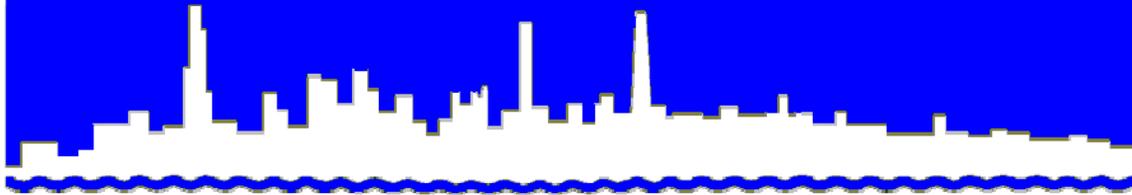


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 15-29

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

SECOND QUARTER 2015

August 2015

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THOMAS C. GRANATO, Ph.D., BCES

Director of Monitoring and Research

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August 24, 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: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2012-SC-2255, Monitoring Report for April, May, and June 2015

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for April, May, and June 2015 as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2012-SC-2255. Analytical data for well water samples collected during the quarter are presented in Tables 1 and 2.

Drainage water (combined surface and subsurface) returned to the Hanover Park WRP from the farm fields was sampled in April, May, and June, and data for these samples are presented in Table 3. The volumes of drainage water returned to the WRP during the second quarter were estimated as 10.1, 10.6, and 12.7 million gallons in April, May, and June, respectively. The analytical data for the lagoon supernatant applied to Fischer Farm fields during the quarter are presented in Table 4. The volumes and dry weights applied are reported in Table 5. Field and water monitoring locations are presented in Figure 1. The data reported are as follows:

Table 1, Analysis of Water From Monitoring Well W-7 at the Hanover Park Fischer Farm Site Sampled during April, May and June 2015.

Table 2, Analysis of Water From Monitoring Wells W-3, W-5, W-6, and W-8 at the Hanover Park Fischer Farm Site Sampled on June 9, 2015.

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2012-SC-2255, Monitoring Report for April, May, and June 2015

Table 3, 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 2015.

Table 4, Analysis of Lagoon Supernatant Applied to Fields at the Hanover Park Fischer Farm Site During April, May, and June 2015.

Table 5, Volumes and Dry Weights of Lagoon Supernatant Applied to Fields During April, May, and June 2015 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,

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

TCG:DB:cm

Attachments

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

Mr. V. Aistars, USEPA, Region 5

Mr. P. Kuefler, USEPA, Region 5

TABLE 1: ANALYSIS OF WATER FROM MONITORING WELL W-7 AT THE HANOVER PARK FISCHER FARM SITE SAMPLED DURING APRIL, MAY, AND JUNE 2015

Parameter	Unit	Date Sampled					
		4/14/15	4/28/15	5/12/15	5/28/15	6/9/15	6/23/15
pH ¹		7.3	7.3	7.3	7.3	7.2	7.3
EC	mS m ⁻¹	120	144	136	139	140	133
Cl ⁻	mg L ⁻¹	68	68	67	63	60	56
SO ₄ ²⁻	"	231	212	244	236	235	233
Alkalinity as CaCO ₃	"	534	527	550	514	554	591
TKN	"	28	27	28	26	27	31
NH ₃ -N	"	27	25	26	24	25	29
NO ₂ +NO ₃ -N	"	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total P	"	0.22	0.22	0.25	0.25	0.26	0.31
Cd	"	<0.001	0.001	<0.001	<0.001	0.002	<0.001
Cr	"	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cu	"	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fe	"	4.0	4.4	4.0	4.3	4.1	5.1
Mn	"	0.05	0.06	0.05	0.06	0.06	0.06
Ni	"	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zn	"	0.11	0.52	0.07	0.09	<0.10	0.16

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM MONITORING WELLS W-3, W-5, W-6, AND W-8 AT THE HANOVER PARK FISCHER FARM SITE SAMPLED ON JUNE 9, 2015

Parameter	Unit	Monitoring Well No.			
		W-3	W-5	W-6	W-8
pH ¹		7.5	7.6	7.5	8.4
EC	mS m ⁻¹	89	71	88	49
Cl ⁻	mg L ⁻¹	17	16	57	<10
SO ₄ ²⁻	"	167	97	121	45
Alkalinity as CaCO ₃	"	363	316	316	245
TKN	"	<1.0	<1.0	<1.0	<1.0
NH ₃ -N	"	0.15	0.31	0.28	0.45
NO ₂ +NO ₃ -N	"	<0.15	<0.15	<0.15	<0.15
Total P	"	<0.10	<0.10	0.13	<0.10
Cd	"	0.003	0.003	<0.001	<0.001
Cr	"	<0.005	<0.005	<0.005	<0.005
Cu	"	0.009	0.031	0.009	<0.005
Fe	"	7.8	4.3	3.5	0.44
Mn	"	0.42	0.04	0.06	0.02
Ni	"	<0.005	<0.005	<0.005	<0.005
Zn	"	0.05	<0.01	<0.01	<0.01

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 3: 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 2015

Date	Sump	NH ₃ -N	TSS ¹	BOD ₅
-----mg L ⁻¹ -----				
04/14/2015	East	8.0	38	10
04/14/2015	West	<0.10	13	<2.0
04/28/2015	East	9.2	15	11
04/28/2015	West	1.2	6.0	5.0
05/12/2015	East	0.53	9.0	<2.0
05/12/2015	West	<0.10	7.0	<2.0
05/28/2015	East	29	7.0	25
05/28/2015	West	NRR ²	NRR	NRR
06/09/2015	East	4.6	8.0	6.0
06/09/2015	West	2.4	27	16
06/23/2015	East	44	28	57
06/23/2015	West	4.5	16	7.0

¹Total suspended solids.

²NRR = No reportable results. Sample was not retrievable.

TABLE 4: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING APRIL, MAY, AND JUNE 2015

Constituent	Unit	Concentration ¹
pH		8.0
Total Solids	%	0.15
Total Volatile Solids ²	"	51
Volatile Acids ³	mg L ⁻¹	11
TKN	"	609
NH ₃ -N	"	518
Total P	"	53
As	"	<0.05
Cd	"	0.001
Cr	"	0.005
Cu	"	0.12
Hg	µg L ⁻¹	<0.20
Mn	mg L ⁻¹	0.16
Mo	"	<0.01
Na	"	94
Ni	"	0.03
Pb	"	0.01
Se	"	0.02
Zn	"	0.18

¹Mean of four samples.

²Total volatile solids as a percentage of total solids.

³As acetic acid.

TABLE 5: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT APPLIED TO FIELDS DURING APRIL, MAY, AND JUNE 2015 AT THE HANOVER PARK FISCHER FARM SITE

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
4	4/15/15	Supernatant	130,000	0.70
5	4/21/15	Supernatant	460,000	3.1
1	5/15/15	Supernatant	590,000	3.4
2	6/03/15	Supernatant	650,000	3.8
Total			1,830,000	11

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

