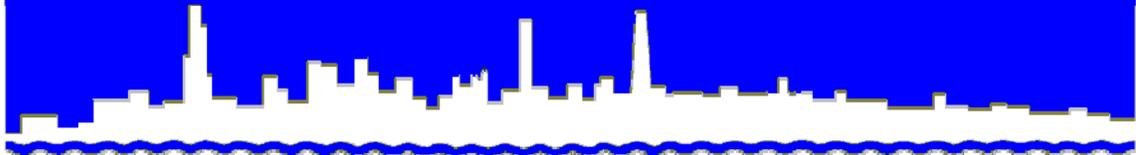


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 15-37

CONTROLLED SOLIDS DISTRIBUTION REPORT

FOR THIRD QUARTER 2015

December 2015

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Metropolitan Water Reclamation District of Greater Chicago

**CECIL LUE-HING RESEARCH AND DEVELOPMENT COMPLEX
6001 WEST PERSHING ROAD CICERO, ILLINOIS 60804-4112**

THOMAS C. GRANATO, Ph.D., BCES
Director of Monitoring and Research

November 27, 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, Third Quarter (July – September 2015)

This letter transmits information and data for the Metropolitan Water Reclamation District of Greater Chicago – Controlled Solids Distribution Program for the third quarter (July – September 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 July – September 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 34 sites during the third 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,

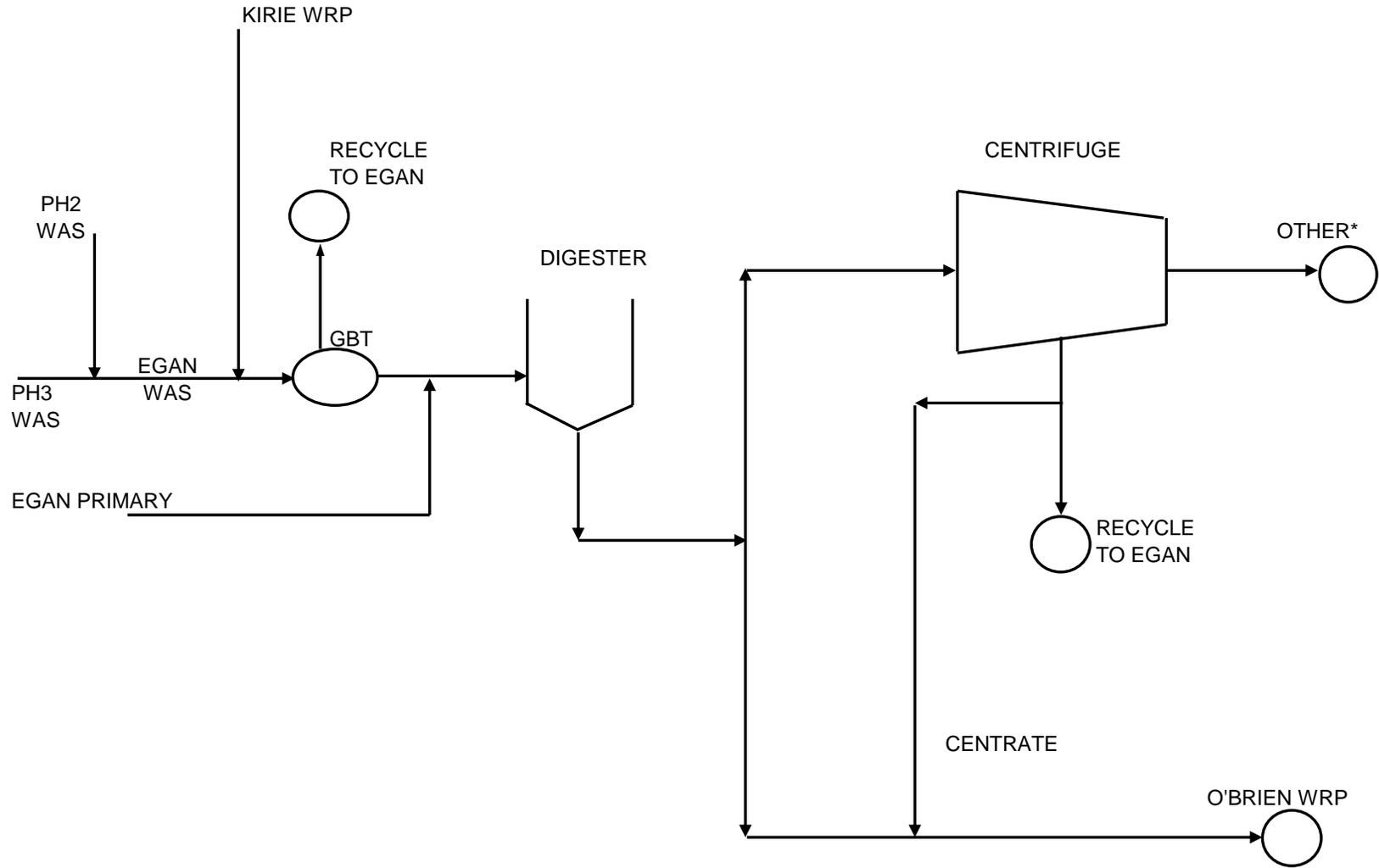
Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research

TCG:HZ:OO:cm

Attachments

cc/att: Mr. V. Aistars (USEPA)/Mr. J. Patel (IEPA)
Ms. M. Sharma/Mr. B. Garelli/Mr. T. Conway
Mr. D. Collins/Dr. H. Zhang/Dr. A. Cox
Dr. L. Hundal/Dr. O. Oladeji

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



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

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

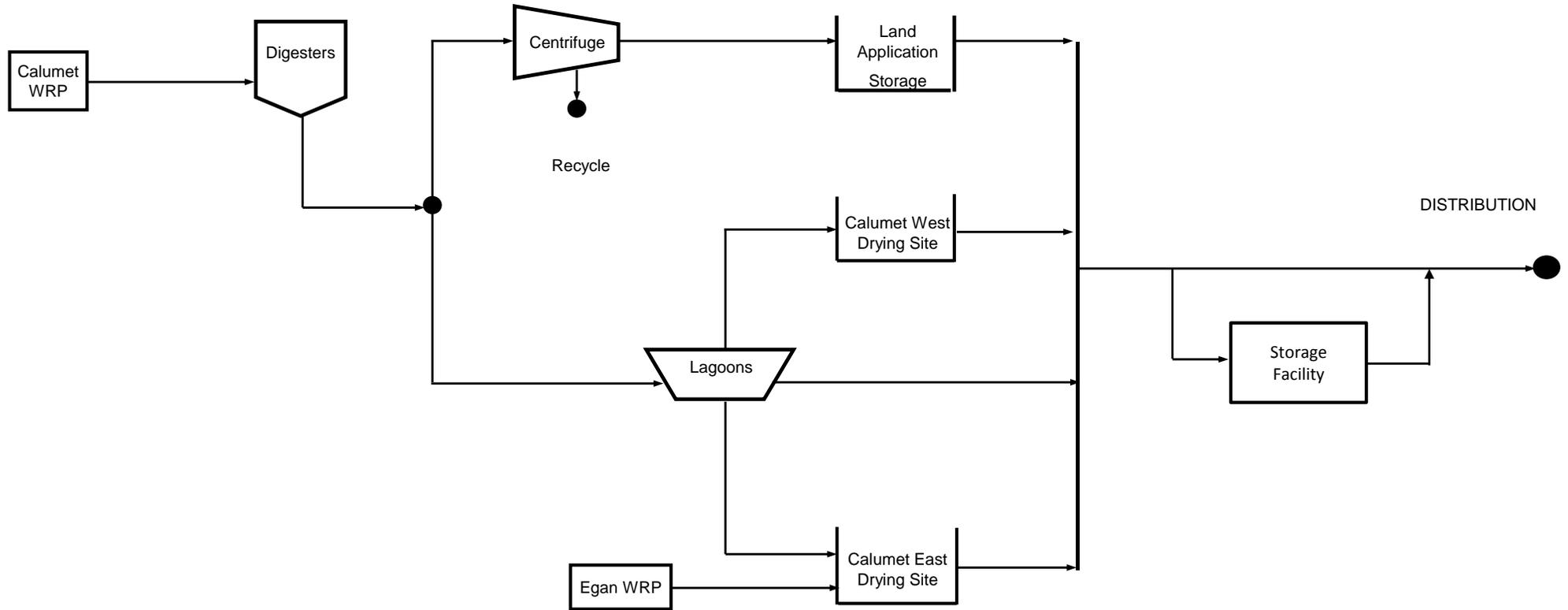


FIGURE 3: STICKNEY WATER RECLAMATION PLANT OPERATIONAL FLOW CHART FOR THIRD QUARTER 2015

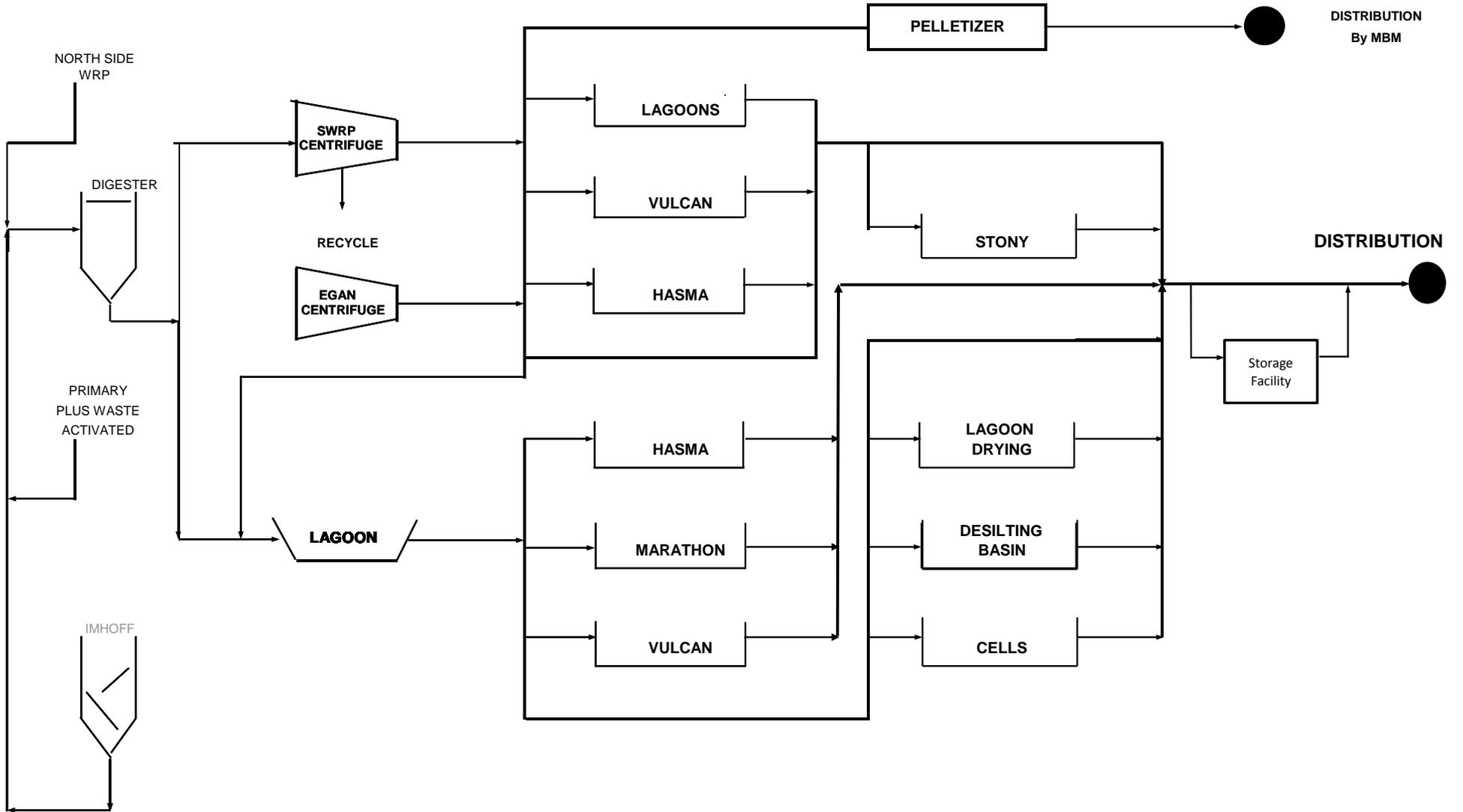


TABLE 1: USER INFORMATION FOR THE STICKNEY WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE THIRD QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
1	Ed Podczerwinski (Home Owner) 11 Liberty Dr. Lemont, IL 60439	7/2	4.7	51.9	Soil amendment for turf and tree establishment	2	25.9
2	Maciej Szeliga (Home Owner) 11 Riva Rdg. Lemont, IL 60440	7/2, 8/4	38.4	49.8	Soil amendment for turf and tree establishment	2	24.9
3	Piper & Son Landscaping Co. 31 W. 320 Ramm Dr. Naperville, IL 60564	7/9, 7/10, 7/23, 8/12, 8/13, 8/17, 8/27, 9/18	130.1	266.8	Soil amendment for turf and tree establishment	8	33.3
4	Metropolitan Water Reclamation District of Greater Chicago (Lane Project) 6001 W. Pershing Rd. Cicero, IL 60804	7/22, 7/24, 7/29, 7/30, 8/3, 8/4, 8/12, 8/21, 8/24, 8/25,	1,341.2	1,661.4	Soil amendment for turf and tree establishment	38	43.7
5	Chicago Park District Winnemac Park 5100 N. Leavitt St. Chicago, IL 60625	7/31	98.6	98.6	Topdressing fertilizer for turf growth	7	14.1

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

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
6	Nava R Rijal (Home Owner) 815 W. 59 th St. La Grange Highlands, IL 60525	8/4	5.4	5.4	Soil amendment for turf and tree establishment	0.2	26.9
7	Brandenburg (Shell) 8800 W. 71 st St. Bedford Park, IL 60638	8/12, 8/13, 8/14, 8/31, 9/1, 9/2, 9/3	912.3	912.3	Soil amendment for turf and tree establishment	19	48.0
8	Chicago Park District Rogers Park 7345 N. Washtenaw Ave. Chicago, IL 60645	8/13, 8/14, 8/17	267.5	267.5	Topdressing fertilizer for turf growth	18	14.9
9	Joe Miller 8922 W. 83 rd Pl. Justice, IL 60458	8/14, 8/21	19.1	19.1	Soil amendment for turf and tree establishment	0.7	27.3
10	Antonio Acevedo (Home Owner) 945 W. Cullerton St. Chicago, IL 60608	8/21	10.7	10.7	Soil amendment for turf and tree establishment	0.5	21.3

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

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
11	Oak Forest Park District Convent Park Soccer Field 149 th & Menard Ave. Oak Forest, IL 60426	8/28	30.3	30.3	Topdressing fertilizer for turf growth	2	15.1
12	Oak Forest Park District El Morro Park 155 th & Arroyo Oak Forest, IL 60426	8/28	93.7	93.7	Topdressing fertilizer for turf growth	8	11.7
13	Oak Forest Park District Gene Leonard Park 149 th & Laramie Ave. Oak Forest, IL 60426	8/28	16.0	16.0	Topdressing fertilizer for turf growth	0.5	32.1
14	Chicago Park District Pottawattomie Park 7340 N. Rogers Ave. Chicago, IL 60626	8/25	49.4	49.4	Topdressing fertilizer for turf growth	3	16.5
15	Chicago Park District Welles Park 2333 W. Sunnyside Ave. Chicago, IL 60625	8/25	51.1	51.1	Topdressing fertilizer for turf growth	4	12.8

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

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
16	Chicago Park District Portage Park 4100 N. Long Ave. Chicago, IL 60641	8/26, 8/27	244.2	244.2	Topdressing fertilizer for turf growth	17	14.4
17	Kamlesh Patel (Home Owner) 7132 W. 182 nd St. Tinley Park, IL 60477	8/14, 9/4, 9/11	29.7	29.7	Soil amendment for turf and tree establishment	1	29.7
18	Stony Creek Golf Course 5850 W. 103 rd St. Oak Lawn, IL 60453	8/31, 9/1, 9/2, 9/3, 9/4	365.7	365.7	Topdressing fertilizer for turf growth	28	13.1
19	Luke Lobo (Home Owner) 17525 S. Parker Rd. Homer Glen, IL 60491	9/1, 9/2, 9/4	106.9	106.9	Soil amendment for turf and tree establishment	4	26.7
20	Dariusz (Dereck) Clucias (Home Owner) 8415 Crescent Ct. Willow Springs, IL 60480	9/4	5.2	5.2	Soil amendment for turf and tree establishment	0.2	25.9

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

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
21	Pizzo Native Plant Nursery 10729 Pine Rd. Leland, IL 60531	9/23	0.1	0.1	Soil amendment for turf and tree establishment	<0.1	24.1
22	North Shore Country Club 1340 Glenview Road Glenview, IL 60025	9/23, 9/24, 9/25	190.4	225.4	Soil amendment for turf and tree establishment	5	45.1
23	Metropolitan Water Reclamation District of Greater Chicago 6001 W. Pershing Rd. Cicero, IL 60804	9/28	24.8	24.8	Soil amendment for turf establishment	2	12.4

¹Sum of air-dried and composted biosolids from the Calumet and Stickney Water Reclamation Plants.

²Application rate is based on quantity of biosolids distributed during the third quarter.

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

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
1	Chicago Park District Seward Park 375 W. Elm St. Chicago, IL 60610	7/2	54.9	54.9	Topdressing fertilizer for turf growth	4	13.7
2	Chicago Park District Dawes Park 8052 S. Damen Ave. Chicago, IL 60620	7/2	66.4	66.4	Topdressing fertilizer for turf growth	5	13.3
3	Metropolitan Water Reclamation District of Greater Chicago Calumet WRP 400 E. 130th St. Chicago, IL 60628	7/2, 7/6, 7/8, 7/10	253.2	253.2	Soil amendment for turf and tree establishment	6.0	42.2
4	De La Salle High School 3455 S. Wabash Ave. Chicago, IL 60616	7/08, 7/09	41.1	41.1	Topdressing fertilizer for turf growth	3	13.7
5	Chicago Park District Douglas Park 1401 S. Sacramento Chicago, IL 60623	7/21, 7/22	383.1	383.1	Topdressing fertilizer for turf growth	26	14.7

TABLE 2 (Continued) USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE THIRD QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
6	Chicago Park District Harrison Park 1824 S. Wood St. Chicago, IL 60608	7/23	28.2	28.2	Topdressing fertilizer for turf growth	2	14.1
7	Chicago Park District Horner Park 2741 W. Montrose Ave. Chicago, IL 60618	7/23, 7/24	223.2	223.2	Topdressing fertilizer for turf growth	16	13.9
8	Chicago Park District Warren Park 6601 N. Western Ave. Chicago, IL 60645	7/27, 7/28	318.8	318.8	Topdressing fertilizer for turf growth	25	12.8
9	Chicago Park District Portage Park 4100 N. Long Ave. Chicago, IL 60641	7/30	77.4	321.6	Topdressing fertilizer for turf growth	23	14.0
10	Chicago Park District Welles Park 2333 W. Sunnyside Ave. Chicago, Illinois 60625	7/30	81.2	132.3	Topdressing fertilizer for turf growth	10	13.2

TABLE 2 (Continued): USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE THIRD QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
11	Chicago Park District Winnemac Park 5100 N. Leavitt St. Chicago, IL 60625	7/31	111.8	210.4	Topdressing fertilizer for turf growth	16	13.2
12	Burbank Park District Narragansette Park 77 th & Narragansette Burbank, IL 60459	8/06	28.4	28.4	Topdressing fertilizer for turf growth	2	14.2
13	Chicago Park District - Maggie Daily Park 337 E. Randolph St. Chicago, IL 60602	9/24	2.4	1,062.0	Soil amendment for turf and tree establishment	20	53.1
14	Cinder Ridge Golf Course 24801 Lakepoint Drive Wilmington, IL 60481	7/02, 7/06, 9/01, 9/02, 9/03, 9/08, 9/10, 9/15 - 9/17, 9/22, 9/23, 9/24	1,096.4	1,096.4	Soil amendment for turf establishment	25	43.9

TABLE 2 (Continued): USER INFORMATION FOR THE CALUMET WATER RECLAMATION PLANT'S AIR-DRIED BIOSOLIDS DISTRIBUTED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING THE THIRD QUARTER OF 2015

Site No.	Name and Address of User	Dates	Quantity, dry ton		Application		
			3rd Quarter	Cumulative ¹	Purpose	Area (acre)	Rate (ton/acre) ²
15	Metropolitan Water Reclamation District of Greater Chicago (Lane Project) 6001 W. Pershing Rd. Cicero, IL 60804	9/04, 9/08, 9/10, 9/15, 9/16, 9/17	519.9	2,181.3	Soil amendment for turf and tree establishment	40	54.5
16	Brandenburg (Shell) 8800 W. 71 st St. Bedford Park IL 60638	9/04, 9/08	243.5	1,155.8	Soil amendment for turf and tree establishment	25	46.2

¹Sum of air-dried and composted biosolids from Calumet and Stickney Water Reclamation Plants.

²Application rate is based on quantity of biosolids distributed during the third quarter.

TABLE 3: ANALYSIS OF AIR-DRIED BIOSOLIDS APPLIED TO LAND FROM THE STICKNEY WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE THIRD QUARTER OF 2015

Sampling Date		2-Jul	10-Jul	22-Jul	23-Jul	31-Jul	3-Aug	4-Aug	12-Aug
Site No. ¹		1, 2 ²	3	3, 4	3	4	4, 5	2, 6	7,8
<u>Constituent</u>	<u>Unit</u>								
pH		6.5	6.3	6.93	6.34	7.46	7.73	6.3	7.24
Total Solids	%	47.7	56.5	59.2	61.1	73.4	64.6	60.5	66.5
Total Volatile Solids	"	52.3	49.6	57.2	49.6	39.1	40.9	50.0	39.8
Volatile Acids as Acetic Acid	mg/kg	31	9	<7	8	7	76	26	56
Total Kjeldahl Nitrogen	"	26,225	11,124	29,876	23,525	26,665	30,777	21,991	28,100
NH ₃ -N	"	122	14	2,252	191	4,761	6,666	82	4,832
Total P	"	26,695	10,582	30,124	25,037	20,492	11,920	23,251	22,381
As	"	<5	<5	<5	<5	5	6	<5	<5
Cd	"	2	2	1	2	11	12	2	5
Cr	"	84	97	75	89	135	140	87	61
Cu	"	476	505	455	501	480	505	576	204
Hg	"	0.7	0.9	<0.3	0.4	0.8	1.0	0.9	0.7
K	"	2,576	2,714	3,370	2,533	2,171	2,292	2,100	3,826
Mn	"	571	773	516	606	455	467	640	203
Mo	"	4	4	5	5	11	13	5	5
Ni	"	58	59	57	60	49	51	65	22
Pb	"	41	44	35	43	114	117	48	51
Se	"	<5	<5	<5	<5	<5	<5	<5	<5
Zn	"	601	596	544	587	868	906	637	395

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

Sampling Date		12-Aug	12-Aug	14-Aug	21-Aug	24-Aug	25-Aug	31-Aug	4-Sep	18-Sep
Site No.		4	3	9, 17	9, 10, 11, 12, 13	4	14, 15, 16	7, 18	19, 20, 21	3, 22
<u>Constituent</u>	<u>Unit</u>									
pH		6.88	6.42	6.81	6.29	6.82	6.17	6.32	6.58	6.43
Total Solids	%	73.6	61.5	56.7	51.5	65.6	78.0	58.3	54.0	58.8
Total Volatile Solids	"	55.3	46.6	49.6	44.6	53.2	39.0	40.3	51.0	46.5
Volatile Acids as Acetic Acid	mg/kg	91	23	44	<7	12	7	<7	<7	<7
Total Kjeldahl Nitrogen	"	20,590	21,209	22,503	19,220	23,540	23,132	26,266	22,306	22,115
NH ₃ -N	"	2,789	40	338	31	3,664	1,933	2,466	262	62
Total P	"	13,688	23,240	22,435	21,589	15,617	20,412	23,144	25,271	25,778
As	"	<5	<5	<5	<5	<5	6	8	<5	<5
Cd	"	2	2	2	2	3	10	11	2	2
Cr	"	54	89	92	96	78	125	137	89	88
Cu	"	208	520	545	557	258	432	462	517	530
Hg	"	<0.3	0.8	0.7	0.9	0.5	1.1	1.1	0.9	1.0
K	"	3,209	2,812	2,604	2,283	4,162	3,253	4,203	2,584	2,032
Mn	"	267	596	638	692	430	424	445	655	604
Mo	"	5	3	4	4	3	10	9	<2	2
Ni	"	21	61	65	65	28	44	48	60	61
Pb	"	47	44	49	49	76	104	110	43	NA3
Se	"	<5	<5	<5	<5	<5	<5	<5	<5	<5
Zn	"	379	610	642	650	528	752	838	576	598

¹Batches of air dried and composted biosolids applied to sites are listed in Table 1.

²Composted biosolids.

³Not available at reporting time.

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

Sampling Date Site No. ¹		2-Jul 1, 2	10-Jul 3	10-Jul 1	17-Jul 13	17-Jul 4, 5	6-Aug 5
<u>Constituent</u>	<u>Unit</u>						
pH		5.9	5.5	5.9	6.4	6.5	5.8
Total Solids	%	68.9	55.3	60.9	66.8	58.8	70.3
Total Volatile Solids	"	45.9	44.1	40.7	40.7	40.3	40.3
Volatile Acids as Acetic Acid	mg/kg	<7	23	31	13	14	<7
Total Kjeldahl Nitrogen	"	24,773	23,751	24,540	24,142	24,554	23,011
NH ₃ -N	"	1,072	101	1,790	2,594	1,634	1,381
Total P	"	24,412	25,478	24,408	23,771	24,285	24,364
As	"	8	8	12	11	12	11
Cd	"	2	2	2	2	2	2
Cr	"	54	56	59	60	60	58
Cu	"	381	389	372	396	365	382
Hg	"	<0.3	0.8	1.9	0.9	0.6	1.2
K	"	3,313	3,359	4,211	3,529	4,607	4,149
Mn	"	948	952	1,029	1,096	1,004	1,039
Mo	"	9	10	10	10	8	9
Ni	"	26	26	28	30	27	28
Pb	"	75	75	90	93	87	90
Se	"	<5	<5	<5	<5	<5	<5
Zn	"	1,134	1,180	1,159	1,250	1,138	1,172

TABLE 4 (Continued): ANALYSIS OF AIR-DRIED BIOSOLIDS APPLIED TO LAND FROM THE CALUMET WATER RECLAMATION PLANT'S SOLIDS DRYING AREAS DURING THE THIRD QUARTER OF 2015

Sampling Date Site No. ¹		6-Aug 6, 7	6-Aug 8, 9	6-Aug 10, 11, 12,13	4-Sep 14	1-Sep 14, 15, 16	10-Sep 14
<u>Constituent</u>	<u>Unit</u>						
pH		5.7	6.2	5.9	6.6	6.2	6.4
Total Solids	%	71.6	78.6	72.3	50.0	45.8	49.1
Total Volatile Solids	"	42.7	44.8	41.6	53.7	74.3	53.4
Volatile Acids as Acetic Acid	mg/kg	<7	<7	<7	<7	<7	<7
Total Kjeldahl Nitrogen	"	21,212	21,867	21,306	19,172	25,143	13,904
NH ₃ -N	"	173	179	175	7	20	23
Total P	"	24,308	24,194	23,279	14,885	26,184	12,652
As	"	8	10	11	<5	<5	<5
Cd	"	2	2	2	1	1	1
Cr	"	59	56	60	30	46	39
Cu	"	396	375	368	211	314	252
Hg	"	0.8	0.8	1.0	0.6	0.4	<0.3
K	"	3,523	3,729	4,483	2,745	2,722	2,571
Mn	"	1,050	943	988	487	653	651
Mo	"	9	9	9	<2	<2	4
Ni	"	28	25	28	17	26	20
Pb	"	82	71	87	41	65	53
Se	"	<5	<5	<5	<5	<5	<5
Zn	"	1,206	1,121	1,083	486	658	614

¹Batches of biosolids applied to sites are listed in [Table 2](#).