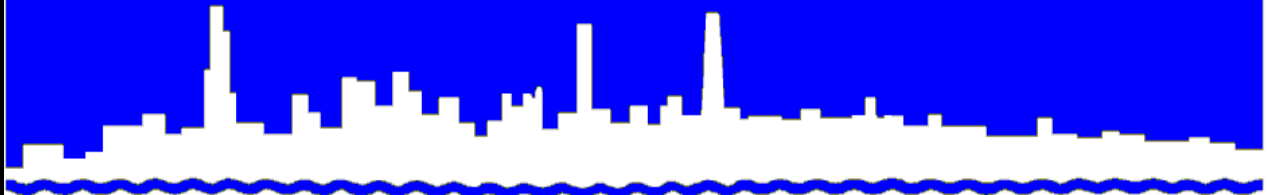


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 20-11

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FIRST QUARTER 2020

May 2020

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Marcelino Garcia
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Debra Shore
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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

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

May 20, 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 January, February, and March 2020

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for January, February, and March 2020, 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 January, February, and March 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 13.0, 19.0, and 17.7 million gallons in January, February, and March, respectively. The analytical data for lagoon supernatant applied to Fischer Farm fields in February and March 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](#).

Electrical conductivity (EC) measurements for water from monitoring wells in the third and fourth quarter reports for 2019 were presented using incorrect units. [Table 5](#) shows corrected EC values for water from the Fischer Farm monitoring wells sampled in the third quarter of 2019, and [Table 6](#) shows corrected EC values for water from the Fischer Farm monitoring wells sampled in the fourth quarter of 2019.

Based on the investigation of the high levels of ammonia-nitrogen (NH₃-N) in Well 7, it appears that the source of these high levels is seepage from adjacent lagoons and subsurface drainage associated with the site, 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:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for January, February, and March 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 March 10, 2019.

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

Table 3 Analysis of Lagoon Supernatant Applied to Fields at the Hanover Park Fischer Farm Site During February and March 2020.

Table 4 Volumes and Dry Weights of Lagoon Supernatant Applied to Fields During February and March 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.

Table 5 Corrected Electrical Conductivity Measurements for Water From Monitoring Wells W-3, W-5, W-6, W-7, and W-8 at the Hanover Park Fischer Farm Site Sampled on September 10, 2019, for 2019 third quarter report.

Table 6 Corrected Electrical Conductivity Measurements for 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 for 2019 fourth quarter report.

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
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

**HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT FOR
FIRST QUARTER 2020**

**Monitoring and Research Department
Edward W. Podczewinski, 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 ON MARCH 10, 2020

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7	W-8
pH ¹		7.8	7.7	7.7	7.6	8.0
EC	mS m ⁻¹	82	75	78	97	63
Cl ⁻	mg L ⁻¹	11	18	22	184	10
SO ₄ ²⁻	"	119	101	120	63	70
Alkalinity as CaCO ₃	"	351	309	297	118	273
TKN	"	<1.0	<1.0	<1.0	5.1	<1.0
NH ₃ -N	"	<0.30	0.34	0.36	2.38	0.41
NO ₂ ⁻ +NO ₃ ⁻ -N	"	<0.25	<0.25	<0.25	4.39	<0.25
Total P	"	<0.15	<0.15	<0.15	0.88	<0.15
Cd	"	<0.001	<0.001	<0.001	0.001	<0.001
Cr	"	<0.002	<0.002	<0.002	0.007	<0.002
Cu	"	0.001	<0.001	0.014	0.016	<0.001
Fe	"	0.53	0.56	3.48	12.2	0.76
Mn	"	0.017	0.018	0.037	0.094	0.018
Ni	"	<0.001	<0.001	<0.001	0.010	<0.001
Zn	"	0.024	0.005	0.008	0.591	<0.005

¹pH was measured beyond 15 minutes 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 JANUARY, FEBRUARY, AND MARCH 2020

Date ¹	Sump	NH ₃ -N	TSS ¹	BOD ₅
		----- mg L ⁻¹ -----		
01/14/2020	East	113	11	9
01/14/2020	West	<0.30	4	<2
01/29/2020	East	3.9	4	<2
01/29/2020	West	<0.30	3	<2
02/25/2020	East	9.1	5	6
02/25/2020	West	24	9	13
03/10/2020	East	7.0	12	12
03/10/2020	West	29	16	19
03/24/2020	East	5.6	4	3
03/24/2020	West	4.1	3	<2

¹Total suspended solids.

TABLE 3: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING FEBRUARY AND MARCH 2020

Constituent	Unit	February	March
pH ¹		7.7	7.8
Total Solids	%	0.14	0.15
Total Volatile Solids	"	56.5	62.3
Volatile Acids	mg L ⁻¹	<5	<5
TKN	"	538	637
NH ₃ -N	"	451	545
Total P	"	63	64
Cd	"	<0.001	<0.001
Cr	"	0.005	0.005
Cu	"	0.178	0.230
Mn	"	0.601	0.305
Ni	"	0.021	0.021
Pb	"	0.005	0.007
Zn	"	0.303	0.367

¹pH was measured beyond 15 minutes holding time.

TABLE 4: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT APPLIED TO FIELDS DURING FEBRUARY AND MARCH 2020 AT THE HANOVER PARK FISCHER FARM SITE

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
5	02/10/2020	Supernatant	135,000	0.68
6	02/10/2020	Supernatant	135,000	0.68
1	02/11/2020	Supernatant	145,000	0.73
4	02/11/2020	Supernatant	145,000	0.73
1	02/20/2020	Supernatant	125,000	0.78
4	02/20/2020	Supernatant	125,000	0.78
5	03/04/2020	Supernatant	135,000	0.73
6	03/04/2020	Supernatant	135,000	0.73
1	03/05/2020	Supernatant	90,000	0.60
4	03/05/2020	Supernatant	90,000	0.60
5	03/05/2020	Supernatant	90,000	0.60
6	03/05/2020	Supernatant	90,000	0.60
1	03/06/2020	Supernatant	92,500	0.62
4	03/06/2020	Supernatant	92,500	0.62
5	03/06/2020	Supernatant	92,500	0.62
6	03/06/2020	Supernatant	92,500	0.62
1	03/25/2020	Supernatant	105,000	0.70
4	03/25/2020	Supernatant	105,000	0.70
Total			2,020,000	12.1 ¹

¹Difference between sum of dry weights and reported total 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

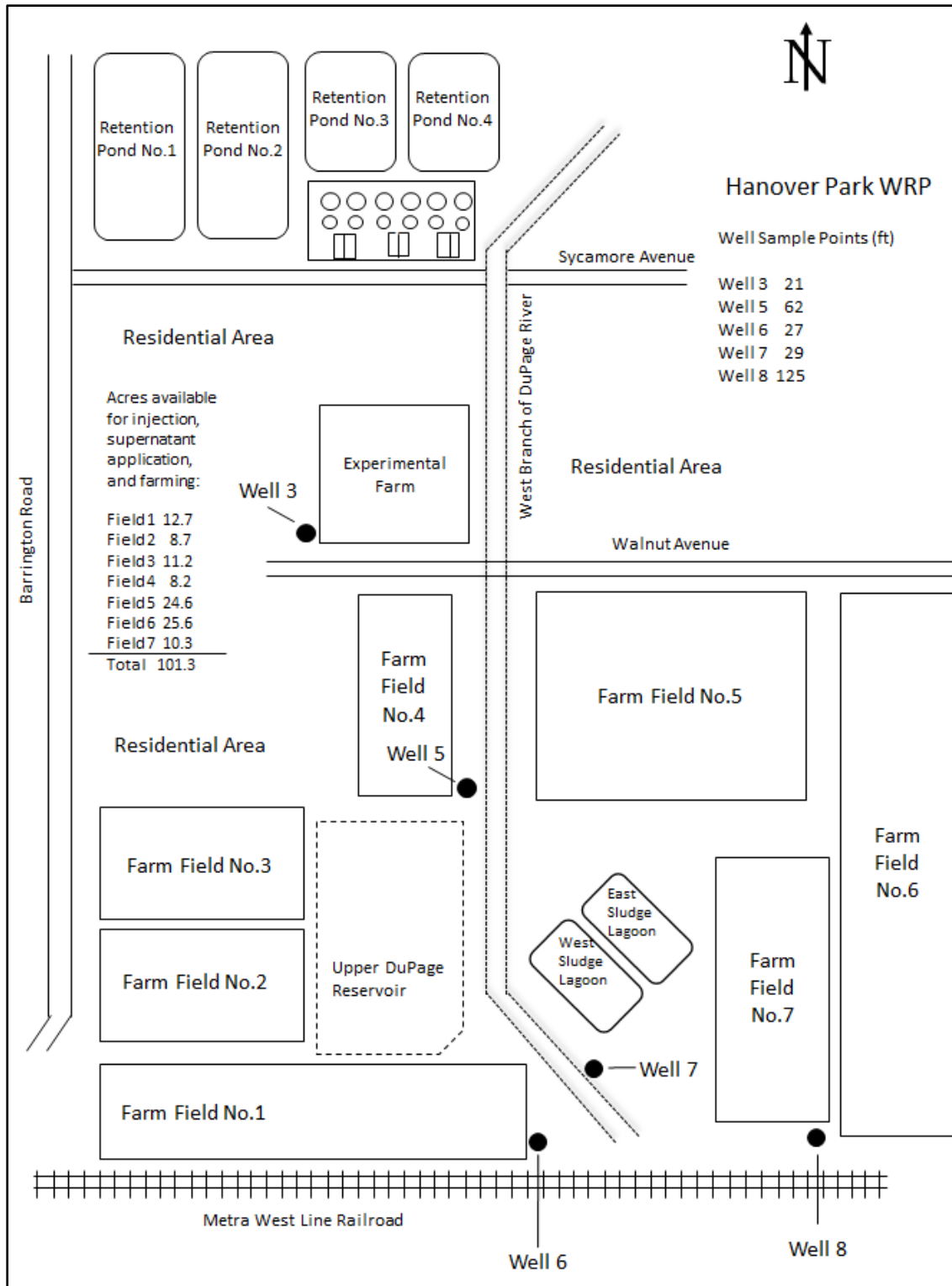


TABLE 5: CORRECTED ELECTRICAL CONDUCTIVITY MEASUREMENTS FOR WATER FROM MONITORING WELLS W-3, W-5, W-6, W-7, AND W-8 AT THE HANOVER PARK FISCHER FARM SITE SAMPLED ON SEPTEMBER 10, 2019 FOR THE 2019 THIRD QUARTER REPORT

Parameter	Unit	Monitoring Well No.				
		W-3 ¹	W-5	W-6	W-7	W-8
EC	mS m ⁻¹	NC	81	82	145	64

¹Samples could not be collected at Well 3 during September 2019 sampling because the well was dry.

TABLE 6: CORRECTED ELECTRICAL CONDUCTIVITY MEASUREMENTS FOR 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 2019¹ FOR THE 2019 FOURTH QUARTER REPORT

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7	W-8
EC	mS m ⁻¹	103	76	78	138	65

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