
Total Solids	%	26.0
Total Volatile Solids	%	48.9
TKN	mg/kg	40,570
NH ₃ -N	"	4,486

*Values for one sample only.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2006

Parameter	Unit	Concentration*
pH		8.3
Total Solids	%	25.8
Total Volatile Solids	%	48.4
TKN	mg/kg	36,940
NH ₃ -N	"	3,587

*Values for one sample only.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE 122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2006

Parameter	Unit	Concentration*
pH		8.0
Total Solids	%	29.4
Total Volatile Solids	%	43.2
TKN	mg/kg	35,248
NH ₃ -N	"	3,944

*Values for one sample only.