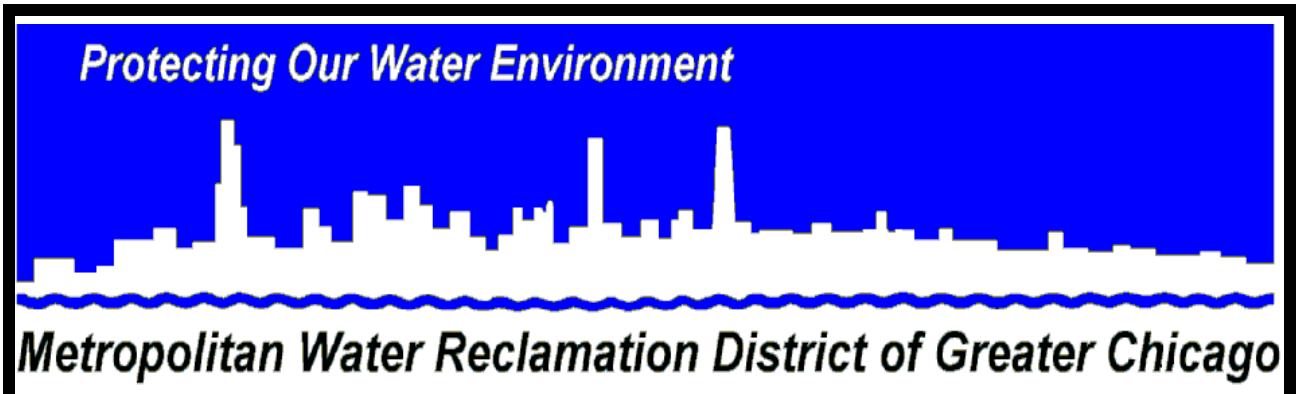

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 20-02

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FOURTH QUARTER 2019

May 2020

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

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

Edward W. Podczerwinski, P.E.
Director of Monitoring and Research

May 21, 2020

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 2019

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for October, November, and December 2019, 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 2019, and data for these samples are presented in Table 2. The volumes of drainage water returned to the WRP during the fourth quarter were estimated as 34.3, 12.9, and 4.5 million gallons in October, November, and December, respectively. No lagoon supernatant or liquid biosolids were applied to the Fischer Farm site during this quarter. For the next growing season (2020), corn (*Zea mays*) is expected to be grown in all application areas except Farm Field Number 7 because no biosolids will be applied in that field. Field and water monitoring locations are presented in Figure 1.

Based on the investigation of the high levels of NH_3-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 NH_3-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 NH_3-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 in October and November 2019.

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for October, November, and December 2019

Table 2 Analysis of Combined Surface and Subsurface Drainage From the Fischer Farm Site Returned to the Hanover Park Water Reclamation Plant During October, November, and December 2019.

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 Cox

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
FOURTH QUARTER 2019

Monitoring and Research Department
Edward W. Podczerwinski, Director

May 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 IN OCTOBER AND NOVEMBER 2019[1]

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7	W-8
pH		7.8	7.8	7.8	7.6	8.2
EC	mS m^{-1}	1,030	764	783	1,377	645
Cl^-	mg L^{-1}	14	18	22	34	10
SO_4^{2-}	"	212	99	116	215	74
Alkalinity as $CaCO_3$	"	349	306	292	494	287
TKN	"	<1.0	<1.0	<1.0	37.84	<1.0
NH_3-N	"	<0.30	0.37	0.36	33.65	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	1.24	<0.15
Cd	"	0.001[2]	<0.001	<0.001	<0.001	<0.001
Cr	"	<0.002	<0.002	<0.002	0.008	<0.002
Cu	"	0.006	0.003	0.002	0.015	0.002
Fe	"	2.62	3.17	1.67	16.68	0.92
Mn	"	0.062	0.027	0.032	0.271	0.027
Ni	"	0.002	<0.001	<0.001	0.013	<0.001
Zn	"	0.069	0.005	0.005[3]	0.476	0.005[3]

[1]Mean of two samples collected October 22 and November 26, 2019.

[2]One of the two samples was below the reporting limit and was treated as equal to 0.001 mg L^{-1} for purposes of calculating the mean.

[3]One of the two samples was below the reporting limit and was treated as equal to 0.005 mg L^{-1} for purposes of calculating the mean.

TABLE 2: ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT DURING OCTOBER, NOVEMBER, AND DECEMBER 2019

Date	Sump	NH_3-N	TSS[1]	BOD_5[2]
		---------- mg L^{-1} ----------		
10/09/2019	East	1.14	8	3
10/09/2019	West	<0.30	2	<2
10/22/2019	East	1.84	<2	NDR[3]
10/22/2019	West	<0.30	2	NDR
11/05/2019	East	2.57	12	3
11/05/2019	West	<0.30	2	<2
11/19/2019	East	3.62	2	<2
11/19/2019	West	<0.30	3	<2
11/26/2019	East	5.05	11	9
11/26/2019	West	<0.30	<2	<2
12/03/2019	East	4.25	<2	<2
12/03/2019	West	<0.300	2	<2
12/17/2019	East	7.01	2	<2
12/17/2019	West	<0.30	2	<2

[1]Total suspended solids.
[2]Biochemical oxygen demand measured during five day of incubation period.
[3]No data reportable: the test was canceled by the analytical labs due to laboratory control sample failure.

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