

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 15-31

CONTROLLED SOLIDS DISTRIBUTION REPORT

FOR SECOND QUARTER 2015

August 2015

Metropolitan Water Reclamation District of Greater Chicago

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August 28, 2015

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: Metropolitan Water Reclamation District of Greater Chicago – Controlled Solids Distribution Program Illinois Environmental Protection Agency Permit Nos. 2010-SC-0200 and 2015-SC-59620, Second Quarter (April – June 2015)

This letter transmits information and data for the Metropolitan Water Reclamation District of Greater Chicago – Controlled Solids Distribution Program for the second quarter (April – June 2015), as required by Illinois Environmental Protection Agency Permit Nos. 2010-SC-0200 and 2015-SC-59620.

Sludge flow schematic diagrams for solids processed during April – June 2015 are shown in Figure 1 – John E. Egan Water Reclamation Plant (WRP), Figure 2 – Calumet WRP, and Figure 3 – Stickney WRP.

Biosolids were distributed to 22 sites during the second quarter of 2015. The user information reports for these sites are presented in Tables 1 and 2, and the analyses of biosolids delivered to these sites are presented in Tables 3 and 4.

Very truly yours,

Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research

TCG:OO:cm

Attachments

cc/att: Mr. V. Aistars (USEPA)

Mr. J. Patel (IEPA)

FIGURE 1: JOHN E. EGAN WATER RECLAMATION PLANT OPERATIONAL FLOW CHART FOR SECOND QUARTER 2015

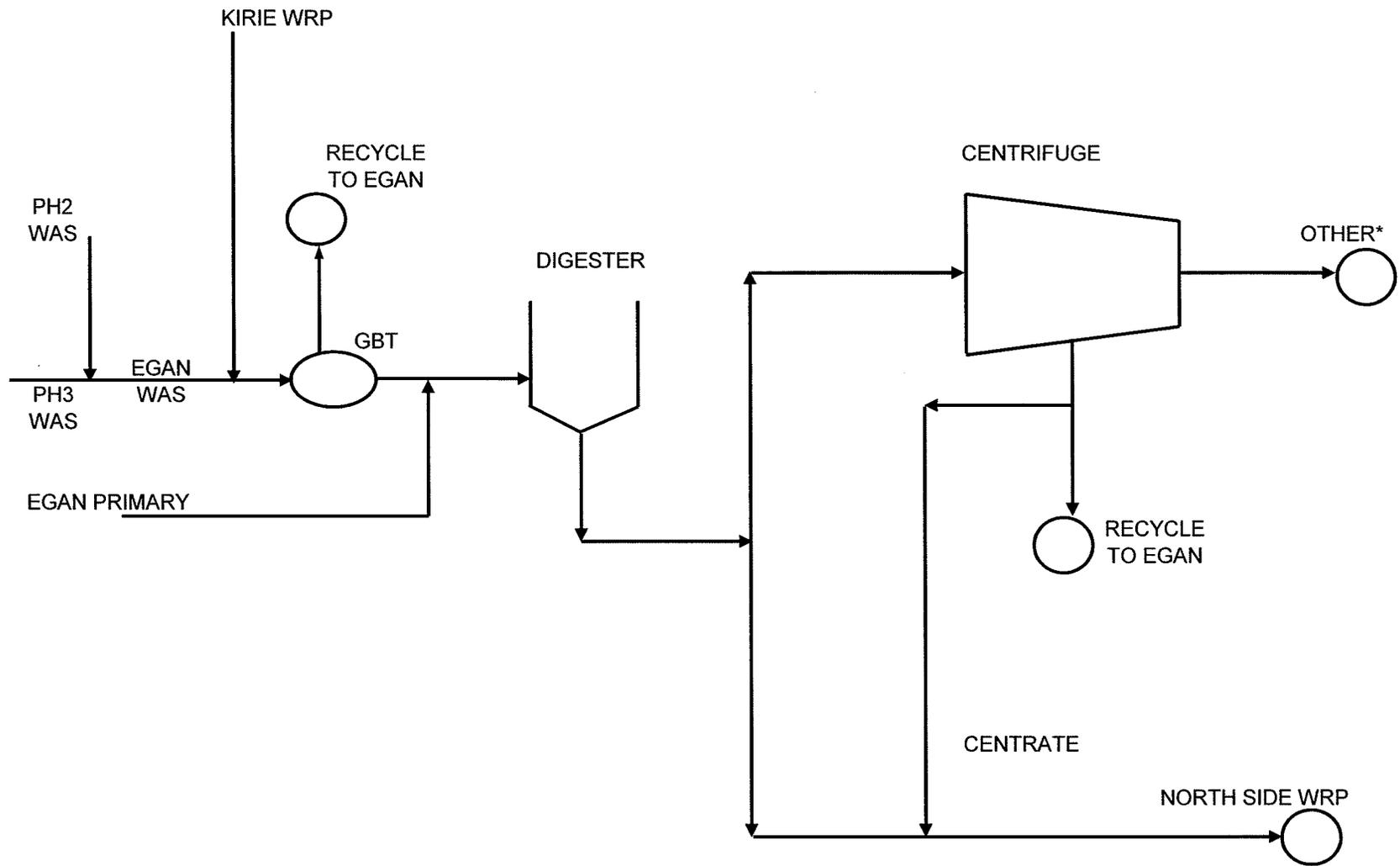


FIGURE 2: CALUMET WATER RECLAMATION PLANT OPERATIONAL FLOW CHART FOR SECOND QUARTER 2015

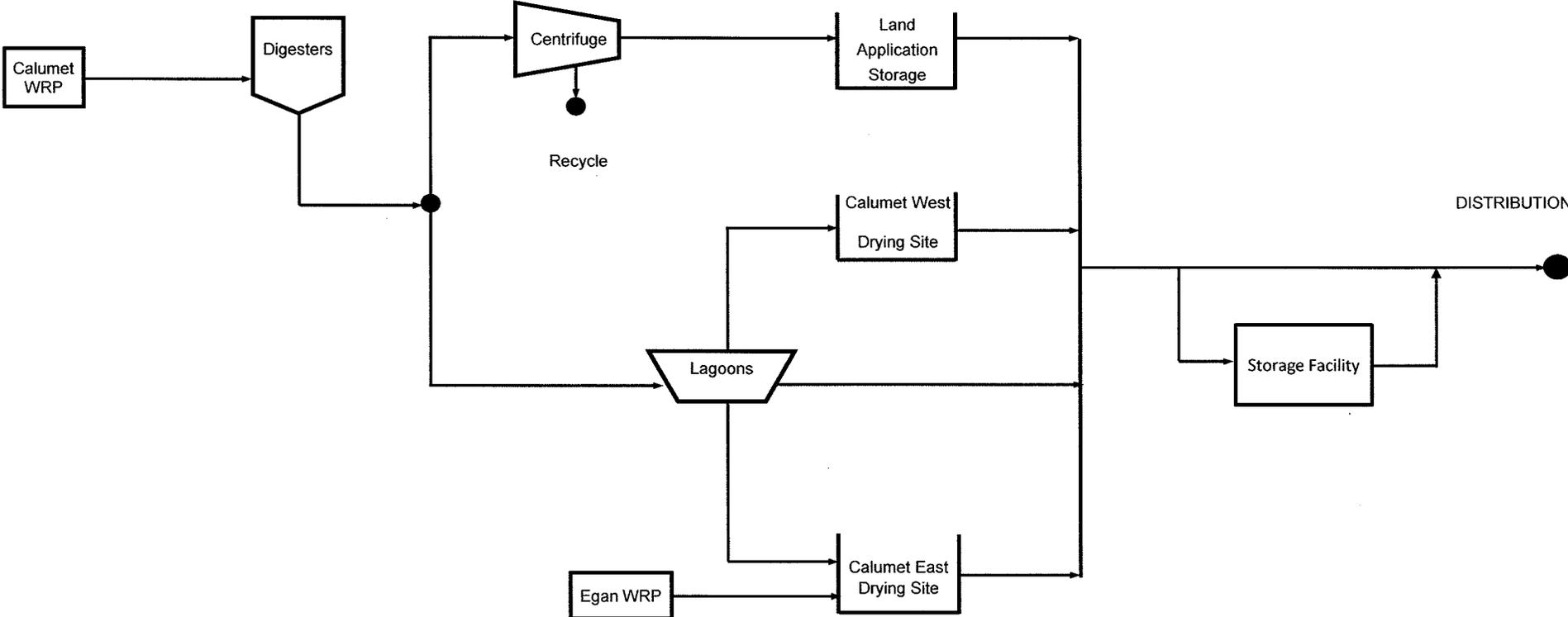


FIGURE 3: STICKNEY WATER RECLAMATION PLANT OPERATIONAL FLOW CHART FOR SECOND QUARTER 2015

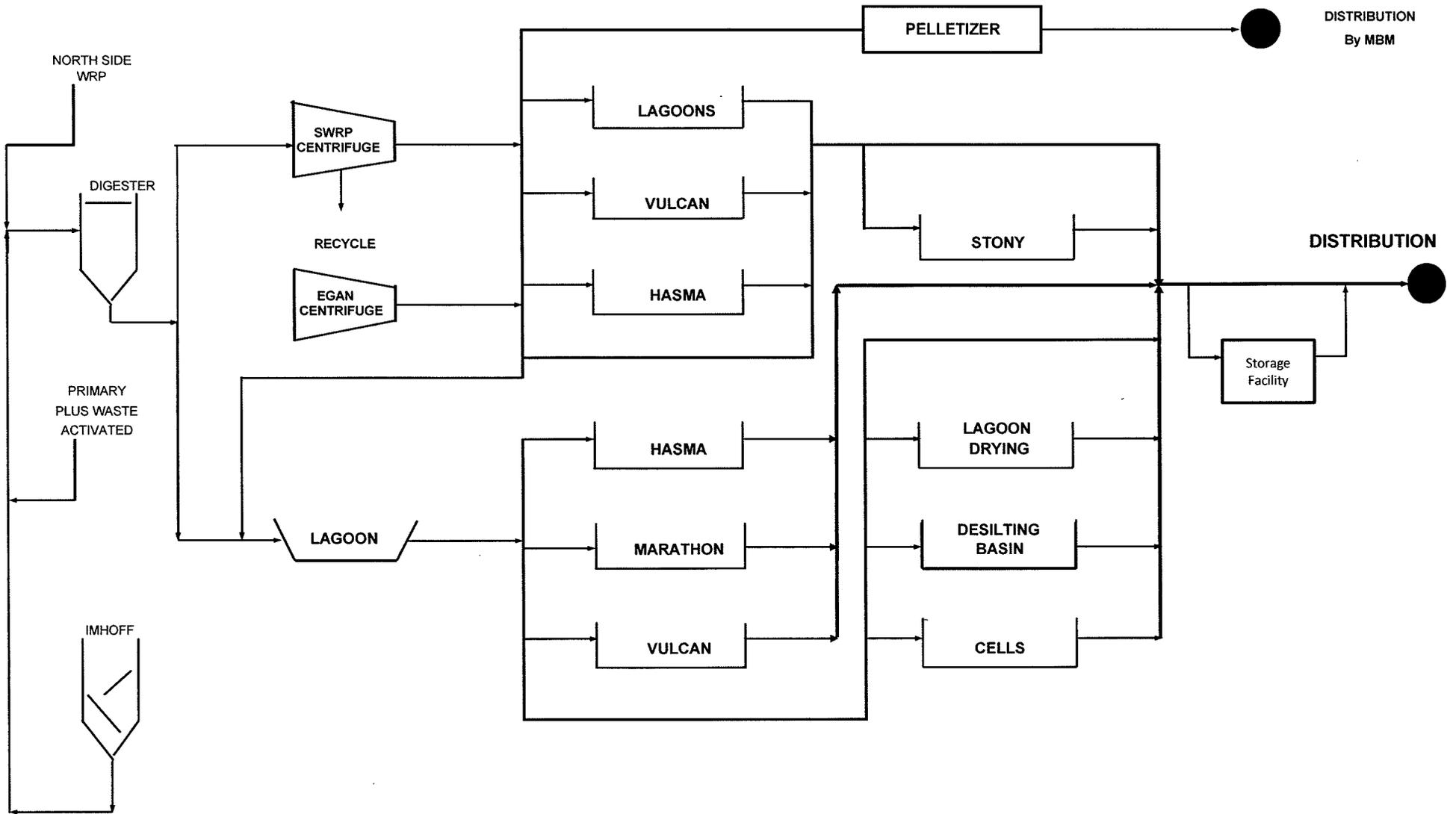


TABLE 1: USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Purpose	Application	
			2 nd Quarter	Cumulative		Area (acre)	Rate (ton/acre) ¹
1	Inspired Community Garden 860 East 64th St. Chicago, IL 60637	04/22, 05/11	8.2	8.2	Composted biosolids used as soil amendment for demonstration plots	0.2	41.2
2	Gleneagles Golf Course 13070 McCarthy Rd. Lemont, IL 60439	04/24	11.3	11.3	Composted biosolids used as soil amendment for turf and tree establishment	0.5	22.6
		05/01	93.3	104.6 ²	Topdressing fertilizer for turf growth	7	13.3
3	Tinley Park Park District Dog Park 19900 80 th Ave. Tinley Park, IL 60487	04/30	133.2	133.2	Soil amendment for turf and renovation of park	4	33.3
4	Piper & Son Landscaping Co. 31 W. 320 Ramm Dr. Naperville, IL 60564	04/30, 5/14, 05/28	122.5	122.5	Soil amendment for turf and tree establishment	4	30.6
		6/04	14.2	136.7 ²	Composted biosolids used as soil amendment for turf and tree establishment	0.5	28.4

TABLE 1 (Continued): USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Purpose	Application	
			2 nd Quarter	Cumulative		Area (acre)	Rate (ton/acre) ¹
5	Chicago Park District Maggie Daley Park 337 E. Randolph St. Chicago, IL 60602	05/01	196.0	196.0	Soil amendment for turf and tree establishment	5	39.2
6	Chicago Park District Pulaski Park 1419 W. Blackhawk St. Chicago, IL 60642	05/01	4.0	4.0	Soil amendment for turf and tree establishment	0.1	39.7
7	Mid Iron Golf Club 12680 Bell Rd. Lemont, IL 60439	05/01, 05/02, 05/08, 05/23	581.3	581.3	Topdressing fertilizer for turf growth	40	14.5
8	Pleasant Farms Landscaping 1400 W. 46 th St. Chicago, IL 60609	05/06	4.3	4.3	Composted biosolids used as soil amendment for landscaping	0.1	43.2
9	North Shore Country Club 1340 Glenview Rd. Glenview, IL 60025	05/08	27.1	27.1	Topdressing fertilizer for turf growth	2	13.5
	North Shore Country Club 1340 Glenview Rd. Glenview, IL 60025	05/08	7.9	35.0 ²	Composted biosolids used as soil amendment for turf and tree establishment	0.2	39.5

TABLE 1 (Continued): USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			2 nd Quarter	Cumulative	Purpose	Area (acre)	Rate (ton/acre) ¹
10	Metropolitan Water Reclamation District of Greater Chicago Stickney Project (04-131-2D) 6001 W. Pershing Rd. Cicero, IL 60804	05/13, 05/19, 05/20	158.7	158.7	Soil amendment for turf establishment	5	31.7
11	Chicago Park District Holstein Park 2200 North Oakley Ave. Chicago, IL 60647	05/14	68.9	68.9	Soil amendment for turf and tree establishment	2	34.4
12	Republic Services 4100 W. Frontage Rd. Hillside, IL 60162	05/20	464.0	464.0	Topdressing fertilizer for turf growth	32	14.5
13	Hickory Hills Park District Martin and Kasey Meadow Park 8047 W. 91 st Pl. Hickory Hills, IL 60457	05/22	63.7	63.7	Topdressing fertilizer for turf growth	5	12.7
14	Evanston High School 1600 Dodge Ave. Evanston, IL 60201	05/22, 05/28	40.7	40.7	Topdressing fertilizer for turf growth	3	13.6
15	Edward Podczerwinski 11 Liberty Drive Lemont, IL 60439	05/22, 06/04, 06/05	47.2	47.2	Composted biosolids used as soil amendment for turf and tree establishment	1	47.2

TABLE 1 (Continued): USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			2 nd Quarter	Cumulative	Purpose	Area (acre)	Rate (ton/acre) ¹
16	Metropolitan Water Reclamation District of Greater Chicago (Lane Project) 6001 W. Pershing Rd. Cicero, IL 60804	06/04	320.2	320.2	Soil amendment for turf and tree establishment	9	35.6
17	Frank Ratulowski 14020 S. Lemont Rd. Homer Glen, IL 60441	06/11	5.6	5.6	Topdressing fertilizer for turf growth	0.5	11.1
18	The Plant 1400 W. 46 th St. Chicago, IL 60609	06/11	2.5	2.5	Soil amendment for landscaping	0.2	12.7
19	Maciej Szeliga 11 Riva Rd. Lemont, IL 60439	06/26	11.4	11.4	Soil amendment for turf and trees establishment	1	11.4

¹Application rate is based on quantity of biosolids distributed in the second quarter.

²Sum of air-dried and composted biosolids used.

TABLE 2: USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Purpose	Application	
			2 nd Quarter	Cumulative		Area (acre)	Rate (ton/acre) ¹
1	Chicago Park District Maggie Daley Park 337 E. Randolph St. Chicago, IL 60602	04/21 - 04/24, 04/27 - 04/30, 05/1, 05/14, 05/19 - 05/21, 05/27	863.6	1,059.6 ²	Composted biosolids used as soil amendment for turf and tree establishment	15.0	57.6
2	Chicago Park District Taylor Lauridsen Park 704 W. 42 nd St. Chicago, IL 60609	06/10, 06/11	105.1	105.1	Soil amendment for turf and tree establishment	3	35.0
3	Evergreen Park Community High School 9901 S. Kedzie Ave. Evergreen Park, IL 60805	6/24	42.9	42.9	Topdressing fertilizer for turf growth	3	14.3
4	Chicago Park District Seward Park 375 W. Elm St. Chicago, IL 60610	6/24	42.4	42.4	Soil amendment for turf and renovation of park	2	21.2

¹Application rate is based on quantity of biosolids distributed in the second quarter.

²Sum of air-dried and composted biosolids received from the Calumet and Stickney Water Reclamation Plants.

TABLE 3 (Continued): ANALYSIS OF AIR-DRIED AND COMPOSTED BIOSOLIDS APPLIED TO LAND FROM THE STICKNEY WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE SECOND QUARTER OF 2015

Sampling Date		22-Apr	24-Apr	30-Apr	1-May	2-May	6-May	8-May	8-May	11-May	13-May
SiteNo. ¹		1 ²	2 ²	3, 4	5, 6, 7	7	4, 8 ²	9	9 ²	1 ²	10 ²
<u>Constituent</u>	<u>Unit</u>										
K	"	3,428	4,970	2,180	2,343	2,625	3,556	4,460	5,548	2,785	3,084
Mn	"	575	2,439	410	409	406	532	398	326	569	617
Mo	"	4	5	11	11	12	4	12	6	5	5
Ni	"	42	24	47	46	47	39	46	24	45	56
Pb	"	58	73	130	127	127	56	122	70	61	42
Se	"	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Zn	"	534	456	894	866	895	529	837	452	607	562

TABLE 3 (Continued): ANALYSIS OF AIR-DRIED AND COMPOSTED BIOSOLIDS APPLIED TO LAND FROM THE STICKNEY WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE SECOND QUARTER OF 2015

SamplingDate		14-May	23-May	23-May	4-Jun	4-Jun	9-Jun	11-Jun	26-Jun	26-Jun
SiteNo. ¹		4, 11, 12, 13	4,7,14,	15 ²	19	16 ²	16 ²	17,18	4, 19 ²	4, 19 ²
<u>Constituent</u>	<u>Unit</u>									
pH		6.9	7.2	7.0	6.4	6.4	6.1	6.1	6.6	6.4
Total Solids	%	65.3	73.2	55.1	68.9	45.4	49.0	59.5	48.1	48.4
Total Volatile Solids	"	38.7	38.0	45.6	38.6	37.2	35.4	50.1	47.2	50.2
Volatile Acids as Acetic Acid	mg/kg	263	190	76	38	60	326	477	10	10
Total Kjeldahl Nitrogen	"	21,260	24,910	16,094	23,636	23,332	24,600	24,579	18,372	18,952
NH ₃ -N	"	3,835	3,335	86	3,718	2,258	2,273	174	54	54
Total P	"	18,436	21,771	17,480	20,493	26,063	26,604	23,723	15,538	20,219
As	"	7	6	<5	10	9	8	<5	<5	<5
Cd	"	9	8	1	8	4	5	1	3	3
Cr	"	140	131	84	133	156	161	77	95	147
Cu	"	477	455	475	464	422	437	494	360	762

TABLE 3 (Continued): ANALYSIS OF AIR-DRIED AND COMPOSTED BIOSOLIDS APPLIED TO LAND FROM THE STICKNEY WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE SECOND QUARTER OF 2015

SamplingDate		14-May	23-May	23-May	4-Jun	4-Jun	9-Jun	11-Jun	26-Jun	26-Jun
SiteNo. ¹		4, 11, 12, 13	4,7,14,	15 ²	19	16 ²	16 ²	17,18	4, 19 ²	4, 19 ²
<u>Constituent</u>	<u>Unit</u>									
Hg	mg/kg	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
K	"	5,113	4,579	2,772	4,191	4,509	4,079	2,866	4,421	5424
Mn	"	408	397	571	406	475	505	518	486	896
Mo	"	12	11	4	10	12	13	6	5	6
Ni	"	46	44	41	45	43	44	55	40	85
Pb	"	127	119	56	124	105	111	42	73	83
Se	"	<5	<5	<5	<5	<5	<5	<5	<5	<5
Zn	"	859	819	563	849	793	839	563	573	954

¹Batches of air-dried or composted biosolids applied to sites are listed in [Table 1](#).

²Composted biosolids.

TABLE 4: ANALYSIS OF AIR-DRIED AND COMPOSTED BIOSOLIDS APPLIED TO LAND FROM THE CALUMET WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE SECOND QUARTER OF 2015

Sampling Date		24-Apr	5-May	22-May	28-May	19-Jun
Site No. ¹		1	1	1	1 ²	2, 3, 4
<u>Constituent</u>	<u>Unit</u>					
pH		7.7	6.9	6.7	6.6	6.4
Total Solids	%	50.8	56.0	78.3	71.4	57.2
Total Volatile Solids	"	47.4	46.0	48.4	47.2	41.5
Volatile Acids as Acetic Acid	mg/kg	167	177	172	182	93
Total Kjeldahl Nitrogen	"	29,775	28,394	23,277	11,397	11,982
NH ₃ -N	"	3,032	3,798	1,311	2,526	1,439
Total P	"	24,158	22,000	19,709	9,154	14,501
As	"	8	10	8	9	8
Cd	"	1	1	2	2	1
Cr	"	53	51	50	46	49
Cu	"	361	363	396	439	421
Hg	"	0.6	0.5	0.6	0.4	0.8
K	"	3,834	4,009	3,548	1,909	1,891
Mn	"	855	846	821	887	1,091
Mo	"	9	9	10	12	8
Ni	"	25	24	25	27	27
Pb	"	73	68	67	73	90
Se	"	<5	<5	<5	<5	<5
Zn	"	1,030	1,028	1,102	1,201	1,208

¹Batches of air-dried or composted biosolids applied to sites are listed in Table 2.

²Composted biosolids.