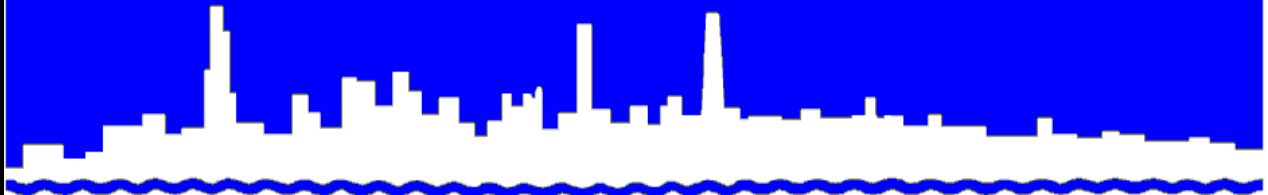


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 20-22

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

SECOND QUARTER 2020

July 2020

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Edward W. Podczerwinski, P.E.

Director of Monitoring and Research

July 30, 2020

Mr. Roger Calloway
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 April, May, and June 2020

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for April, May, and June 2020, as required by Illinois Environmental Protection Agency 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 April, May, and June 2020, and data for these samples are presented in Table 2. The volumes of drainage water returned to the WRP during the first quarter were estimated at 24.2, 47.7, and 22.6 million gallons in April, May, and June, respectively. The analytical data for lagoon supernatant applied to Fischer Farm fields in April, May, and June are presented in Table 3. The volume of lagoon supernatant, and the associated dry weight of biosolids applied, are shown in Table 4. Field and water monitoring locations are presented in Figure 1.

Based on the investigation of the high levels of NH₃-N in Well 7, it appears that the source of these high levels is seepage from adjacent lagoons and subsurface drainage associated with supernatant application, both of which have high NH₃-N levels. Management practices are being implemented to reduce the loading in adjacent lagoons and application of supernatant in fields to confirm that these are the sources of high NH₃-N in Well 7.

The data reported are as follows:

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 June 9, 2020.

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for April, May, and June 2020

Table 2 Analysis of Combined Surface and Subsurface Drainage From the Fischer Farm Site Returned to the Hanover Park Water Reclamation Plant During April, May, and June 2020.

Table 3 Analysis of Lagoon Supernatant Applied to Fields at the Hanover Park Fischer Farm Site During April, May, and June 2020.

Table 4 Volumes and Dry Weights of Lagoon Supernatant Applied to Fields During April, May, and June 2020 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:BM:cm

Attachments

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

Mr. J. Colletti, USEPA, Region 5

Mr. P. Kuefler, USEPA, Region 5

Mr. J. Chavich

Dr. H. Zhang

Metropolitan Water Reclamation District of Greater Chicago
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**HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT FOR
SECOND QUARTER 2020**

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

July 2020

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 JUNE 9, 2020

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7	W-8
pH ¹		7.6	7.6	7.6	7.3	7.9
EC	mS m ⁻¹	75	74	70	142	62
Cl ⁻	mg L ⁻¹	9.5	19	21	32	10
SO ₄ ²⁻	"	77	102	116	241	76
Alkalinity as CaCO ₃	"	364	308	295	592	283
TKN	"	<1.0	<1.0	<1.0	NRR ²	<1.0
NH ₃ -N	"	<0.30	0.31	<0.30	48	0.42
NO ₂ ⁻ +NO ₃ ⁻ -N	"	<0.25	<0.25	<0.25	<0.25	<0.25
Total P	"	<0.15	<0.15	<0.15	1.79	<0.15
Cd	"	<0.001	<0.001	<0.001	0.002	<0.001
Cr	"	<0.002	<0.002	<0.002	0.017	<0.002
Cu	"	0.004	0.002	0.002	0.023	0.002
Fe	"	3.62	2.52	1.54	14.8	0.973
Mn	"	0.27	0.022	0.031	0.37	0.025
Ni	"	<0.001	<0.001	<0.001	0.023	<0.001
Zn	"	0.038	<0.005	<0.005	0.24	<0.005

¹pH was measured beyond 15 minutes holding time.

²No reportable result. Analysis canceled because NH₃-N was greater than TKN. The sample could not be rerun for TKN due to exceedance of the holding time.

TABLE 2: ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT DURING APRIL, MAY, AND JUNE 2020

Date ¹	Sump	NH ₃ -N	TSS ¹	BOD ₅
		----- mg L ⁻¹ -----		
04/14/2020	East	9.0	6	NRR ²
04/14/2020	West	14	7	NRR ²
04/28/2020	East	7.2	15	9
04/28/2020	West	16	17	11
05/12/2020	East	178	43	60
05/12/2020	West	22	18	22
05/26/2020	East	ND ³	30	ND
05/26/2020	West	ND	6	ND
06/09/2020	East	2.4	10	6
06/09/2020	West	3.5	31	12
06/25/2020	East	4.1	7	5
06/25/2020	West	2.4	5	7

¹Total suspended solids.

²No reportable result. Analysis canceled because laboratory control sample result was outside of the acceptable range. The sample could not be rerun for BOD₅ due to exceedance of the holding time.

³No data. Analysis canceled because storage temperature exceeded acceptable range.

TABLE 3: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING APRIL, MAY, AND JUNE 2020

Constituent	Unit	April	May	June
pH ¹		8.0	7.9	8.0
Total Solids	%	0.15	0.13	0.12
Total Volatile Solids	"	59.9	62.6	51.6
Volatile Acids	mg L ⁻¹	ND ²	ND	<5.0
TKN	"	596	592	480
NH ₃ -N	"	549	549	460
Total P	"	60	54	46
Cd	"	<0.001	<0.001	<0.001
Cr	"	0.004	0.002	<0.002
Cu	"	0.236	0.196	0.103
Mn	"	0.532	0.468	0.359
Ni	"	0.022	0.019	0.016
Pb	"	0.006	0.005	0.002
Zn	"	0.388	0.338	0.145

¹pH was measured beyond 15 minutes holding time.

²No data. Analysis was canceled by the analytical lab due to staffing limitations associated with the COVID-19 pandemic.

TABLE 4: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT APPLIED TO FIELDS DURING APRIL, MAY, AND JUNE 2020 AT THE HANOVER PARK FISCHER FARM SITE

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
5	04/02/20	Supernatant	160,000	1.07
6	04/02/20	Supernatant	160,000	1.07
1	04/03/20	Supernatant	155,000	1.04
4	04/03/20	Supernatant	155,000	1.04
1	04/09/20	Supernatant	140,000	0.82
4	04/09/20	Supernatant	140,000	0.82
5	04/10/20	Supernatant	145,000	0.91
6	04/10/20	Supernatant	145,000	0.91
1	04/14/20	Supernatant	95,000	0.56
4	04/14/20	Supernatant	95,000	0.56
1	04/22/20	Supernatant	150,000	0.94
4	04/22/20	Supernatant	150,000	0.94
5	04/23/20	Supernatant	120,000	0.80
6	04/23/20	Supernatant	120,000	0.80
5	04/28/20	Supernatant	95,000	0.60
6	04/28/20	Supernatant	95,000	0.60
1	05/07/20	Supernatant	135,000	0.79
4	05/07/20	Supernatant	135,000	0.79
5	05/11/20	Supernatant	170,000	0.99
6	05/11/20	Supernatant	170,000	0.99
1	05/12/20	Supernatant	145,000	0.85
4	05/12/20	Supernatant	145,000	0.85
1	05/18/20	Supernatant	97,500	0.45
4	05/18/20	Supernatant	97,500	0.45
5	05/18/20	Supernatant	97,500	0.45
6	05/18/20	Supernatant	97,500	0.45
1	05/19/20	Supernatant	82,500	0.35
4	05/19/20	Supernatant	82,500	0.35
5	05/19/20	Supernatant	82,500	0.35
6	05/19/20	Supernatant	82,500	0.35
5	05/20/20	Supernatant	115,000	0.53
6	05/20/20	Supernatant	115,000	0.53
1	06/04/20	Supernatant	150,000	0.75
4	06/04/20	Supernatant	150,000	0.75
Total			4,270,000	24.41 ¹

¹Difference between sum of individual dry weights (24.50 dry tons) and reported total (24.41 dry tons) is due to rounding.

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

