MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 09-01

CALUMET EAST SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2008

JANUARY 2009

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

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January 9, 2009

Mr. S. Allan 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: Calumet East Solids Management Area – Calumet Water Reclamation Plant, Contract No. 85-273-2P, L170401, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

The attached nine tables contain the monitoring data for the Calumet East Solids Management Area (SMA) for July, August, and September, 2008 as required by IEPA Operating Permit No. 2005-AO-4281-1.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1N through L-6 at the Calumet East SMA Sampled on July 9, 2008

Table 2, Analysis of Water from Lysimeters L-1N through L-6 at the Calumet East SMA Sampled on August 6, 2008

Table 3, Analysis of Water from Lysimeters L-1N through L-6 at the Calumet East SMA Sampled on September 3, 2008

Table 4, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet East Solids Management Drying Area During July 2008

Table 5, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet East Solids Management Drying Area During August 2008

Subject: Calumet East Solids Management Area – Calumet Water Reclamation Plant, Contract No. 85-273-2P, L170401, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

Table 6, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet East Solids Management Drying Area During September 2008

Table 7, Analysis of Monthly Composited Processed Digest Biosolids Removed from the Calumet East Solids Management Drying Area During July 2008

Table 8, Analysis of Monthly Composited Processed Digest Biosolids Removed from the Calumet East Solids Management Drying Area During August 2008

Table 9, Analysis of Monthly Composited Processed Digest Biosolids Removed from the Calumet East Solids Management Drying Area During September 2008

Biosolids were placed in and removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

LK:PL:kq
Attachments
cc: Mr. R. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel

TABLE 1: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N-1 THROUGH L-3 AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON JULY 1, 2008

Parameter	Unit	Lysimeter No.		
		L-1N-1	L-2	L-3
pH[2]		7.4	7.2	7.3
EC	mS/m	271	298	238
Total Dissolved Solids	mg/L	1,528	2,460	1,916
Total Diss. Org. Carbon	"	40	3	6
Cl^-	"	102	304	136
$SO_4^=$	"	4	684	265
TKN	"	9	0.4	0.5
NH_3-N	"	5	<0.1	<0.1
$NO_2 + NO_3$-N	"	0.5	0.4	0.5
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,335	500	930
Al	"	0.074	0.081	0.066
Ca	"	312	428	306
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	5.3	<0.02	<0.02
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	4	<1	<1
Mg	"	197	107	130
Mn	"	0.384	0.072	0.451
Na	"	51	96	58
Ni	"	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N-1 THROUGH L-3 AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON JULY 16, 2008

Parameter	Unit	Lysimeter No. L-1N-1	L-2	L-3
pH[2]		7.3	7.1	7.2
EC	mS/m	268	270	244
Total Dissolved Solids	mg/L	1,868	2,208	1,896
Total Diss. Org. Carbon	"	37	2	6
Cl^-	"	96	277	103
$SO_4^=$	"	10	702	270
TKN	"	9	0.4	0.6
NH_3-N	"	5	<0.1	<0.1
$NO_2 + NO_3$-N	"	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	<15	442	994
Al	"	0.053	0.063	0.060
Ca	"	303	405	337
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	13	<0.02	<0.02
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	4	<1	<1
Mg	"	186	100	144
Mn	"	0.374	0.014	0.441
Na	"	48	86	43
Ni	"	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N-1 THROUGH L-3 AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON JULY 30, 2008

Parameter	Unit	Lysimeter No. L-1N-1	L-2	L-3
pH[2]		7.5	7.0	7.3
EC	mS/m	270	292	251
Total Dissolved Solids	mg/L	1,692	2,764	2,104
Total Diss. Org. Carbon	"	39	2	6
Cl^-	"	94	291	103
$SO_4^=$	"	9	741	257
TKN	"	8	0.4	0.7
NH_3-N	"	5	<0.1	<0.1
$NO_2 + NO_3$-N	"	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,345	471	1,011
Al	"	0.051	0.054	0.057
Ca	"	312	439	337
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	9.1	<0.02	0.03
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	4	<1	<1
Mg	"	186	106	143
Mn	"	0.366	0.023	0.413
Na	"	48	91	43
Ni	"	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N-1 THROUGH L-3 AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 14, 2008

Parameter	Unit	Lysimeter No. L-1N-1	L-2	L-3
pH[2]		7.6	7.2	7.3
EC	mS/m	271	271	245
Total Dissolved Solids	mg/L	1,656	2,608	2,088
Total Diss. Org. Carbon	"	39	2	6
Cl^-	"	95	293	102
$SO_4^=$	"	3	735	268
TKN	"	9	0.4	0.4
NH_3-N	"	5	<0.1	<0.1
$NO_2 + NO_3$-N	"	<0.1	<0.1	0.3
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,390	461	987
Al	"	0.059	0.073	0.059
Ca	"	309	416	331
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	13	<0.02	<0.02
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	4	<1	<1
Mg	"	183	103	141
Mn	"	0.386	0.012	0.415
Na	"	47	87	41
Ni	"	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 5: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N-1 THROUGH L-3 AT THE HARLEM AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 27, 2008

Parameter	Unit	Lysimeter No.		
		L-1N-1	L-2	L-3
pH[2]		7.4	7.0	7.2
EC	mS/m	252	247	250
Total Dissolved Solids	mg/L	1,040	2,768	2,116
Total Diss. Org. Carbon	"	28	4	9
Cl^-	"	47	276	90
$SO_4^=$	"	<2	630	229
TKN	"	5	2	1
NH_3-N	"	3	<0.1	0.4
$NO_2 + NO_3$-N	"	<0.1	0.4	0.3
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	708	426	1,104
Al	"	0.038	0.064	0.054
Ca	"	155	394	322
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	4.2	<0.02	<0.02
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	2	<1	<1
Mg	"	92	97	146
Mn	"	0.191	0.006	0.415
Na	"	23	80	37
Ni	"	<0.002	0.006	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 6: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N-1 THROUGH L-3 AT THE HARLEM AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 10, 2008

Parameter	Unit	Lysimeter No.		
		L-1N-1	L-2	L-3
pH[2]		7.6	7.2	7.4
EC	mS/m	226	268	226
Total Dissolved Solids	mg/L	1,564	2,568	2,120
Total Diss. Org. Carbon	"	34	2	7
Cl^-	"	105	290	97
$SO_4^=$	"	25	690	267
TKN	"	10	0.5	0.5
NH_3-N	"	7	<0.1	<0.1
$NO_2 + NO_3$-N	"	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,163	429	1,041
Al	"	<0.035	0.135	0.039
Ca	"	267	403	325
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	0.91	<0.02	0.05
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	4	<1	<1
Mg	"	157	98	142
Mn	"	0.323	0.008	0.283
Na	"	50	80	37
Ni	"	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 7: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N-1 THROUGH L-3 AT THE HARLEM AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 24, 2008

Parameter	Unit	Lysimeter No. L-1N-1	L-2	L-3
pH[2]		7.2	6.9	7.1
EC	mS/m	265	308	254
Total Dissolved Solids	mg/L	1,760	2,656	1,860
Total Diss. Org. Carbon	"	40	3	5
Cl^-	"	91	282	134
$SO_4^=$	"	5	806	325
TKN	"	8	0.6	0.5
NH_3-N	"	5	<0.1	<0.1
$NO_2 + NO_3$-N	"	<0.1	0.9	0.3
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,317	485	860
Al	"	0.076	0.100	0.080
Ca	"	285	434	311
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	6.1	<0.02	<0.02
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	3	<1	<1
Mg	"	168	107	123
Mn	"	0.370	0.112	0.366
Na	"	43	90	52
Ni	"	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 8: ANALYSIS[1] OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

Parameter	Unit	Concentration
pH		8.3
Total Solids	%	21.7
Total Volatile Solids[2]	%	46.2
TKN	mg/kg	41,143
NH_3-N	"	11,792

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of three samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 9: ANALYSIS[1] OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

Parameter	Unit	Concentration
pH		8.1
Total Solids	%	23.3
Total Volatile Solids[2]	%	47.5
TKN	mg/kg	38,439
NH_3-N	,,	13,333

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of two samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 10: ANALYSIS[1] OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

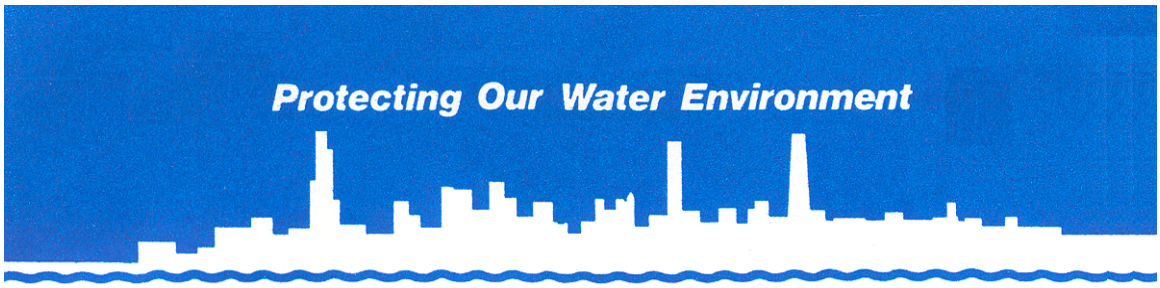
Parameter	Unit	Concentration
pH		7.5
Total Solids	%	77.8
Total Volatile Solids[2]	%	41.4
TKN	mg/kg	28,844
NH_3-N	,,	4,910
Total P	,,	23,878
Al	,,	18,021
As	,,	<20
Ca	,,	41,143
Cd	,,	4
Cr	,,	174
Cu	,,	421
Fe	,,	16,717
Hg	,,	0.95
K	,,	2,635
Mg	,,	18,280
Mn	,,	559
Mo	,,	15
Na	,,	<800
Ni	,,	50
Pb	,,	131
Se	,,	<28.57
Zn	,,	896

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of two samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 11: ANALYSIS[1] OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE HARLEM AVENUE SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

Parameter	Unit	Concentration
pH		7.2
Total Solids	%	48.5
Total Volatile Solids[2]	%	42.0
TKN	mg/kg	33,594
NH_3-N	”	7,091
Total P	”	18,262
Al	”	18,516
As	”	<20
Ca	”	39,144
Cd	”	4
Cr	”	154
Cu	”	408
Fe	”	16,812
Hg	”	0.96
K	”	2,652
Mg	”	17,222
Mn	”	577
Mo	”	13
Na	”	<800
Ni	”	45
Pb	”	124
Se	”	<28.57
Zn	”	855

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of six samples.
[2]Total volatile solids as a percentage of total solids.



Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 08-

LAWNDALE AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2008

JANUARY 2009

Protecting Our Water Environment

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

January 9, 2009

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 WRP, Contract No. 80-159-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

The attached ten tables contain the monitoring data for the Lawndale Avenue Solids Management Area for July, August, and September 2008 as required by IEPA Operating Permit No. 2005-AO-4283. In a letter dated January 19, 2007, the IEPA granted permission to terminate the monitoring of lysimeters L-7 and L-8. Beginning October 2007, they also granted permission to terminate the monitoring of lysimeters L-3, L-4, and L-5. 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 Monitoring Wells M-11 through M-15 at the Lawndale Avenue Solids Management Area Sampled on July 23, 2008

Table 2, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on July 1, 2008

Table 3, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on August 14, 2008

Table 4, Analysis of Water from Lysimeters L-1 through L-9N at the Lawndale Avenue Solids Management Area Sampled on September 10, 2008

Subject: Lawndale Avenue Solids Management Area - Stickney WRP, Contract No. 80-159-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

Table 5, Analysis of Monthly Composited Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During July 2008

Table 6, Analysis of Monthly Composited Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During August 2008

Table 7, Analysis of Monthly Composited Digested Biosolids Placed in the Lawndale Avenue Solids Management Drying Area During September 2008

Table 8, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During July 2008

Table 9, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During August 2008

Table 10, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During September 2008

Biosolids were placed in and removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:TCG:AC:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

Subject: Lawndale Avenue Solids Management Area - Stickney WRP, Contract No. 80-159-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

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Table 9, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During August 2008

Table 10, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Lawndale Avenue Solids Management Drying Area During September 2008

Biosolids were placed in and removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

TABLE 1: ANALYSIS[1] OF WATER FROM MONITORING WELLS M-11 THROUGH M-15 AT THE LAWNDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON JULY 23, 2008

Parameter	Unit	Monitoring Well No.				
		M-11	M-12	M-13	M-14	M-15
pH[2]		7.7	7.7	7.6	7.8	7.5
EC	mS/m	49	68	89	50	105
Total Dissolved Solids	mg/L	648	800	1,304	552	1,668
Total Diss. Org. Carbon	"	1	1	1	1	1
Cl^-	"	<10	13	<10	<10	<10
$SO_4^=$	"	184	332	648	132	850
TKN	"	0.7	<0.2	0.4	0.3	0.5
NH_3-N	"	0.7	0.2	0.4	0.3	0.5
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	<0.1	<0.1
Total P	"	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	326	279	296	297	327
Al	"	<0.035	<0.035	0.040	<0.035	0.054
As	"	<0.05	<0.05	<0.05	<0.05	<0.05
B	"	1.3	1.7	1.4	1.2	1.1
Ca	"	87	78	161	73	234
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	<0.02	<0.02	<0.02	<0.02	0.47
Hg	μg/L	<0.25	<0.25	<0.25	<0.25	<0.25
K	mg/L	8	9	10	8	10
Mg	"	42	37	76	40	105
Mn	"	0.047	0.005	0.008	0.003	0.022
Na	"	55	133	88	41	63
Ni	"	<0.002	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1	<0.1
Zn	"	0.46	1.9	0.35	0.48	2.6
FC	MPN*	<1	<1	<1	<1	<1
Static H_2O Elev.	ft	628	632	629	623	605

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.
*MPN = Most probable number per 100 mL.

TABLE 2: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 1, 2008

Parameter	Unit	Lysimeter No. L-1	L-2	L-3N	L-4N	L-5N
pH[2]		7.5	7.7	7.4	7.6	7.6
EC	mS/m	106	300	259	356	597
Total Dissolved Solids	mg/L	1,456	1,148	1,788	3,040	5,388
Total Diss. Org. Carbon	"	8	1	22	6	3
Cl^-	"	48	214	127	48	804
$SO_4^=$	"	522	266	233	1,460	1,605
TKN	"	5	0.9	3	6	3
NH_3-N	"	4	<0.1	1	5	2
$NO_2 + NO_3$-N	"	0.4	0.8	0.7	1	0.4
Total P	"	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	489	188	1,114	598	491
Al	"	0.104	0.042	0.073	0.103	0.091
As	"	<0.05	<0.05	<0.05	<0.05	<0.05
B	"	0.53	0.09	0.08	0.13	0.26
Ca	"	224	120	346	562	535
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	2.8	0.04	7.2	0.44	7.7
Hg	μg/L	<0.25	<0.25	<0.25	<0.25	<0.25
K	mg/L	6	<1	2	6	21
Mg	"	101	53	139	146	262
Mn	"	0.083	0.002	0.737	0.932	0.253
Na	"	45	128	79	146	479
Ni	"	<0.002	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	0.02	<0.01

TABLE 2 (Continued): ANALYSIS[1] OF WATER FROM LYSIMETERS L-1 THROUGH L-9N AT THE LAWNDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON JULY 1, 2008

Parameter	Unit	Lysimeter No. L-6	L-6N	L-7N	L-8N	L-9N
pH[2]		7.7	7.4	7.8	7.7	7.9
EC	mS/m	201	348	158	275	279
Total Dissolved Solids	mg/L	NA	3,264	1,244	2,064	1,796
Total Diss. Org. Carbon	"	NA	50	8	12	25
Cl^-	"	NA	78	174	348	205
$SO_4^=$	"	NA	1,287	166	224	270
TKN	"	NA	19	0.9	5	2
NH_3-N	"	NA	13	0.2	4	0.7
$NO_2 + NO_3$-N	"	NA	0.7	1	0.4	0.8
Total P	"	NA	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	NA	822	400	704	982
Al	"	NA	0.102	0.038	0.052	0.054
As	"	NA	<0.05	<0.05	<0.05	<0.05
B	"	NA	0.18	0.24	0.21	0.15
Ca	"	NA	625	138	237	243
Cd	"	NA	<0.002	<0.002	<0.002	<0.002
Cr	"	NA	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	NA	<0.01	<0.01	<0.01	<0.01
Fe	"	NA	22	0.35	1.7	0.78
Hg	μg/L	NA	<0.25	<0.25	<0.25	<0.25
K	mg/L	NA	7	7	5	5
Mg	"	NA	150	75	108	138
Mn	"	NA	0.555	0.082	0.365	1.04
Na	"	NA	76	75	195	214
Ni	"	NA	0.006	<0.002	<0.002	<0.002
Pb	"	NA	<0.02	<0.02	<0.02	<0.02
Se	"	NA	<0.1	<0.1	<0.1	<0.1
Zn	"	NA	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.
NA = No analysis; insufficient sample.

TABLE 3: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 14, 2008

Parameter	Unit	Lysimeter No.				
		L-1	L-2	L-3N	L-4N	L-5N
pH[2]		7.4	7.7	7.3	7.4	7.4
EC	mS/m	170	323	269	322	523
Total Dissolved Solids	mg/L	1,592	2,660	2,144	3,160	5,332
Total Diss. Org. Carbon	"	7	1	22	4	2
Cl^-	"	47	476	125	44	581
$SO_4^=$	"	573	672	278	1,500	1,668
TKN	"	5	0.5	3	6	3
NH_3-N	"	4	0.2	1	5	2
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	0.4	<0.1
Total P	"	<0.25	<0.25	0.34	<0.25	<0.25
Alkalinity as $CaCO_3$	"	451	385	1,138	603	457
Al	"	0.045	0.047	0.065	0.078	0.078
As	"	<0.05	<0.05	<0.05	<0.05	<0.05
B	"	0.45	0.16	0.04	0.11	0.24
Ca	"	229	269	369	553	523
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	4.7	0.28	9.5	4.3	10
Hg	μg/L	<0.25	<0.25	<0.25	<0.25	<0.25
K	mg/L	5	4	<1	6	19
Mg	"	95	121	135	131	250
Mn	"	0.082	0.024	0.782	0.859	0.209
Na	"	43	282	80	125	462
Ni	"	<0.002	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE 3 (Continued): ANALYSIS[1] OF WATER FROM LYSIMETERS L-1 THROUGH L-9N AT THE LAWNDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 14, 2008

Parameter	Unit	Lysimeter No. L-6	L-6N	L-7N	L-8N	L-9N
pH[2]		NA	7.3	7.8	7.7	7.6
EC	mS/m	NA	345	124	238	252
Total Dissolved Solids	mg/L	NA	3,564	1,048	1,916	1,864
Total Diss. Org. Carbon	"	NA	50	8	11	29
Cl^-	"	NA	74	147	347	173
$SO_4^=$	"	NA	1,323	88	168	260
TKN	"	0.6	19	1	5	3
NH_3-N	"	<0.1	12	0.4	3	0.9
$NO_2 + NO_3$-N	"	0.5	<0.1	<0.1	<0.1	0.3
Total P	"	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	NA	791	394	648	1,016
Al	"	NA	0.089	<0.035	0.044	0.041
As	"	NA	<0.05	<0.05	<0.05	<0.05
B	"	NA	0.13	0.21	0.27	0.28
Ca	"	NA	628	119	206	246
Cd	"	NA	<0.002	<0.002	<0.002	<0.002
Cr	"	NA	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	NA	<0.01	<0.01	<0.01	<0.01
Fe	"	NA	33	0.82	5.8	5.4
Hg	μg/L	NA	<0.25	<0.25	<0.25	<0.25
K	mg/L	NA	7	5	5	5
Mg	"	NA	145	65	99	139
Mn	"	NA	0.580	0.093	0.338	0.456
Na	"	NA	72	61	195	183
Ni	"	NA	0.007	<0.002	<0.002	<0.002
Pb	"	NA	<0.02	<0.02	<0.02	<0.02
Se	"	NA	<0.1	<0.1	<0.1	<0.1
Zn	"	NA	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.
NA = No analysis; insufficient sample.

TABLE 4: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1 THROUGH L-9N AT THE LAWNDALE AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 10, 2008

Parameter	Unit	Lysimeter No. L-1	L-2	L-3N	L-4N	L-5N
pH[2]		7.5	7.8	7.4	7.5	7.6
EC	mS/m	168	161	232	293	489
Total Dissolved Solids	mg/L	1,612	1,412	2,276	3,328	5,324
Total Diss. Org. Carbon	"	7	1	22	9	2
Cl^-	"	47	223	120	43	583
$SO_4^=$	"	507	283	306	1,500	1,704
TKN	"	5	0.3	2	5	3
NH_3-N	"	4	<0.1	1	4	2
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	1	<0.1
Total P	"	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	436	201	1,100	587	444
Al	"	0.041	<0.035	0.048	0.057	0.047
As	"	<0.05	<0.05	<0.05	<0.05	<0.05
B	"	0.48	0.12	0.08	0.15	0.28
Ca	"	215	123	372	585	531
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.003	<0.003	<0.003	<0.003	<0.003
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	4.7	<0.02	8.2	4.2	4.5
Hg	μg/L	<0.25	<0.25	<0.25	<0.25	<0.25
K	mg/L	5	<1	2	6	19
Mg	"	93	55	133	128	247
Mn	"	0.068	0.016	0.762	0.801	0.213
Na	"	41	127	81	117	446
Ni	"	<0.002	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE 4 (Continued): ANALYSIS[1] OF WATER FROM LYSIMETERS L-1 THROUGH L-9N AT THE LAWNDALE AVENUE SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 10, 2008

Parameter	Unit	Lysimeter No. L-6	L-6N	L-7N	L-8N	L-9N
pH[2]			7.5	7.8	7.8	7.8
EC	mS/m		345	159	223	254
Total Dissolved Solids	mg/L		NA	1,228	1,920	1,944
Total Diss. Org. Carbon	"		53	9	8	25
Cl^-	"		108	121	348	189
$SO_4^=$	"		1,449	126	172	275
TKN	"		18	1	4	2
NH_3-N	"		12	0.7	3	0.7
$NO_2 + NO_3$-N	"		<0.1	<0.1	<0.1	0.3
Total P	"		<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"		714	389	565	900
Al	"		0.059	<0.035	<0.035	<0.035
As	"		<0.05	<0.05	<0.05	<0.05
B	"		0.22	0.25	0.21	0.15
Ca	"		661	132	193	223
Cd	"		<0.002	<0.002	<0.002	<0.002
Cr	"		<0.003	<0.003	<0.003	<0.003
Cu	"		<0.01	<0.01	<0.01	<0.01
Fe	"		11	0.84	0.24	0.41
Hg	μg/L		<0.25	<0.25	<0.25	<0.25
K	mg/L		8	6	5	5
Mg	"		156	62	90	125
Mn	"		0.582	0.093	0.290	0.357
Na	"		99	52	190	188
Ni	"		0.006	<0.002	<0.002	<0.002
Pb	"		<0.02	<0.02	<0.02	<0.02
Se	"		<0.1	<0.1	<0.1	<0.1
Zn	"		<0.01	<0.01	<0.01	<0.01

LYSIMETER

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.
NA = No analysis; insufficient sample.

TABLE 5: ANALYSIS[1] OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE LAWNDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

Parameter	Unit	Concentration
pH		8.2
Total Solids	%	20.6
Total Volatile Solids[2]	%	45.6
TKN	mg/kg	45,426
NH_3-N	,,	14,628

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of four samples.

[2]Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS[1] OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE LAWNDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

Parameter	Unit	Concentration
pH		7.9
Total Solids	%	24.0
Total Volatile Solids[2]	%	43.1
TKN	mg/kg	41,037
NH_3-N	,,	13,036

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of eight samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 7: ANALYSIS[1] OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE LAWNDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2008

Parameter	Unit	Concentration
pH		7.6
Total Solids	%	16.6
Total Volatile Solids[2]	%	44.8
TKN	mg/kg	36,811
NH_3-N	,,	11,555

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of five samples.

[2]Total volatile solids as a percentage of total solids.

TABLE 8: ANALYSIS[1] OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE LAWNDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

Parameter	Unit	Concentration
pH		6.6
Total Solids	%	75.7
Total Volatile Solids[2]	%	33.8
TKN	mg/kg	17,517
NH_3-N	,,	1,702
Total P	,,	18,071
Al	,,	18,396
As	,,	<14.29
Ca	,,	45,520
Cd	,,	5
Cr	,,	203
Cu	,,	400
Fe	,,	18,287
Hg	,,	<0.20
K	,,	2,646
Mg	,,	21,040
Mn	,,	551
Mo	,,	14
Na	,,	<800
Ni	,,	50
Pb	,,	135
Se	,,	<28.57
Zn	,,	879

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of eighteen samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 9: ANALYSIS[1] OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE LAWNDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

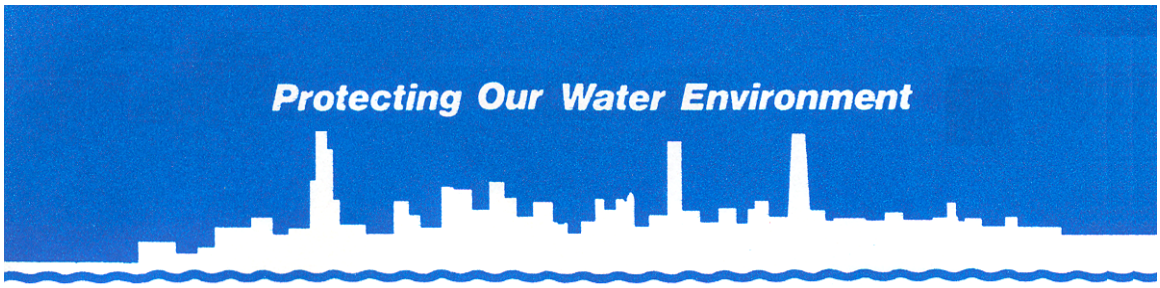
Parameter	Unit	Concentration
pH		6.7
Total Solids	%	59.6
Total Volatile Solids[2]	%	37.1
TKN	mg/kg	26,502
NH_3-N	,,	3,883
Total P	,,	20,513
Al	,,	18,720
As	,,	<20
Ca	,,	40,430
Cd	,,	4
Cr	,,	166
Cu	,,	412
Fe	,,	17,247
Hg	,,	<0.20
K	,,	2,618
Mg	,,	18,339
Mn	,,	548
Mo	,,	15
Na	,,	<800
Ni	,,	46
Pb	,,	133
Se	,,	<28.57
Zn	,,	875

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of seventeen samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 10: ANALYSIS[1] OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE LAWNDALE AVENUE SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2008

Parameter	Unit	Concentration
pH		7.1
Total Solids	%	51.8
Total Volatile Solids[2]	%	42.7
TKN	mg/kg	25,766
NH_3-N	”	4,527
Total P	”	19,170
Al	”	20,184
As	”	<10
Ca	”	41,955
Cd	”	3
Cr	”	166
Cu	”	392
Fe	”	17,826
Hg	”	<0.20
K	”	2,850
Mg	”	18,953
Mn	”	541
Mo	”	ND
Na	”	<800
Ni	”	46
Pb	”	144
Se	”	<8
Zn	”	874

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit. Values are the means of ten samples.
[2]Total volatile solids as a percentage of total solids.
ND = No data.



Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 08-

RIDGELAND AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2008

JANUARY 2009

Protecting Our Water Environment

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

January 9, 2009

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: Ridgeland Avenue Solids Management Area - Stickney WRP, Contract No. 89-202-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

The attached six tables contain the monitoring data for the Ridgeland Avenue Solids Management Area for July, August, and September 2008 as required by IEPA Operating Permit No. 2005-AO-4283. In a letter dated January 19, 2007, the IEPA granted permission to terminate the monitoring of lysimeters L-1, L-2, and L-3. Beginning October 2007, they also granted permission to terminate the monitoring of lysimeter L-4. 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-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on July 16, 2008

Table 2, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on July 30, 2008

Table 3, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on August 14, 2008

Table 4, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on August 27, 2008

Subject: Ridgeland Avenue Solids Management Area - Stickney WRP, Contract No. 89-202-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

Table 5, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 10, 2008

Table 6, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 24, 2008

No biosolids were placed in or removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:TCG:AC:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

Subject: Ridgeland Avenue Solids Management Area - Stickney WRP, Contract No. 89-202-2P, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

Table 5, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 10, 2008

Table 6, Analysis of Water from Lysimeters L-1N through L-4N at the Ridgeland Avenue Solids Management Area Sampled on September 24, 2008

No biosolids were placed in or removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

TABLE 1: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 16, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH[2]		7.4	7.5	7.5	7.6
EC	mS/m	514	292	229	284
Total Dissolved Solids	mg/L	5,248	2,328	2,208	2,484
Total Diss. Org. Carbon	"	3	6	2	2
Cl^-	"	518	294	386	415
$SO_4^=$	"	981	303	281	126
TKN	"	2	37	4	1
NH_3-N	"	1	35	4	0.7
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	605	768	398	325
Al	"	0.072	0.043	0.038	0.039
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	587	249	193	240
Cd	"	0.003	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.0	4.9	0.66	4.9
Hg	μg/L	<0.25	<0.25	<0.25	<0.25
K	mg/L	8	12	5	4
Mg	"	315	150	68	58
Mn	"	0.072	0.131	0.262	1.06
Na	"	170	103	209	244
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	0.02	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 30, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH[2]		7.3	7.4	7.6	7.4
EC	mS/m	527	277	246	295
Total Dissolved Solids	mg/L	5,848	2,252	1,944	2,520
Total Diss. Org. Carbon	"	3	7	1	2
Cl^-	"	565	270	425	588
$SO_4^=$	"	763	211	238	129
TKN	"	2	39	0.7	4
NH_3-N	"	1	37	0.5	4
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	<0.1
Total P	"	<0.25	<0.25	<0.25	0.35
Alkalinity as $CaCO_3$	"	606	810	353	360
Al	"	0.066	0.045	0.039	0.038
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	546	235	204	242
Cd	"	0.004	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.5	5.2	1.5	9.8
Hg	μg/L	<0.25	<0.25	<0.25	<0.25
K	mg/L	8	12	4	4
Mg	"	275	143	63	63
Mn	"	0.091	0.137	0.390	1.08
Na	"	177	102	234	255
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 14, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH[2]		7.3	7.5	7.6	7.5
EC	mS/m	468	277	247	275
Total Dissolved Solids	mg/L	5,616	2,196	1,848	1,956
Total Diss. Org. Carbon	"	3	6	2	3
Cl^-	"	582	213	50	151
$SO_4^=$	"	868	246	304	134
TKN	"	4	39	0.9	1
NH_3-N	"	3	36	0.3	0.7
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	<0.25	0.29
Alkalinity as $CaCO_3$	"	589	756	346	348
Al	"	0.075	0.037	<0.035	0.038
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	547	223	200	230
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	5.0	4.6	0.29	7.3
Hg	μg/L	<0.25	<0.25	<0.25	<0.25
K	mg/L	8	11	4	3
Mg	"	281	135	67	57
Mn	"	0.074	0.136	0.240	1.01
Na	"	171	103	218	263
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 27, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH[2]		7.2	7.4	7.4	7.4
EC	mS/m	536	298	266	288
Total Dissolved Solids	mg/L	6,268	2,304	2,032	2,132
Total Diss. Org. Carbon	"	2	6	2	2
Cl^-	"	<10	275	390	571
$SO_4^=$	"	910	257	268	117
TKN	"	3	36	0.9	1
NH_3-N	"	2	35	0.6	0.6
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	0.76	<0.25
Alkalinity as $CaCO_3$	"	606	791	381	343
Al	"	0.085	0.045	0.038	0.039
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	544	228	195	211
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	4.6	5.7	0.68	6.3
Hg	μg/L	<0.25	<0.25	<0.25	<0.25
K	mg/L	8	11	4	3
Mg	"	281	135	68	55
Mn	"	0.077	0.152	0.257	0.895
Na	"	170	103	215	261
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 5: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 10, 2008

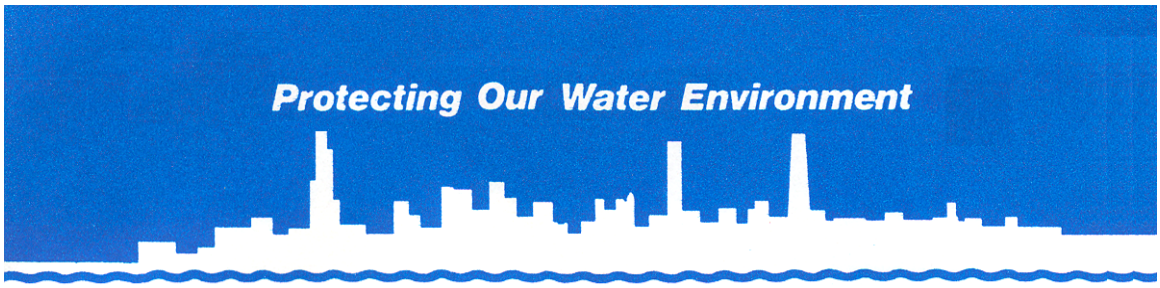
Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH[2]		7.4	7.5	7.7	7.6
EC	mS/m	491	277	253	270
Total Dissolved Solids	mg/L	5,256	2,368	1,972	2,044
Total Diss. Org. Carbon	"	3	6	2	2
Cl^-	"	540	290	405	576
$SO_4^=$	"	924	280	276	124
TKN	"	2	38	2	1
NH_3-N	"	1	35	2	0.6
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	581	756	372	306
Al	"	0.041	<0.035	<0.035	<0.035
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	522	232	194	193
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	3.5	2.2	0.28	3.3
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	8	11	4	4
Mg	"	262	133	62	45
Mn	"	0.100	0.135	0.257	0.821
Na	"	166	97	210	267
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 6: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1N THROUGH L-4N AT THE RIDGELAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 24, 2008

Parameter	Unit	Lysimeter No.			
		L-1N	L-2N	L-3N	L-4N
pH[2]		7.2	7.3	7.4	7.4
EC	mS/m	525	291	257	277
Total Dissolved Solids	mg/L	4,692	2,040	1,688	1,892
Total Diss. Org. Carbon	"	3	6	1	4
Cl^-	"	561	292	404	521
$SO_4^=$	"	870	257	279	111
TKN	"	2	38	2	2
NH_3-N	"	1	36	2	0.8
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	0.2
Total P	"	<0.25	<0.25	<0.25	0.61
Alkalinity as $CaCO_3$	"	596	793	366	408
Al	"	0.108	0.065	0.055	0.058
As	"	<0.025	<0.025	<0.025	<0.025
Ca	"	506	229	190	193
Cd	"	0.015	0.003	0.004	0.005
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	3.9	3.4	1.0	5.9
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	7	11	4	3
Mg	"	260	135	64	55
Mn	"	0.087	0.141	0.271	0.846
Na	"	158	96	211	248
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Se	"	<0.1	<0.1	<0.1	<0.1
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.



Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 08-

122ND AND STONY ISLAND AVENUE SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2008

JANUARY 2009

Protecting Our Water Environment

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

January 9, 2009

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 2008

The attached three tables contain the monitoring data for the 122nd and Stony Island Avenue Solids Management Area for July, August, and September 2008 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 9, 2008

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 6, 2008

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 3, 2008

Subject: 122nd and Stony Island Avenue Solids Management Area - Stickney WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

No biosolids were placed in or removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:TCG:AC:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

Subject: 122nd and Stony Island Avenue Solids Management Area - Stickney WRP, IEPA Permit No. 2005-AO-4283, Monitoring Report for July, August, and September 2008

No biosolids were placed in or removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

TABLE 1: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON JULY 9, 2008

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH[2]		7.6	7.6	7.8	7.9
EC	mS/m	311	215	286	214
Total Dissolved Solids	mg/L	2,056	1,552	2,820	1,332
Total Diss. Org. Carbon	"	38	13	40	19
Cl^-	"	209	332	97	266
$SO_4^=$	"	301	277	680	28
TKN	"	36	3	11	7
NH_3-N	"	30	1	6	4
$NO_2 + NO_3$-N	"	<0.1	<0.1	3	<0.1
Total P	"	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,079	347	1,079	658
Al	"	0.082	<0.035	0.082	<0.035
B	"	4.5	0.84	0.43	1.5
Ca	"	286	131	505	139
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	0.89	3.4	3.6	1.1
Hg	μg/L	<0.25	<0.25	<0.25	<0.25
K	mg/L	28	31	6	21
Mg	"	143	68	164	76
Mn	"	0.337	1.08	0.616	0.155
Na	"	179	228	54	216
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 6, 2008

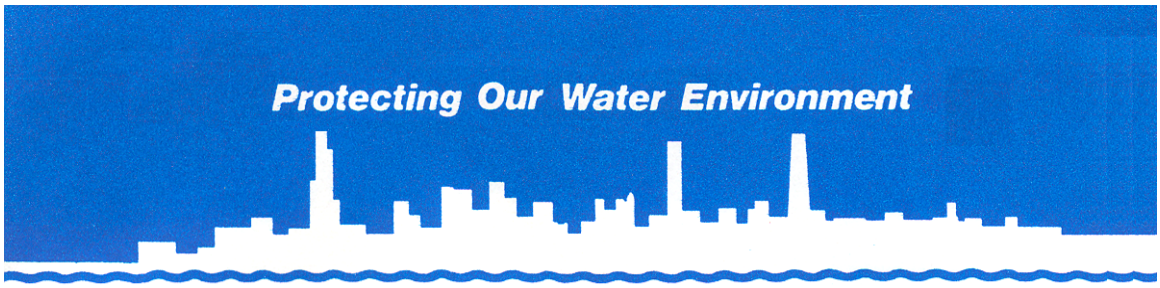
Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH[2]		7.3	7.4	7.1	7.6
EC	mS/m	238	180	247	167
Total Dissolved Solids	mg/L	2,084	1,472	2,848	1,260
Total Diss. Org. Carbon	"	39	13	38	20
Cl^-	"	198	340	92	279
$SO_4^=$	"	336	264	695	18
TKN	"	33	2	10	6
NH_3-N	"	31	0.5	6	4
$NO_2 + NO_3$-N	"	0.2	0.4	0.2	<0.1
Total P	"	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,066	356	1,192	628
Al	"	<0.035	<0.035	<0.035	<0.035
B	"	3.9	0.70	0.25	1.2
Ca	"	262	127	520	133
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	4.6	9.1	29	4.3
Hg	μg/L	<0.25	<0.25	<0.25	<0.25
K	mg/L	27	32	5	16
Mg	"	131	64	162	67
Mn	"	0.332	1.12	0.491	0.122
Na	"	185	225	47	204
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS[1] OF WATER FROM LYSIMETERS
L-1 THROUGH L-4 AT THE 122ND AND STONY ISLAND AVENUE
SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 3, 2008

Parameter	Unit	Lysimeter No.			
		L-1	L-2	L-3	L-4
pH[2]		7.4	7.4	7.1	7.5
EC	mS/m	303	229	314	161
Total Dissolved Solids	mg/L	2,104	1,520	3,156	1,292
Total Diss. Org. Carbon	"	33	10	34	16
Cl^-	"	193	333	93	273
$SO_4^=$	"	324	205	663	24
TKN	"	33	2	9	7
NH_3-N	"	32	0.8	6	4
$NO_2 + NO_3$-N	"	0.2	<0.1	0.6	<0.1
Total P	"	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	1,091	391	1,145	622
Al	"	<0.035	<0.035	0.040	<0.035
B	"	4.3	0.96	0.40	1.4
Ca	"	267	127	514	137
Cd	"	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01
Fe	"	0.15	1.9	5.6	0.38
Hg	μg/L	<0.20	<0.20	<0.20	<0.20
K	mg/L	28	33	6	16
Mg	"	135	66	162	67
Mn	"	0.303	0.958	0.548	0.124
Na	"	190	221	50	195
Ni	"	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.



Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 08-

CALUMET EAST SOLIDS MANAGEMENT AREA

MONITORING REPORT FOR

THIRD QUARTER 2008

JANUARY 2009

Protecting Our Water Environment

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

January 9, 2009

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: Calumet East Solids Management Area - Calumet WRP, Contract No. 85-273-2P, L170401, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

The attached nine tables contain the monitoring data for the Calumet East Solids Management Area for July, August, and September 2008 as required by IEPA Operating Permit No. 2005-AO-4281-1. In a letter dated January 19, 2007, the IEPA granted permission to terminate the monitoring of lysimeter L-1. Therefore, monitoring data for this lysimeter will not be included in this and subsequent reports.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1N through L-6 at the Calumet East Solids Management Area Sampled on July 9, 2008

Table 2, Analysis of Water from Lysimeters L-1N through L-6 at the Calumet East Solids Management Area Sampled on August 6, 2008

Table 3, Analysis of Water from Lysimeters L-1N through L-6 at the Calumet East Solids Management Area Sampled on September 3, 2008

Table 4, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet East Solids Management Drying Area During July 2008

Table 5, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet East Solids Management Drying Area During August 2008

Subject: Calumet East Solids Management Area - Calumet WRP, Contract No. 85-273-2P, L170401, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

Table 6, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet East Solids Management Drying Area During September 2008

Table 7, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During July 2008

Table 8, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During August 2008

Table 9, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During September 2008

Biosolids were placed in and removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:TCG:AC:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

Subject: Calumet East Solids Management Area - Calumet WRP, Contract No. 85-273-2P, L170401, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

Table 6, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet East Solids Management Drying Area During September 2008

Table 7, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During July 2008

Table 8, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During August 2008

Table 9, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet East Solids Management Drying Area During September 2008

Biosolids were placed in and removed from the solids drying area during July, August, and September 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

TABLE 1: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N THROUGH L-6 AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON JULY 9, 2008

Parameter	Unit	Lysimeter No. L-1N	L-2	L-3	L-4	L-5
pH[2]		7.3	7.3	7.5		7.4
EC	mS/m	409	406	159		171
Total Dissolved Solids	mg/L	1,464	2,080	1,532		1,784
Total Diss. Org. Carbon	"	8	1	7		1
Cl^-	"	165	85	32		205
$SO_4^=$	"	1,950	1,000	550		535
TKN	"	13	<0.2	0.3		<0.2
NH_3-N	"	4	<0.1	<0.1	L	<0.1
$NO_2 + NO_3$-N	"	<0.1	<0.1	<0.1	Y	0.5
Total P	"	<0.25	<0.25	<0.25	S	<0.25
Alkalinity as $CaCO_3$	"	513	219	452	I	218
					M	
Al	"	0.074	0.052	0.041	E	0.045
Ca	"	493	285	197	T	206
Cd	"	<0.002	<0.002	<0.002	E	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	R	<0.0025
Cu	"	<0.01	<0.01	<0.01		<0.01
					D	
Fe	"	11	<0.02	<0.02	R	0.16
Hg	μg/L	<0.25	<0.25	<0.25	Y	<0.25
K	mg/L	10	3	2		4
Mg	"	285	136	121		97
Mn	"	0.264	0.003	<0.001		0.037
Na	"	182	73	51		87
Ni	"	<0.002	<0.002	<0.002		<0.002
Pb	"	<0.02	<0.02	<0.02		<0.02
Zn	"	<0.01	0.03	<0.01		<0.01

TABLE 1 (Continued): ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N THROUGH L-6 AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON JULY 9, 2008

Parameter	Unit	Lysimeter No. L-6
pH[2]		7.6
EC	mS/m	142
Total Dissolved Solids	mg/L	1,336
Total Diss. Org. Carbon	”	1
Cl^-	”	13
$SO_4^=$	”	1,500
TKN	”	<0.2
NH_3-N	”	<0.1
$NO_2 + NO_3$-N	”	0.5
Total P	”	<0.25
Alkalinity as $CaCO_3$	”	249
Al	”	<0.035
Ca	”	173
Cd	”	<0.002
Cr	”	<0.0025
Cu	”	<0.01
Fe	”	0.08
Hg	μg/L	<0.25
K	mg/L	4
Mg	”	86
Mn	”	0.033
Na	”	72
Ni	”	<0.002
Pb	”	<0.02
Zn	”	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N THROUGH L-6 AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 6, 2008

Parameter	Unit	Lysimeter No. L-1N	L-2	L-3	L-4	L-5
pH[2]		7.3	7.5	7.5	7.4	7.5
EC	mS/m	314	315	167	313	165
Total Dissolved Solids	mg/L	4,132	2,176	1,820	4,348	1,780
Total Diss. Org. Carbon	"	7	2	7	2	1
Cl^-	"	165	86	51	467	199
$SO_4^=$	"	2,110	1,070	740	1,580	565
TKN	"	12	0.6	3	0.5	<0.2
NH_3-N	"	4	0.3	0.3	<0.1	<0.1
$NO_2 + NO_3$-N	"	0.2	0.4	0.5	0.7	0.6
Total P	"	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	508	220	468	322	216
Al	"	<0.035	<0.035	<0.035	<0.035	<0.035
Ca	"	498	282	228	479	201
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	11	<0.02	1.3	0.06	0.27
Hg	μg/L	<0.25	<0.25	<0.25	<0.25	<0.25
K	mg/L	10	3	3	6	4
Mg	"	285	135	139	257	96
Mn	"	0.245	0.006	0.046	0.044	0.039
Na	"	181	74	68	149	87
Ni	"	<0.002	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Zn	"	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE 2 (Continued): ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N THROUGH L-6 AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 6, 2008

Parameter	Unit	Lysimeter No. L-6
pH[2]		7.6
EC	mS/m	127
Total Dissolved Solids	mg/L	1,368
Total Diss. Org. Carbon	”	1
Cl^-	”	14
$SO_4^=$	”	620
TKN	”	<0.2
NH_3-N	”	<0.1
$NO_2 + NO_3$-N	”	0.7
Total P	”	<0.25
Alkalinity as $CaCO_3$	”	256
Al	”	<0.035
Ca	”	168
Cd	”	<0.002
Cr	”	<0.0025
Cu	”	<0.01
Fe	”	0.07
Hg	μg/L	<0.25
K	mg/L	3
Mg	”	85
Mn	”	0.035
Na	”	71
Ni	”	<0.002
Pb	”	<0.02
Zn	”	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N THROUGH L-6 AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 3, 2008

Parameter	Unit	Lysimeter No. L-1N	L-2	L-3	L-4	L-5
pH[2]		7.3	7.4	7.5	7.2	7.5
EC	mS/m	405	410	160	409	157
Total Dissolved Solids	mg/L	4,376	2,248	1,868	4,404	1,836
Total Diss. Org. Carbon	"	7	1	6	2	<1
Cl^-	"	163	90	50	445	213
$SO_4^=$	"	1,910	959	655	1,450	505
TKN	"	14	<0.2	3	6	0.4
NH_3-N	"	5	<0.1	0.3	0.2	0.3
$NO_2 + NO_3$-N	"	0.3	0.6	0.7	0.4	0.3
Total P	"	<0.25	<0.25	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	517	214	449	350	226
Al	"	<0.035	<0.035	<0.035	0.044	<0.035
Ca	"	486	274	216	461	198
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01	<0.01	<0.01
Fe	"	11	<0.02	1.1	0.74	0.61
Hg	μg/L	<0.20	<0.20	<0.20	<0.20	<0.20
K	mg/L	10	3	3	6	4
Mg	"	280	132	131	249	93
Mn	"	0.259	0.007	0.045	0.138	0.056
Na	"	176	71	64	139	84
Ni	"	<0.002	<0.002	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02	<0.02	<0.02
Zn	"	<0.01	0.02	<0.01	<0.01	<0.01

TABLE 3 (Continued): ANALYSIS[1] OF WATER FROM LYSIMETERS L-1N THROUGH L-6 AT THE CALUMET EAST SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 3, 2008

Parameter	Unit	Lysimeter No. L-6
pH[2]		7.6
EC	mS/m	119
Total Dissolved Solids	mg/L	1,464
Total Diss. Org. Carbon	”	<1
Cl^-	”	14
$SO_4^=$	”	580
TKN	”	0.3
NH_3-N	”	0.3
$NO_2 + NO_3$-N	”	0.4
Total P	”	<0.25
Alkalinity as $CaCO_3$	”	253
Al	”	<0.035
Ca	”	168
Cd	”	<0.002
Cr	”	<0.0025
Cu	”	<0.01
Fe	”	0.57
Hg	μg/L	<0.20
K	mg/L	3
Mg	”	83
Mn	”	0.040
Na	”	68
Ni	”	<0.002
Pb	”	<0.02
Zn	”	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

Parameter	Unit	Concentration[1]
pH		7.8
Total Solids	%	8.7
Total Volatile Solids[2]	%	46.5
TKN	mg/kg	60,621
NH_3-N	,,	13,109

[1]Values are the means of five samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

Parameter	Unit	Concentration[1]
pH		7.7
Total Solids	%	10.6
Total Volatile Solids[2]	%	43.9
TKN	mg/kg	33,494
NH_3-N	,,	5,364

[1]Values are the means of two samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2008

Parameter	Unit	Concentration[1]
pH		7.9
Total Solids	%	10.1
Total Volatile Solids[2]	%	42.2
TKN	mg/kg	33,695
NH_3-N	,,	7,816

[1]Values are the means of five samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 7: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

Parameter	Unit	Concentration[1]
pH		7.2
Total Solids	%	60.5
Total Volatile Solids[2]	%	34.1
TKN	mg/kg	30,126
NH_3-N	,,	2,818
Total P	,,	24,673
Al	,,	19,249
As	,,	<8.6
Ca	,,	48,617
Cd	,,	5
Cr	,,	106
Cu	,,	375
Fe	,,	38,353
Hg*	,,	1.1
K	,,	4,946
Mg	,,	16,909
Mn	,,	885
Mo	,,	15
Na	,,	<171
Ni	,,	39
Pb	,,	107
Se	,,	<11.4
Zn	,,	971

[1]Values are the means of three samples.
[2]Total volatile solids as a percentage of total solids.
*LOQ instead of MDL was used for Hg only.

TABLE 8: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

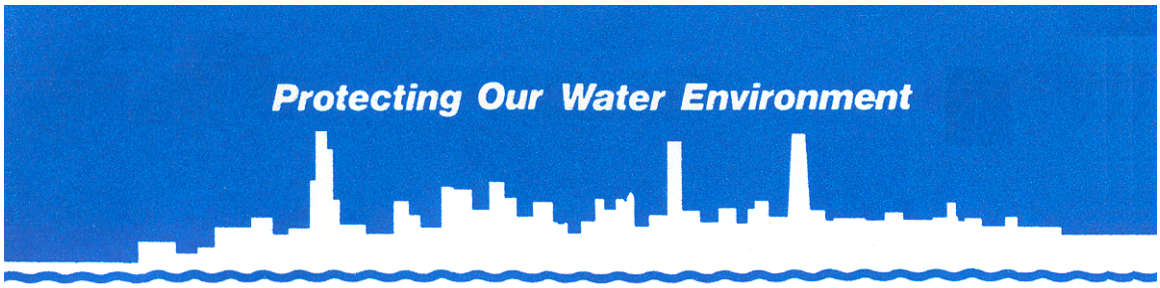
Parameter	Unit	Concentration[1]
pH		7.5
Total Solids	%	56.1
Total Volatile Solids[2]	%	39.5
TKN	mg/kg	26,853
NH_3-N	,,	3,591
Total P	,,	24,014
Al	,,	17,586
As	,,	<8.6
Ca	,,	52,246
Cd	,,	4
Cr	,,	100
Cu	,,	394
Fe	,,	31,586
Hg*	,,	1.0
K	,,	4,769
Mg	,,	18,506
Mn	,,	975
Mo	,,	14
Na	,,	1,286
Ni	,,	40
Pb	,,	101
Se	,,	<11.4
Zn	,,	979

[1]Values are the means of five samples.
[2]Total volatile solids as a percentage of total solids.
*LOQ instead of MDL was used for Hg only.

TABLE 9: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET EAST SOLIDS MANAGEMENT DRYING AREA DURING SEPTEMBER 2008

Parameter	Unit	Concentration[1]
pH		7.5
Total Solids	%	62.9
Total Volatile Solids[2]	%	44.4
TKN	mg/kg	30,755
NH_3-N	,,	2,989
Total P	,,	24,122
Al	,,	12,546
As	,,	<8.6
Ca	,,	48,548
Cd	,,	3
Cr	,,	71
Cu	,,	422
Fe	,,	21,602
Hg*	,,	0.94
K	,,	5,195
Mg	,,	15,297
Mn	,,	899
Mo	,,	12
Na	,,	21,591
Ni	,,	31
Pb	,,	79
Se	,,	<11.4
Zn	,,	910

[1]Values are the means of three samples.
[2]Total volatile solids as a percentage of total solids.
*LOQ instead of MDL was used for Hg only.



Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 08-

CALUMET WEST SOLIDS MANAGEMENT AREA MONITORING REPORT FOR THIRD QUARTER 2008

JANUARY 2009

Protecting Our Water Environment

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

January 9, 2009

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: Calumet West Solids Management Area - Calumet WRP, Contract No. 84-270-2P, C175399, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

The attached seven tables contain the monitoring data for the Calumet West Solids Management Area for July, August, and September 2008 as required by IEPA Operating Permit No. 2005-AO-4281-1.

The data reported are as follows:

Table 1, Analysis of Water from Lysimeters L-1 through L-3 at the Calumet West Solids Management Area Sampled on July 9, 2008

Table 2, Analysis of Water from Lysimeters L-1 through L-3 at the Calumet West Solids Management Area Sampled on August 6, 2008

Table 3, Analysis of Water from Lysimeters L-1 through L-3 at the Calumet West Solids Management Area Sampled on September 3, 2008

Table 4, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet West Solids Management Drying Area During July 2008

Table 5, Analysis of Monthly Composited Digested Biosolids Placed in the Calumet West Solids Management Drying Area During August 2008

Table 6, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During July 2008

Subject: Calumet West Solids Management Area - Calumet WRP, Contract No. 84-270-2P, C175399, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

Table 7, Analysis of Monthly Composited Processed Digested Biosolids Removed from the Calumet West Solids Management Drying Area During August 2008

Biosolids were placed in and removed from the solids drying area during July and August 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:TCG:AC:PL:kq
Attachments
cc w/att: Mr. Sulski, IEPA
Records Unit, IEPA
Stuba/Granato/Cox/Lindo/M. Patel
cc wo/att: Jamjun/Sharma/Garelli

Subject: Calumet West Solids Management Area - Calumet WRP, Contract No. 84-270-2P, C175399, IEPA Permit No. 2005-AO-4281-1, Monitoring Report for July, August, and September 2008

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TABLE 1: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1 THROUGH L-3 AT THE CALUMET WEST SOLIDS MANAGEMENT AREA SAMPLED ON JULY 9, 2008

Parameter	Unit	Lysimeter No. L-1	L-2	L-3
pH[2]		7.4	7.6	7.6
EC	mS/m	321	326	317
Total Dissolved Solids	mg/L	2,832	3,308	1,632
Total Diss. Org. Carbon	"	1	2	NA
Cl^-	"	98	30	12
$SO_4^=$	"	1,500	1,850	NA
TKN	"	0.6	0.3	<0.2
NH_3-N	"	0.3	<0.1	<0.1
$NO_2 + NO_3$-N	"	0.3	0.6	0.3
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	150	154	66
Al	"	0.059	0.058	<0.035
Ca	"	312	374	191
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	1.6	<0.02	<0.02
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	7	8	3
Mg	"	142	194	97
Mn	"	0.137	0.015	0.008
Na	"	210	190	94
Ni	"	<0.002	0.006	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	0.05	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.
NA = No analysis; insufficient sample.

TABLE 2: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1 THROUGH L-3 AT THE CALUMET WEST SOLIDS MANAGEMENT AREA SAMPLED ON AUGUST 6, 2008

Parameter	Unit	Lysimeter No. L-1	L-2	L-3
pH[2]		7.5	7.6	7.7
EC	mS/m	232	242	244
Total Dissolved Solids	mg/L	2,920	3,224	3,332
Total Diss. Org. Carbon	"	1	1	1
Cl^-	"	141	37	26
$SO_4^=$	"	1,480	1,860	1,980
TKN	"	0.3	<0.2	<0.2
NH_3-N	"	0.3	<0.1	<0.1
$NO_2 + NO_3$-N	"	0.4	0.6	0.6
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	149	158	134
Al	"	<0.035	<0.035	<0.035
Ca	"	320	366	382
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	1.4	0.11	<0.02
Hg	μg/L	<0.25	<0.25	<0.25
K	mg/L	7	8	6
Mg	"	147	186	194
Mn	"	0.154	0.048	0.011
Na	"	227	193	197
Ni	"	<0.002	<0.002	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	0.04	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: ANALYSIS[1] OF WATER FROM LYSIMETERS L-1 THROUGH L-3 AT THE CALUMET WEST SOLIDS MANAGEMENT AREA SAMPLED ON SEPTEMBER 3, 2008

Parameter	Unit	Lysimeter No. L-1	L-2	L-3
pH[2]		7.5	7.6	7.6
EC	mS/m	296	307	304
Total Dissolved Solids	mg/L	2,916	3,296	3,408
Total Diss. Org. Carbon	"	1	1	<1
Cl^-	"	100	34	26
$SO_4^=$	"	1,410	1,700	1,810
TKN	"	0.4	<0.2	<0.2
NH_3-N	"	0.4	<0.1	<0.1
$NO_2 + NO_3$-N	"	0.3	0.6	0.5
Total P	"	<0.25	<0.25	<0.25
Alkalinity as $CaCO_3$	"	141	158	136
Al	"	<0.035	<0.035	<0.035
Ca	"	303	364	375
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.0025	<0.0025	<0.0025
Cu	"	<0.01	<0.01	<0.01
Fe	"	2.2	0.09	<0.02
Hg	μg/L	<0.20	<0.20	<0.20
K	mg/L	7	8	6
Mg	"	139	186	190
Mn	"	0.146	0.086	0.028
Na	"	208	183	183
Ni	"	<0.002	0.005	<0.002
Pb	"	<0.02	<0.02	<0.02
Zn	"	<0.01	0.05	<0.01

[1]Limit of quantitation (LOQ) instead of MDL was used as reporting limit.
[2]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 4: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE CALUMET WEST SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

Parameter	Unit	Concentration[1]
pH		7.8
Total Solids	%	9.5
Total Volatile Solids[2]	%	44.3
TKN	mg/kg	55,005
NH_3-N	,,	13,685

[1]Values for one sample only.
[2]Total volatile solids as a percentage of total solids.

TABLE 5: ANALYSIS OF MONTHLY COMPOSITED DIGESTED BIOSOLIDS PLACED IN THE CALUMET WEST SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

Parameter	Unit	Concentration[1]
pH		7.7
Total Solids	%	9.8
Total Volatile Solids[2]	%	45.3
TKN	mg/kg	39,511
NH_3-N	,,	11,287

[1]Values are the means of three samples.
[2]Total volatile solids as a percentage of total solids.

TABLE 6: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET WEST SOLIDS MANAGEMENT DRYING AREA DURING JULY 2008

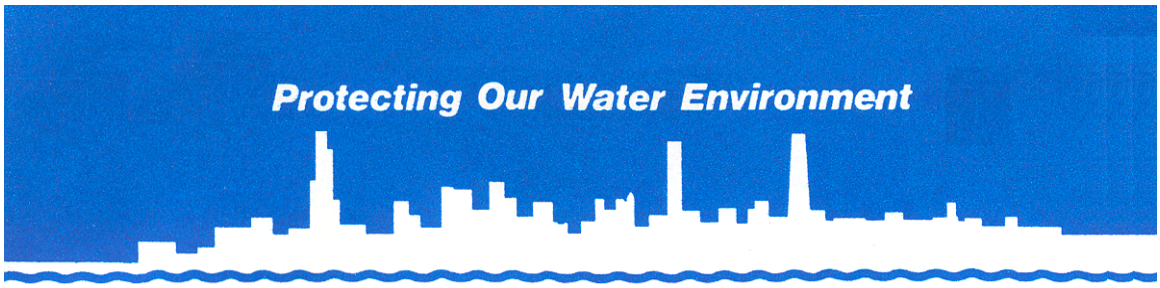
Parameter	Unit	Concentration[1]
pH		6.8
Total Solids	%	75.0
Total Volatile Solids[2]	%	28.0
TKN	mg/kg	13,665
NH_3-N	,,	355
Total P	,,	17,979
Al	,,	17,899
As	,,	10
Ca	,,	53,432
Cd	,,	5
Cr	,,	93
Cu	,,	319
Fe	,,	28,840
Hg*	,,	0.98
K	,,	4,476
Mg	,,	20,572
Mn	,,	844
Mo	,,	13
Na	,,	391
Ni	,,	37
Pb	,,	110
Se	,,	<11.4
Zn	,,	833

[1]Values are the means of five samples.
[2]Total volatile solids as a percentage of total solids.
*LOQ instead of MDL was used for Hg only.

TABLE 7: ANALYSIS OF MONTHLY COMPOSITED PROCESSED DIGESTED BIOSOLIDS REMOVED FROM THE CALUMET WEST SOLIDS MANAGEMENT DRYING AREA DURING AUGUST 2008

Parameter	Unit	Concentration[1]
pH		6.8
Total Solids	%	78.9
Total Volatile Solids[2]	%	29.3
TKN	mg/kg	18,845
NH_3-N	,,	556
Total P	,,	19,274
Al	,,	23,043
As	,,	<8.6
Ca	,,	56,077
Cd	,,	5
Cr	,,	110
Cu	,,	368
Fe	,,	29,066
Hg*	,,	1.0
K	,,	6,436
Mg	,,	21,879
Mn	,,	888
Mo	,,	14
Na	,,	966
Ni	,,	41
Pb	,,	119
Se	,,	<11.4
Zn	,,	945

[1]Values are the means of two samples.
[2]Total volatile solids as a percentage of total solids.
*LOQ instead of MDL was used for Hg only.



Metropolitan Water Reclamation District of Greater Chicago

RESEARCH AND DEVELOPMENT DEPARTMENT

REPORT NO. 08-

HANOVER PARK WATER RECLAMATION PLANT FISCHER FARM MONITORING REPORT FOR THIRD QUARTER 2008

JANUARY 2009

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT

THIRD QUARTER 2008

Research and Development
P. Lindo
A. Cox

JANUARY 2009

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

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

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January 9, 2009

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: Hanover Park Water Reclamation Plant - IEPA Permit No. 2007-SC-2951, Monitoring Report for July, August, and September 2008

The attached report includes eight tables of the monitoring results for the Hanover Park Water Reclamation Plant Fischer Farm site for the third quarter of 2008.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:TCG:AC:PL:kq
Enclosure
cc w/enc: Jay Patel, Manager, IEPA Region II - Des Plaines
Mr. Valdis Aistars, USEPA Region V
Mr. Ash Sajjad, USEPA Region V
Stuba/Khalil
Granato/O'Connor/Cox
Lindo/Patel, M.

cc wo/enc: Sharma/Quintanilla/Lazicki
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FOREWORD

The data and information in this report fulfill the frequency of monitoring and the reporting requirements for the Hanover Park Fischer Farm Site as specified in the Illinois Environmental Protection Agency Permit No. 2007-SC-2951 for the third quarter of 2008.

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ACKNOWLEDGEMENT

The assistance given by Ms. Minaxi Patel, Sanitary Chemist I, of the Environmental Monitoring and Research Division, and Mr. John Chavich, Sanitary Chemist IV, of the John E. Egan Analytical Laboratory Section, is greatly appreciated.

DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

HANOVER PARK WATER RECLAMATION PLANT FISCHER FARM REPORT FOR THIRD QUARTER OF 2008

During July, August, and September 2008, activities at the Hanover Park Water Reclamation Plant (WRP) Fischer Farm included well and field drainage water sampling, and flow measurements. These monitoring activities are required by the Illinois Environmental Protection Agency Operating Permit No. 2007-SC-2951. Fields and water monitoring locations are presented in Figure 1.

Water from each of the six monitoring wells was sampled twice monthly in July, August, and September. However, no sample was obtained from well 5 on July 1. Analytical data for samples collected during the quarter are presented in Tables 1 through 6. Samples collected on July 1 and 22 and September 23 from Wells 1, 6, 7, and 8 contained elevated fecal coliform counts. Such occurences are generally temporary, and associated with an increase in geese activity in the vicinity of the wells.

Drainage water (combined surface and subsurface) returned to the Hanover Park WRP from the farm fields was sampled twice per month in July, August, and September. Analytical data for these samples are presented in Table 7. The volumes of drainage water returned to the WRP during the third quarter were estimated as 4.52, 4.41, 28.65 million gallons in July, August, and September, respectively. The analytical data for the lagoon supernatant applied to Fischer Farm fields during the quarter are presented in Table 8. The volumes and dry weights applied are reported in Table 9.

FIGURE 1: FIELDS AND WELLS AT THE HANOVER PARK FISCHER FARM SITE OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO