MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 09-38

CALUMET WEST SOLIDS MANAGEMENT AREA

MONITORING REPORT

FIRST QUARTER 2009

JUNE 2009

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312.751.5190

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June 23, 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 Water Reclamation Plant, Contract No. 84-270-2P, C175399, Illinois Environmental Protection Agency Permit No. 2005-AO-4281-1, Monitoring Report for January, February, and March 2009

The attached three tables contain the monitoring data for the Calumet West Solids Management Area for January, February, and March 2009 as required by Illinois Environmental Protection Agency (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-3N at the Calumet West Solids Management Area Sampled on January 7, 2009

Table 2, Analysis of Water from Lysimeters L-1 through L-3N at the Calumet West Solids Management Area Sampled on February 9, 2009

Table 3, Analysis of Water from Lysimeters L-1 through L-3N at the Calumet West Solids Management Area Sampled on March 4, 2009

Three new lysimeters, L-1N, L-2N, and L-3N, were installed at this site in September 2008 as replacements for L-1, L-2, and L-3, respectively. The new and old lysimeters will be monitored simultaneously for one year. A request will then be submitted to the IEPA to terminate monitoring of the old lysimeters.

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No biosolids were placed in or removed from the solids drying area during January, February, and March 2009.

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 OF WATER FROM LYSIMETERS
L-1 THROUGH L-3N AT THE CALUMET WEST
SOLIDS MANAGEMENT AREA SAMPLED ON JANUARY 7, 2009

Parameter	Unit	Lysimeter No. L-1	L-1N	L-2	L-2N	L-3
pH[1]					12	
EC	mS/m	|	|	|	283	|
Total Dissolved Solids	mg/L	|	|	|	1,424	|
Total Diss. Org. Carbon	"	|	|	|	31	|
Cl^-	"	|	|	|	90	|
$SO_4^=$	"				541	
		L	L	L		L
TKN	"	Y	Y	Y	10	Y
NH_3-N	"	S	S	S	7	S
$NO_2 + NO_3$-N	"	I	I	I	0.37	I
Total P	"	M	M	M	<0.1	M
Alkalinity as $CaCO_3$	"	E	E	E	406	E
		T	T	T		T
Al	"	E	E	E	<1	E
Ca	"	R	R	R	160	R
Cd	"				<0.01	
Cr	"	F	F	F	<0.0025	F
Cu	"	R	R	R	<0.01	R
		O	O	O		O
Fe	"	Z	Z	Z	<0.1	Z
Hg	μg/L	E	E	E	<0.20	E
K	mg/L	N	N	N	130	N
Mg	"				<0.35	
Mn	"	|	|	|	<0.003	|
		|	|	|		|
Na	"	|	|	|	249	|
Ni	"	|	|	|	0.06	|
Pb	"	|	|	|	0.048	|
Zn	"				<0.015	

TABLE 1 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1 THROUGH L-3N AT THE CALUMET WEST SOLIDS MANAGEMENT AREA SAMPLED ON JANUARY 7, 2009

Parameter	Unit	Lysimeter No. L-3N
pH[1]		
EC	mS/m	
Total Dissolved Solids	mg/L	
Total Diss. Org. Carbon	,,	
Cl^-	,,	
$SO_4^=$	,,	
TKN	,,	LYSIMETER
NH_3-N	,,	
$NO_2 + NO_3$-N	,,	
Total P	,,	
Alkalinity as $CaCO_3$	,,	
Al	,,	
Ca	,,	
Cd	,,	
Cr	,,	FROZEN
Cu	,,	
Fe	,,	
Hg	μg/L	
K	mg/L	
Mg	,,	
Mn	,,	
Na	,,	
Ni	,,	
Pb	,,	
Zn	,,	

[1]pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-3N AT THE CALUMET WEST
SOLIDS MANAGEMENT AREA SAMPLED ON FEBRUARY 9, 2009

Parameter	Unit	Lysimeter No. L-1	L-1N	L-2	L-2N	L-3
pH[1]		7.5	7.8	7.9		7.6
EC	mS/m	231	282	270	|	272
Total Dissolved Solids[2]	mg/L	2,836	2,636	3,248		3,316
Total Diss. Org. Carbon	"	2	8	2	L	2
Cl^-	"	114	75	35	Y	30
$SO_4^=$	"	1,475	1,314	1,842	S	2,150
					I	
TKN	"	0.5	2	0.6	M	0.4
NH_3-N	"	0.2	0.6	<0.1	E	<0.1
$NO_2 + NO_3$-N	"	<0.04	<0.04	<0.04	T	<0.04
Total P	"	0.2	<0.1	0.2	E	0.4
Alkalinity as $CaCO_3$	"	162	190	191	R	163
Al	"	<1	<1	<1	I	<1
Ca	"	138	310	316	N	374
Cd	"	<0.01	<0.01	<0.01	A	<0.01
Cr	"	<0.0025	<0.0025	<0.0025	C	<0.0025
Cu	"	<0.01	<0.01	<0.01	C	<0.01
					E	
Fe	"	0.9	2	<0.1	S	0.3
Hg	μg/L	<0.20	<0.20	<0.20	S	<0.20
K	mg/L	7	8	21	I	8
Mg	"	52	137	162	B	192
Mn	"	0.127	0.137	0.029	L	0.091
					E	
Na	"	70	211	106		190
Ni	"	<0.01	<0.01	<0.01	|	<0.01
Pb	"	0.053	0.048	0.045	|	0.047
Zn	"	<0.015	<0.015	0.067		0.052

TABLE 2 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1 THROUGH L-3N AT THE CALUMET WEST SOLIDS MANAGEMENT AREA SAMPLED ON FEBRUARY 9, 2009

Parameter	Unit	Lysimeter No. L-3N
pH[1]		8.1
EC	mS/m	145
Total Dissolved Solids[2]	mg/L	988
Total Diss. Org. Carbon	,,	6
Cl^-	,,	24
$SO_4^=$	,,	275
TKN	,,	2
NH_3-N	,,	0.4
$NO_2 + NO_3$-N	,,	0.08
Total P	,,	<0.1
Alkalinity as $CaCO_3$	,,	194
Al	,,	<1
Ca	,,	70
Cd	,,	<0.01
Cr	,,	<0.0025
Cu	,,	<0.01
Fe	,,	<0.1
Hg	μg/L	<0.20
K	mg/L	7
Mg	,,	25
Mn	,,	0.031
Na	,,	101
Ni	,,	<0.01
Pb	,,	0.044
Zn	,,	<0.015

[1]pH analyzed beyond recommended holding time of 15 minutes.
[2]Total dissolved solids analyzed beyond recommended holding time of 7 days.
L-2N inaccessible due to minor repairs and flushing.

TABLE 3: ANALYSIS OF WATER FROM LYSIMETERS
L-1 THROUGH L-3N AT THE CALUMET WEST
SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 4, 2009

Parameter	Unit	Lysimeter No. L-1	L-1N	L-2	L-2N	L-3
pH[1]			7.9	7.9	12	7.8
EC	mS/m		248	318	213	319
Total Dissolved Solids	mg/L		2,836	3,332	1,332	3,372
Total Diss. Org. Carbon	"		7	4	17	2
Cl^-	"		48	41	62	29
$SO_4^=$	"		1,440	1,762	515	1,829
		L				
TKN	"	Y	2	0.5	5	0.3
NH_3-N	"	S	0.6	<0.1	4	<0.1
$NO_2 + NO_3$-N	"	I	0.06	2.0	<0.04	0.40
Total P	"	M	<0.1	<0.1	<0.1	<0.1
Alkalinity as $CaCO_3$	"	E	184	182	217	165
		T				
Al	"	E	<1	<1	<1	<1
Ca	"	R	316	366	171	375
Cd	"		<0.01	<0.01	<0.01	<0.01
Cr	"	F	<0.003	<0.003	<0.003	<0.003
Cu	"	R	<0.01	<0.01	<0.01	<0.01
		O				
Fe	"	Z	<0.1	<0.1	<0.1	<0.1
Hg	μg/L	E	<0.20	<0.20	<0.20	<0.20
K	mg/L	N	18	8	49	7
Mg	"		168	192	5.1	193
Mn	"		0.042	0.046	<0.003	0.057
Na	"		126	185	169	190
Ni	"		<0.01	<0.01	0.02	<0.01
Pb	"		0.055	0.056	0.061	0.060
Zn	"		0.047	0.035	<0.015	0.025

TABLE 3 (Continued): ANALYSIS OF WATER FROM LYSIMETERS L-1 THROUGH L-3N AT THE CALUMET WEST SOLIDS MANAGEMENT AREA SAMPLED ON MARCH 4, 2009

Parameter	Unit	Lysimeter No. L-3N
pH[1]		8.0
EC	mS/m	315
Total Dissolved Solids	mg/L	2,992
Total Diss. Org. Carbon	,,	4
Cl^-	,,	47
$SO_4^=$	,,	1,511
TKN	,,	1
NH_3-N	,,	1
$NO_2 + NO_3$-N	,,	<0.04
Total P	,,	<0.1
Alkalinity as $CaCO_3$	,,	255
Al	,,	<1
Ca	,,	336
Cd	,,	<0.01
Cr	,,	<0.003
Cu	,,	<0.01
Fe	,,	0.2
Hg	μg/L	<0.20
K	mg/L	11
Mg	,,	161
Mn	,,	0.340
Na	,,	180
Ni	,,	<0.01
Pb	,,	0.052
Zn	,,	<0.015

[1]pH analyzed beyond recommended holding time of 15 minutes.