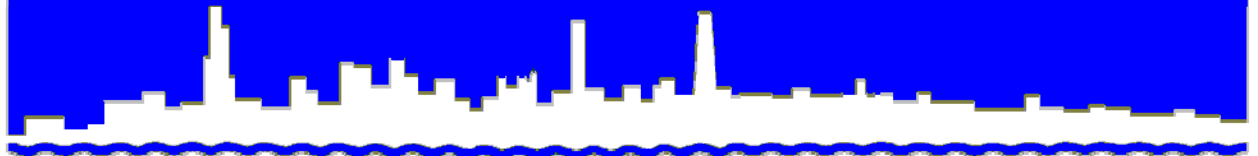


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 16-36

CONTROLLED SOLIDS DISTRIBUTION REPORT

FOR SECOND QUARTER 2016

October 2016

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, Illinois 60611-3154 f: 312.751.5194 312.751.5190

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Director of Monitoring and Research

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August 30, 2016

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 No. 2015-SC-59620, Second Quarter (April – June 2016)

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 2016), as required by Illinois Environmental Protection Agency Permit No. 2015-SC-59620.

Sludge flow schematic diagrams for solids processed during April – June 2016 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 43 sites during the second quarter of 2016. 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,

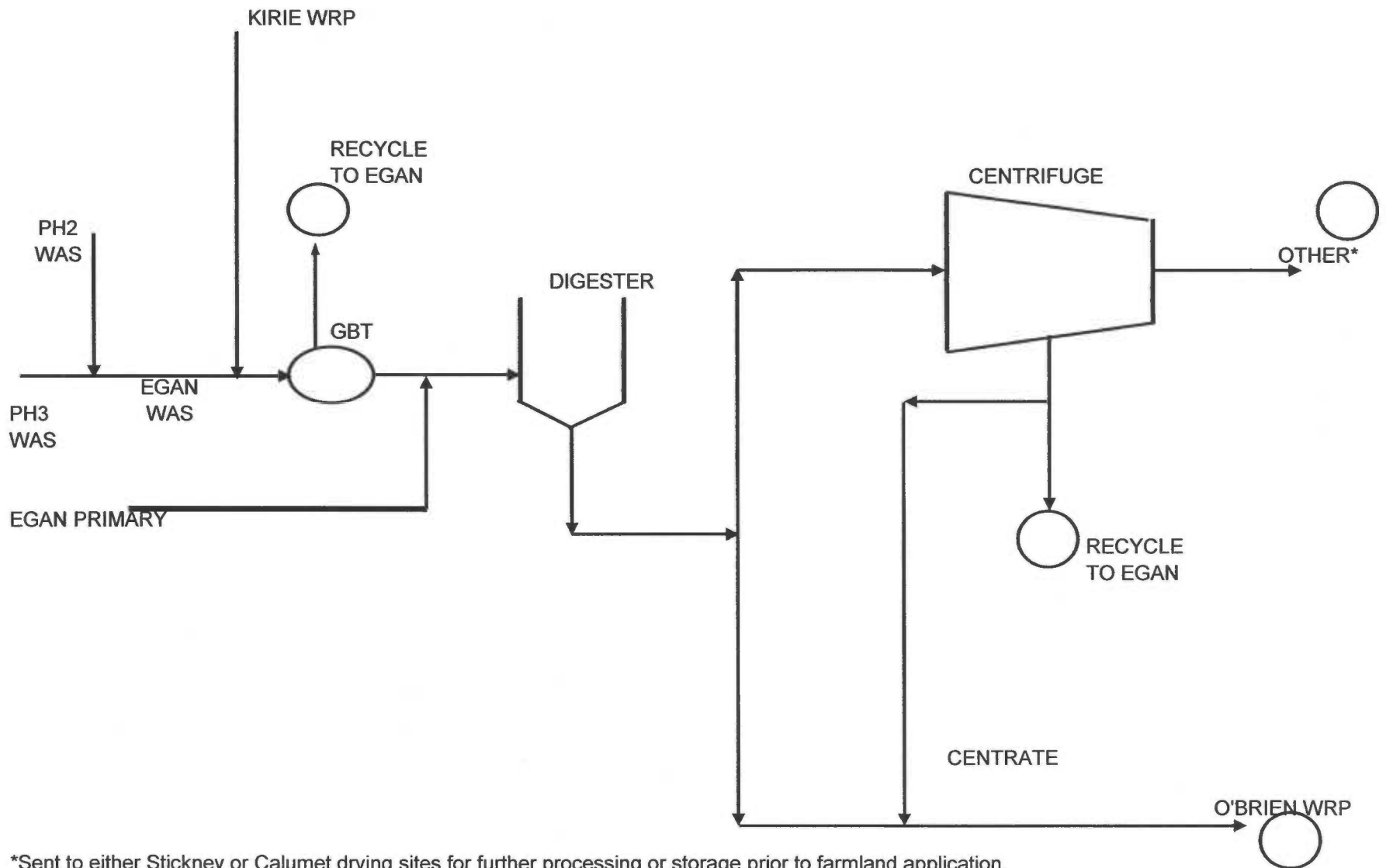
Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research

TCG:HZ:OO:cm

Attachments

cc/att: Mr. V. Aistars (USEPA)/Mr. J. Patel (IEPA)
Mr. J. Murray/Mr. B. Garelli/Mr. T. Conway
Mr. D. Collins/Dr. H. Zhang/Dr. A. Cox
Dr. G. Tian/Dr. O. Oladeji

FIGURE 1: JOHN E. EGAN WATER RECLAMATION PLANT OPERATIONAL FLOWCHART FOR SECOND QUARTER 2016



*Sent to either Stickney or Calumet drying sites for further processing or storage prior to farmland application.

FIGURE 2: CALUMET WATER RECLAMATION PLANT OPERATIONAL FLOWCHART FOR SECOND QUARTER 2016

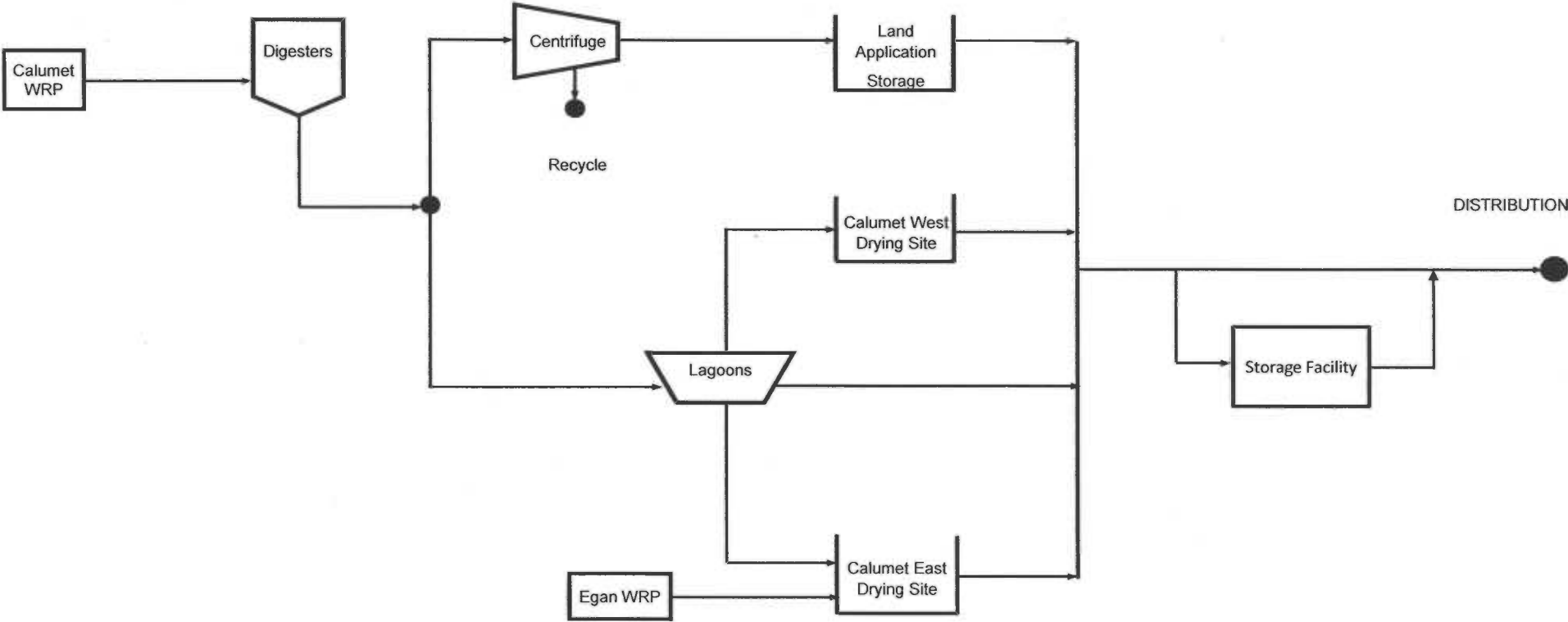


FIGURE 3: STICKNEY WATER RECLAMATION PLANT OPERATIONAL FLOW CHART FOR 2ND QUATER 2016

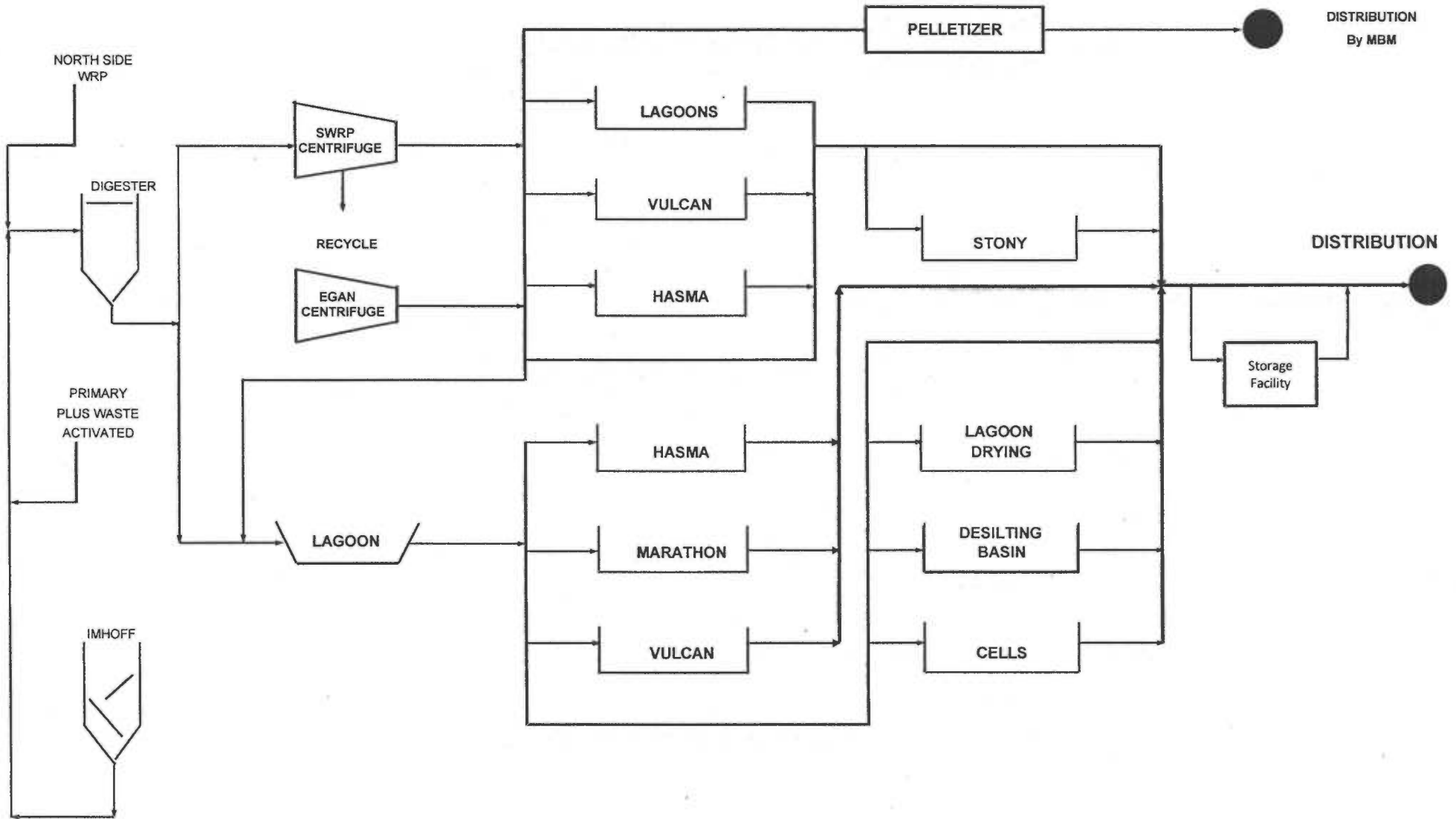


TABLE 1: USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Application		
			Second Quarter	Cumulative	Purpose	Area (acre)	Rate (ton/acre)
Air-Dried Biosolids							
1	Republic Service 2111 Coalville Rd. Streator, IL 61364	5/17	30.2	30.2	Topdressing fertilizer for turf growth	2	15.1
2	Republic Service 14206 E. 2100 N. Rd. Pontiac, IL 61764	5/24	429.1	429.1	Topdressing fertilizer for turf growth	30	14.3
3	Republic Service 1214 S. Bataan Rd. Dixon, IL 61021	6/8	87.7	87.7	Topdressing fertilizer for turf growth	6	14.6
4	Evanston High School 1600 Dodge Ave. Evanston, IL 60201	6/13, 6/14	57.2	57.2	Topdressing fertilizer for turf growth	4	14.3
5	Village of Lyons 4200 Lawndale Ave. Lyons, IL 60534	6/13, 6/14	140.4	140.4	Topdressing fertilizer for turf growth	10	14.0
6	Metropolitan Water Reclamation District of Greater Chicago O'Brien WRP 3500 Howard St., Skokie, IL 60076	6/13, 6/15, 6/16, 6/17, 6/20, 6/24	1,120.7	1,120.7	Soil amendment for turf and trees establishment	20	56.0

TABLE 1 (Continued): USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Purpose	Application	
			Second Quarter	Cumulative		Area (acre)	Rate (ton/acre)
Air-Dried Biosolids							
7	Bolingbrook Park District Lily Cache Park 1387 Hassert Blvd. Bolingbrook, IL 60490	6/20	179.3	179.3	Topdressing fertilizer for turf growth	12	14.9
8	East Leyden High School 3400 Rose St. Franklin Park, IL 60131	6/21	30.0	30.0	Topdressing fertilizer for turf growth	2.5	12.0
9	Oak Lawn Park District Central Park 9400 S. Kenton Ave. Oak Lawn, IL 60453	6/21	15.4	15.4	Topdressing fertilizer for turf growth	1.1	14.0
10	Oak Lawn Park District Keeler Park 93 rd & Keeler Ave. Oak Lawn, IL 60453	6/21	15.1	15.1	Topdressing fertilizer for turf growth	1.1	13.7
11	Oak Lawn Park District Worthbrook Park 90th & Ridgeland Ave. Oak Lawn, IL 60453	6/21	14.6	14.6	Topdressing fertilizer for turf growth	1	14.6
12	Indian Boundary Park 990 W. Boughton Rd. Bolingbrook, IL 60440	6/27	166.8	166.8	Topdressing fertilizer for turf growth	12	13.9

TABLE 1 (Continued): USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS AND COMPOSTED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Purpose	Application	
			Second Quarter	Cumulative		Area (acre)	Rate (ton/acre)
Composted Biosolids							
13	Stickney WRP 6001 W. Pershing Rd. Cicero, IL 60804	4/13	9.0	9.0	Compost as soil amendment for garden	0.2	44.9
14	Chicago Urban Farm 2619 E. 76th St. Chicago, IL	4/29, 5/5, 5/18	14.3	14.3	Compost as soil amendment for garden	0.3	47.7
15	Village of Oak Lawn 9446 S. Raymond Ave. Oak Lawn, IL 60453	6/8, 6/16	9.9	9.9	Compost as soil amendment for trees	0.2	49.4
16	United Parcel Service 1 UPS Way Hodgkins, IL 60525	6/14	40.7	40.7	Compost as soil amendment for trees	1	40.7
17	Lake Street Supply 1810 W. Lake St. Chicago, IL 60612	6/29	6.2	6.2	Compost as soil amendment for garden	0.2	31.0

TABLE 2: USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Purpose	Application	
			Second Quarter	Cumulative		Area (acre)	Rate (ton/acre)
1	Midlothian Park District Memorial Park 145 th & Sawyer Midlothian, IL 60445	5/24	17.9	17.9	Topdressing fertilizer for turf growth	1.5	11.9
2	Village of Orland Park Freedom Park 13627 Lorgan Dr. Orland Park, IL 60467	6/2	42.7	42.7	Topdressing fertilizer for turf growth	3.0	14.2
3	Highway Department 16125 S. Wolf Road Orland Park, IL 60462	6/2	13.0	13.0	Soil amendment for turf and renovation of park	0.5	26.0
4	A. B. Sanchez Landscaping 2814 E. Hintz Rd. Arlington Heights, IL 60004	6/3	13.8	13.8	Soil amendment for turf and renovation of park	0.5	27.6
5	Chicago Park District Riis Park 6100 W. Fullerton Ave. Chicago, IL 60639	5/31	165.4	165.4	Topdressing fertilizer for turf growth	12	13.8
6	Chicago Park District Rogers Park 7345 N. Washtenaw Ave. Chicago, IL 60649	6/7	13.3	13.3	Topdressing fertilizer for turf growth	1	13.3

TABLE 2 (Continued): USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Purpose	Application	
			Second Quarter	Cumulative		Area (acre)	Rate (ton/acre)
7	Chicago Park District Touchy Park 7348 N. Paulina St. Chicago, IL 60626	6/7	12.7	12.7	Topdressing fertilizer for turf growth	1	12.7
8	Chicago Park District Warren Park 6601 N. Western Ave. Chicago, IL 60645	6/7	173.4	173.4	Topdressing fertilizer for turf growth	12	14.4
9	Chicago Park District Winnemac Park 5100 N. Leavitt St. Chicago, IL 60625	6/8	182.0	182.0	Topdressing fertilizer for turf growth	13	14.0
10	Chicago Park District Welles Park 2333 W. Sunnyside Ave. Chicago, IL 60625	6/9	72.3	72.3	Topdressing fertilizer for turf growth	5	14.5
11	Chicago Park District Kelvyn Park 4438 W. Wrightwood Ave. Chicago, IL 60639	6/16	82.1	82.1	Topdressing fertilizer for turf growth	6	13.7

TABLE 2 (Continued): USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Application		
			Second Quarter	Cumulative	Purpose	Area (acre)	Rate (ton/acre)
12	Chicago Park District Horner Park 2741 W. Montrose Ave. Chicago, IL 60618	6/13, 6/17	308.5	308.5	Topdressing fertilizer for turf growth	22	14.0
13	Chicago Park District Athletic Field Park 3546 W. Addison St. Chicago, IL 60618	6/17	32.7	32.7	Topdressing fertilizer for turf growth	2.5	13.1
14	Chicago Park District Norwood Park 5801 N. Natoma Ave. Chicago, IL 60631	6/21	111.3	111.3	Topdressing fertilizer for turf growth	8	13.9
15	Chicago Park District Oriole Park 5430 N. Olcott Ave. Chicago, IL 60656	6/21	112.7	112.7	Topdressing fertilizer for turf growth	8	14.1
16	Moody Bible Institute Soccer Field 820 N. LaSalle St. Chicago, IL 60610	6/7	12.3	12.3	Topdressing fertilizer for turf growth	1	12.3

TABLE 2 (Continued): USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Purpose	Application	
			Second Quarter	Cumulative		Area (acre)	Rate (ton/acre)
17	Oak Lawn Spartan Athletic Complex 4400 West 93 rd St. Oak Lawn, IL 60453	6/8, 6/9	83.8	83.8	Topdressing fertilizer for turf growth	6	14.0
18	Reavis High School 6034 W. 77 th St. Burbank, IL 60459	6/10	52.4	52.4	Topdressing fertilizer for turf growth	4	13.1
19	Cinder Ridge Golf Course 24801 Lakepoint Dr. Wilmington, IL 60481	6/10	86.1	86.1	Topdressing fertilizer for turf growth	6	14.3
20	Evergreen Park High School 9901 S. Kedzie Ave. Evergreen Park, IL 60805	6/13, 6/14	58.4	58.4	Topdressing fertilizer for turf growth	4	14.6
21	De La Salle High School 3400 S. Michigan Ave. Chicago, IL 60616	6/16, 6/17, 6/20	42.7	42.7	Topdressing fertilizer for turf growth	2	21.3
22	Evanston High School 1600 Dodge Ave. Evanston, IL 60201	6/27	24.1	81.3	Topdressing fertilizer for turf growth	6	13.5

TABLE 2 (Continued): USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE SECOND QUARTER OF 2016

Site No.	Name and Address of User	Dates	Quantity, Dry Ton		Purpose	Application	
			Second Quarter	Cumulative		Area (acre)	Rate (ton/acre)
23	Tinley Park Park District Dog Park 8125 W. 171 st St. Tinley Park, IL 60477	6/27	26.6	26.6	Topdressing fertilizer for turf growth	2	13.3
24	Tinley Park Park District Centennial Park 7601 167 th St. Tinley Park, IL 60477	6/16, 6/28, 6/30	299.7	299.7	Soil amendment for turf and trees establishment	10	30.0
25	Indian Boundary Park 990 W. Boughton Rd. Bolingbrook, IL 60440	6/28	148.6	315.4	Topdressing fertilizer for turf growth	22	14.3
26	Bolingbrook Park District Central Park 201 Recreation Dr. Bolingbrook, IL 60440	6/29	189.8	189.8	Topdressing fertilizer for turf growth	14	13.6

TABLE 3: ANALYSIS OF AIR-DRIED BIOSOLIDS AND COMPOSTED BIOSOLIDS APPLIED TO LAND FROM THE STICKNEY WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE SECOND QUARTER OF 2016

Sampling Date		24-May	24-May	8-Jun	8-Jun	13-Jun	20-Jun	27-Jun	5-May ²
Site No. ¹		1, 2	3	3	4, 6	5, 6	7, 8, 9, 10, 11	12	13, 14, 15, 16, 17
<u>Constituent</u>	<u>Unit</u>								
pH		6.7	6.8	7.2	7.6	6.2	6.7	6.6	6.5
Total Solids	%	76.3	70.4	63.9	42.6	72.9	68.2	69.2	49.1
Total Volatile Solids	"	38.1	42.9	41.4	55.8	41.9	41.6	42.7	50.3
Volatile Acids as Acetic Acid	mg/kg	29	31	8	12	19	120	68	10
Total Kjeldahl Nitrogen	"	23,061	27,616	24,626	14,636	21,834	NR ⁴	27,642	17,546
NH ₃ -N	"	2,825	4,082	6,209	NA ³	2,630	3,161	3,913	225
Total P	"	2,453	24,836	23,343	8,881	21,513	NR	26,658	18,902
As	"	6	5	<5	<5	7	6	6	<5
Cd	"	5	8	8	2	8	8	8	2
Cr	"	184	208	211	54	221	215	213	72
Cu	"	425	478	508	187	502	496	482	413
Hg	"	0.7	0.6	0.7	0.3	0.7	0.8	0.8	0.7
K	"	3,129	3,193	3,083	3,744	3,061	2,865	3,082	3,106
Mn	"	504	544	561	360	588	568	559	681
Mo	"	12	12	13	4	12	13	13	5
Ni	"	41	49	51	23	54	51	51	44
Pb	"	114	99	104	40	104	99	101	50
Se	"	<5	<5	<5	<5	<5	<5	<5	<5
Zn	"	899	940	992	326	1,029	996	973	678

¹Batches of biosolids applied to sites are listed in Table 1.

²Composted biosolids.

³Not available due to inadequate sample quantity.

⁴Not reportable.

TABLE 4: ANALYSIS OF AIR-DRIED BIOSOLIDS APPLIED TO LAND FROM THE CALUMET WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE SECOND QUARTER OF 2016

Sampling Date		12-May	1-Jun	8-Jun	15-Jun	15-Jun	22-Jun	28-Jun
Site No. ¹		1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	2, 16, 17	18, 19, 20	12	12, 13, 14, 15	21, 22, 23, 24	24, 25, 26
<u>Constituent</u>	<u>Unit</u>							
pH		6.8	6.2	7.0	6.5	6.6	7.1	6.4
Total Solids	%	54.3	74.0	67.2	74.7	79.0	72.7	77.6
Total Volatile Solids	"	40.4	32.4	39.3	40.4	40.7	41.9	40.6
Volatile Acids as Acetic Acid	mg/kg	177	34	91	7	<7	7	35
Total Kjeldahl Nitrogen	"	25,747	23,475	24,933	25,588	26,330	23,872	25,257
NH ₃ -N	"	2,003	2,139	2,620	2,559	2,974	1,836	2,358
Total P	"	27,541	22,851	23,417	26,134	21,647	24,355	22,624
As	"	8	7	5	7	6	7	10
Cd	"	2	2	2	2	2	2	2
Cr	"	54	54	50	53	51	57	54
Cu	"	389	362	355	371	380	404	382
Hg	"	0.6	0.8	0.6	0.7	0.8	0.7	1.2
K	"	1,606	2,492	1,988	2,354	2,353	2,257	2,265
Mn	"	1,325	1,262	1,209	1,284	1,003	1,316	1,135
Mo	"	6	7	7	7	10	6	9
Ni	"	27	27	26	27	28	28	30
Pb	"	93	89	85	89	83	93	90
Se	"	<5	<5	<5	<5	<5	<5	<5
Zn	"	1,152	1,116	1,090	1,075	1,070	1,202	1,180

¹Batches of biosolids applied to sites are listed in Table 2.