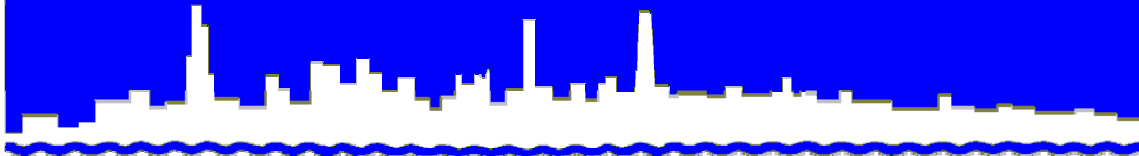


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 07-17

122ND STREET AND STONY ISLAND AVENUE SOLIDS

MANAGEMENT AREA MONITORING DATA FOR

FOURTH QUARTER 2006

MARCH 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

March 29, 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: 122nd and Stony Island Avenue Solids Management Area - Stickney
WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for October,
November, and December 2006

The attached seven tables contain the monitoring data for the 122nd and Stony Island Avenue Solids Management Area for October, November, and December 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 October 4, 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 November 1, 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 December 13, 2006

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

Table 5, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the 122nd and Stony Island Avenue Solids Management Drying Area During October 2006

Subject: 122nd and Stony Island Avenue Solids Management Area - Stickney WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for October, November, and December 2006

Table 6, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the 122nd and Stony Island Avenue Solids Management Drying Area During November 2006

Table 7, Analysis of Monthly Compositated Processed Digested Biosolids Removed from the 122nd and Stony Island Avenue Solids Management Drying Area During December 2006

Biosolids were placed in the solids drying area during October 2006. Biosolids were removed from the solids drying area during October, November, and December 2006.

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

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1

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

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.4	7.3	7.4	7.7
EC	mS/m	318	379	292	190
Total Dissolved Solids	mg/L	2,086	3,188	2,722	1,244
Total Diss. Org. Carbon	"	35	12	42	17
Cl ⁻	"	237	631	94	291
SO ₄ ⁼	"	223	873	667	21
TKN	"	37	2.6	9.5	4.9
NH ₃ -N	"	33	1.2	5.6	3.1
NO ₂ + NO ₃ -N	"	0.34	0.05	5.0	0.40
Total P	"	0.05	<0.05	<0.05	<0.05
Alkalinity as CaCO ₃	"	1,285	450	1,258	624
Al	"	0.035	0.020	0.037	0.021
B	"	4.92	1.72	0.457	1.53
Ca	"	292	260	524	121
Cd	"	0.0005	0.0017	0.0005	0.0004
Cr	"	<0.0005	<0.0005	<0.0005	<0.0005
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	0.649	9.38	4.60	0.066
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	31	59	6	15
Mg	"	138	160	166	60.4
Mn	"	0.3391	2.776	0.5816	0.1181
Na	"	171	362	44	204
Ni	"	0.0011	0.0057	0.0009	0.0022
Pb	"	<0.004	<0.004	<0.004	<0.004
Zn	"	0.005	0.004	0.003	0.003

¹pH analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 2

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

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.9	7.5		7.9
EC	mS/m	274	325		185
Total Dissolved Solids	mg/L	1,740	2,626		1,248
Total Diss. Org. Carbon	"	34	12		18
Cl ⁻	"	259	621		300
SO ₄ ⁼	"	238	588		23
TKN	"	35	2.4		4.5
NH ₃ -N	"	31	0.88		2.7
NO ₂ + NO ₃ -N	"	0.95	0.24	L	0.83
Total P	"	0.15	0.08	Y	0.07
Alkalinity as CaCO ₃	"	1,038	460	S I	656
Al	"	0.043	0.025	M	0.017
B	"	4.53	1.67	E	1.50
Ca	"	271	203	T	122
Cd	"	0.0004	0.0018	E	<0.0004
Cr	"	<0.0005	<0.0005	R	<0.0005
Cu	"	<0.002	<0.002	D	<0.002
Fe	"	0.496	4.51	R	0.092
Hg	μg/L	<0.05	<0.05	Y	<0.05
K	mg/L	30	56		15
Mg	"	132	126		60.9
Mn	"	0.4968	2.370		0.1147
Na	"	169	342		199
Ni	"	0.0012	0.0054		0.0028
Pb	"	<0.004	<0.004		<0.004
Zn	"	0.007	0.013		0.014

¹pH analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 3

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

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH ¹		7.5	7.5	7.4	7.9
EC	mS/m	290	279	282	185
Total Dissolved Solids	mg/L	1,992	2,104	2,694	1,194
Total Diss. Org. Carbon	"	37	12	43	17
Cl ⁻	"	216	538	95	283
SO ₄ ⁼	"	204	478	757	21
TKN	"	37	1.9	9.3	3.3
NH ₃ -N	"	32	0.68	5.2	2.0
NO ₂ + NO ₃ -N	"	0.33	0.04	0.11	0.46
Total P	"	0.09	0.08	0.08	0.08
Alkalinity as CaCO ₃	"	1,249	391	1,257	612
Al	"	0.066	0.044	0.090	0.034
B	"	4.36	1.33	0.479	1.48
Ca	"	286	160	515	119
Cd	"	<0.0004	0.0015	<0.0004	<0.0004
Cr	"	0.0010	0.0016	0.0010	0.0010
Cu	"	<0.002	<0.002	<0.002	<0.002
Fe	"	0.271	1.73	2.98	0.081
Hg	μg/L	<0.05	<0.05	<0.05	<0.05
K	mg/L	29	49	6	15
Mg	"	135	96.6	164	60.5
Mn	"	0.3504	1.863	0.5241	0.1100
Na	"	157	314	45	195
Ni	"	<0.0004	0.0041	0.0004	0.0010
Pb	"	<0.004	0.007	<0.004	0.007
Zn	"	0.003	0.003	0.006	0.002

¹pH analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 4

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

Parameter	Unit	Concentration*
pH		7.2
Total Solids	%	27.7
Total Volatile Solids	%	46.8
TKN	mg/kg	35,317
NH ₃ -N	"	3,835

*Values for one sample only.

**Total volatile solids as a percentage of total solids.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5

ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
BIOSOLIDS REMOVED FROM THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT DRYING AREA DURING OCTOBER 2006

Parameter	Unit	Concentration*
pH		6.1
Total Solids	%	63.4
Total Volatile Solids	%	40.7
TKN	mg/kg	22,821
NH ₃ -N	"	371
Total P	"	22,654
Al	"	22,395
As	"	<0.9
Ca	"	40,065
Cd	"	5
Cr	"	183
Cu	"	445
Fe	"	19,343
Hg	"	2.8
K	"	3,461
Mg	"	18,089
Mn	"	526
Mo	"	16
Na	"	380
Ni	"	51
Pb	"	161
Se	"	<0.7
Zn	"	1,053

*Values are the means of two samples.

**Total volatile solids as a percentage of total solids.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 6

ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
BIOSOLIDS REMOVED FROM THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT DRYING AREA DURING NOVEMBER 2006

Parameter	Unit	Concentration*
pH		6.3
Total Solids	%	65.1
Total Volatile Solids	%	39.4
TKN	mg/kg	19,418
NH ₃ -N	"	255
Total P	"	18,948
Al	"	25,489
As	"	2
Ca	"	41,493
Cd	"	5
Cr	"	213
Cu	"	432
Fe	"	20,467
Hg	"	1.4
K	"	4,704
Mg	"	18,547
Mn	"	507
Mo	"	16
Na	"	474
Ni	"	51
Pb	"	162
Se	"	<0.7
Zn	"	1,052

*Values are the means of five samples.

**Total volatile solids as a percentage of total solids.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7

ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED
BIOSOLIDS REMOVED FROM THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT DRYING AREA DURING DECEMBER 2006

Parameter	Unit	Concentration*
pH		6.1
Total Solids	%	60.9
Total Volatile Solids	%	36.6
TKN	mg/kg	16,603
NH ₃ -N	"	177
Total P	"	21,669
Al	"	25,697
As	"	<0.9
Ca	"	40,529
Cd	"	5
Cr	"	332
Cu	"	429
Fe	"	20,896
Hg	"	1.7
K	"	4,745
Mg	"	18,424
Mn	"	572
Mo	"	17
Na	"	419
Ni	"	60
Pb	"	180
Se	"	0.8
Zn	"	980

*Values are the means of five samples.

**Total volatile solids as a percentage of total solids.