MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 09-02

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

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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 West Solids Management Area – Calumet Water Reclamation Plant, 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 (SMA) for July, August, and September 2008 as required by IEPA Operating Permit No. 2005-AO-4281-1.

The data are reported as follows:

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

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

Table 3, Analysis of Water from Lysimeters L-1 through L-3 at the Calumet West SMA 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

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

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

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

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.