

*Protecting Our Water Environment*



*Metropolitan Water Reclamation District of Greater Chicago*

***MONITORING AND RESEARCH  
DEPARTMENT***

*REPORT NO. 18-06*

*HANOVER PARK WATER RECLAMATION PLANT*

*FISCHER FARM MONITORING REPORT FOR*

*FOURTH QUARTER 2017*

*February 2018*

**Metropolitan Water Reclamation District of Greater Chicago**

CECIL LUE-HING RESEARCH AND DEVELOPMENT COMPLEX  
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**Edward W. Podczewinski, P.E.**  
Director of Monitoring and Research

February 16, 2018

Mr. Roger Callaway  
Illinois Environmental Protection Agency  
Bureau of Water  
DWPC Compliance Section #19  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9274

Dear Mr. Callaway:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for October, November, and December 2017

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for October, November, and December 2017 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2016-SC-61315. Analytical data for well water samples collected during the quarter are presented in Table 1.

Drainage water (combined surface and subsurface) returned to the Hanover Park WRP from the farm fields was sampled in October, November, and December 2017, and data for these samples are presented in Table 2. The volumes of drainage water returned to the WRP during the the quarter were estimated as 15, 4.2, and 3.6 million gallons in October, November, and December, respectively. The analytical data for lagoon supernatant and liquid biosolids applied to Fischer Farm fields in October and December are presented in Tables 3 and 4. The volume of supernatant and associated dry weight of supernatant and biosolids applied are shown in Table 5. Field and water monitoring locations are presented in Figure 1.

An investigation of Well 7 is ongoing to help determine the reason for high NH<sub>3</sub> levels observed in the well. Three supplemental monitoring wells were installed in July 2017 to monitor groundwater and determine the source of NH<sub>3</sub>. Groundwater samples from the supplemental monitoring wells were taken in October, November, and December 2017. Sampling will resume in March 2018.

The data reported are as follows:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for October, November, and December 2017

Table 1 Analysis of Water From Monitoring Wells W-3, W-5, W-6, W-7, and W-8 at the Hanover Park Fischer Farm Site Sampled on November 21, 2017.

Table 2 Analysis of Combined Surface and Subsurface Drainage From the Fischer Farm Site Returned to the Hanover Park Water Reclamation Plant During October and November 2017.

Table 3 Analysis of Lagoon Supernatant Applied to Fields at the Hanover Park Fischer Farm Site During October 2017.

Table 4 Analysis of Liquid Biosolids Applied to Fields at the Hanover Park Fischer Farm Site During December 2017.

Table 5 Volumes and Dry Weights of Lagoon Supernatant and Liquid Biosolids Applied to Fields During October and December 2017 at the Hanover Park Fischer Farm Site.

Figure 1 Map of Fields and Wells at the Hanover Park Fischer Farm Site of the Metropolitan Water Reclamation District of Greater Chicago.

Very truly yours,

Albert E. Cox  
Environmental Monitoring and Research Manager  
Monitoring and Research Department

AC:DB:cm

Attachments

cc/att: Mr. J. Patel, Manager, IEPA – Des Plaines

Mr. J. Colletti, USEPA, Region 5

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**HANOVER PARK WATER RECLAMATION PLANT  
FISCHER FARM MONITORING REPORT FOR  
FOURTH QUARTER 2017**

**Monitoring and Research Department  
Edward W. Podczerwinski, Director**

**February 2018**

TABLE 1: ANALYSIS OF WATER FROM MONITORING WELLS W-3, W-5, W-6, W-7,  
AND W-8 AT THE HANOVER PARK FISCHER FARM SITE SAMPLED  
ON NOVEMBER 21, 2017

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7	W-8
pH <sup>1</sup>		7.4	7.6	7.6	7.3	8.0
EC	mS m <sup>-1</sup>	107	75	19	172	65
Cl <sup>-</sup>	mg L <sup>-1</sup>	14	16	25	44	9.0
SO <sub>4</sub> <sup>2-</sup>	"	205	102	120	274	75
Alkalinity as CaCO <sub>3</sub>	"	436	313	300	694	291
TKN	"	<1.0	<1.0	<1.0	69	<1.0
NH <sub>3</sub> -N	"	<0.10	0.27	0.25	63	0.66
NO <sub>2</sub> +NO <sub>3</sub> -N	"	<0.15	<0.15	<0.15	<0.15	<0.15
Total P	"	<0.10	<0.10	0.10	0.94	<0.10
Cd	"	<0.001	<0.001	<0.001	<0.001	<0.001
Cr	"	<0.003	<0.003	<0.003	<0.003	<0.003
Cu	"	0.006	<0.004	<0.004	<0.004	<0.004
Fe	"	3.54	1.34	1.84	3.21	1.18
Mn	"	0.109	0.013	0.034	0.054	0.035
Ni	"	<0.005	<0.005	<0.005	<0.005	<0.005
Zn	"	0.057	<0.005	<0.005	0.088	0.013

<sup>1</sup>pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT DURING OCTOBER AND NOVEMBER 2017

Date <sup>1</sup>	Sump	NH <sub>3</sub> -N	TSS <sup>2</sup>	BOD <sub>5</sub>
		----- mg L <sup>-1</sup> -----		
10/10/2017	East	8.4	7.0	5.0
10/10/2017	West	17	18	64
10/31/2017	East	3.9	<4.0	7.0
10/31/2017	West	0.11	<4.0	2.0
11/14/2017	East	133	74	86
11/14/2017	West	1.2	<4.0	3.0
11/21/2017	East	69	35	40
11/21/2017	West	<0.10	<4.0	<2.0

<sup>1</sup>Pump houses were under repair and sampling inaccessible during December.

<sup>2</sup>Total suspended solids.

TABLE 3: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING OCTOBER 2017

Constituent	Unit	Concentration <sup>1</sup>
pH		7.9
Total Solids	%	0.09
Total Volatile Solids <sup>2</sup>	"	84
Volatile Acids <sup>3</sup>	mg L <sup>-1</sup>	<5.0
TKN	"	348
NH <sub>3</sub> -N	"	281
Total P	"	55
Cd	"	<0.001
Cr	"	0.004
Cu	"	0.078
Mn	"	0.133
Ni	"	0.024
Pb	"	<0.010
Zn	"	0.093

<sup>1</sup>One sample.

<sup>2</sup>Total volatile solids as a percentage of total solids.

<sup>3</sup>As acetic acid.

TABLE 4: ANALYSIS OF LIQUID BIOSOLIDS APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING DECEMBER 2017

Constituent	Unit	Concentration <sup>1</sup>
pH		7.6
Total Solids	%	2.4
Total Volatile Solids <sup>2</sup>	"	67
Volatile Acids <sup>3</sup>	mg kg <sup>-1</sup>	1,494
TKN	"	80,979
NH <sub>3</sub> -N	"	29,834
Total P	"	21,959
Cd	"	2.0
Cr	"	36
Cu	"	827
Mn	"	590
Ni	"	32
Pb	"	22
Zn	"	820

<sup>1</sup>One sample.

<sup>2</sup>Total volatile solids as a percentage of total solids.

<sup>3</sup>As acetic acid.

TABLE 5: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT APPLIED TO FIELDS DURING OCTOBER AND DECEMBER 2017 AT THE HANOVER PARK FISCHER FARM SITE

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
6	10/17/17	Supernatant	340,000	1.4
5	10/31/17	Supernatant	500,000	2.3
6	12/4/17	Biosolids	1,000,000	108
6	12/5/17	Biosolids	1,000,000	108
5	12/6/17	Biosolids	2,000,000	158
3	12/7/17	Biosolids	1,000,000	111
2	12/8/17	Biosolids	1,000,000	100
1	12/9/17	Biosolids	1,000,000	100
Total			7,840,000	689

FIGURE 1 MAP OF FIELDS AND WELLS AT THE HANOVER PARK FISCHER FARM SITE OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

