

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 09-30

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FIRST QUARTER 2009

MAY 2009

Protecting Our Water Environment

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May 18, 2009

Mr. S. Allan 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, IEPA Permit No. 2007-SC-2951, Monitoring Report for January, February, and March 2009

The attached report includes seven tables of the monitoring results for the Hanover Park Water Reclamation Plant Fischer Farm site for the third quarter of 2009.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

LK:PL:kq
Enclosures
cc: Mr. Jay Patel, Manager, IEPA Region II – Des Plaines
Mr. Valdis Aistars, USEPA, Region V
Mr. Ash Sajjad, USEPA, Region V
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**HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT**

FIRST QUARTER 2009

**Monitoring and Research
P. Lindo
A. Cox**

MAY 2009

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FOREWORD

The data and information in this report fulfill the frequency of monitoring and the reporting requirements for the Hanover Park Fischer Farm Site as specified in the Illinois Environmental Protection Agency Permit No. 2007-SC-2951 for the first quarter of 2009.

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The assistance given by Ms. Minaxi Patel, Sanitary Chemist I, of the Environmental Monitoring and Research Division, and Mr. John Chavich, Sanitary Chemist IV, of the John E. Egan Analytical Laboratory Section, is greatly appreciated.

DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

HANOVER PARK WATER RECLAMATION PLANT FISCHER FARM REPORT FOR FIRST QUARTER OF 2009

During January, February, and March 2009, activities at the Hanover Park Water Reclamation Plant (WRP) Fischer Farm included well and field drainage water sampling, and flow measurements. These monitoring activities are required by the Illinois Environmental Protection Agency Operating Permit No. 2007-SC-2951. Fields and water monitoring locations are presented in Figure 1.

Water from each of the six monitoring wells was sampled twice monthly in January, February, and March. Analytical data for samples collected during the quarter are presented in Tables 1 through 6.

Drainage water (combined surface and subsurface) returned to the Hanover Park WRP from the farm fields was sampled twice per month in January, February, and March. Analytical data for these samples are presented in Table 7. The volumes of drainage water returned to the WRP during the first quarter were estimated as 5.40, 15.83, and 19.76 million gallons in January, February, and March, respectively. No lagoon supernatant or biosolids were applied during this quarter.

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

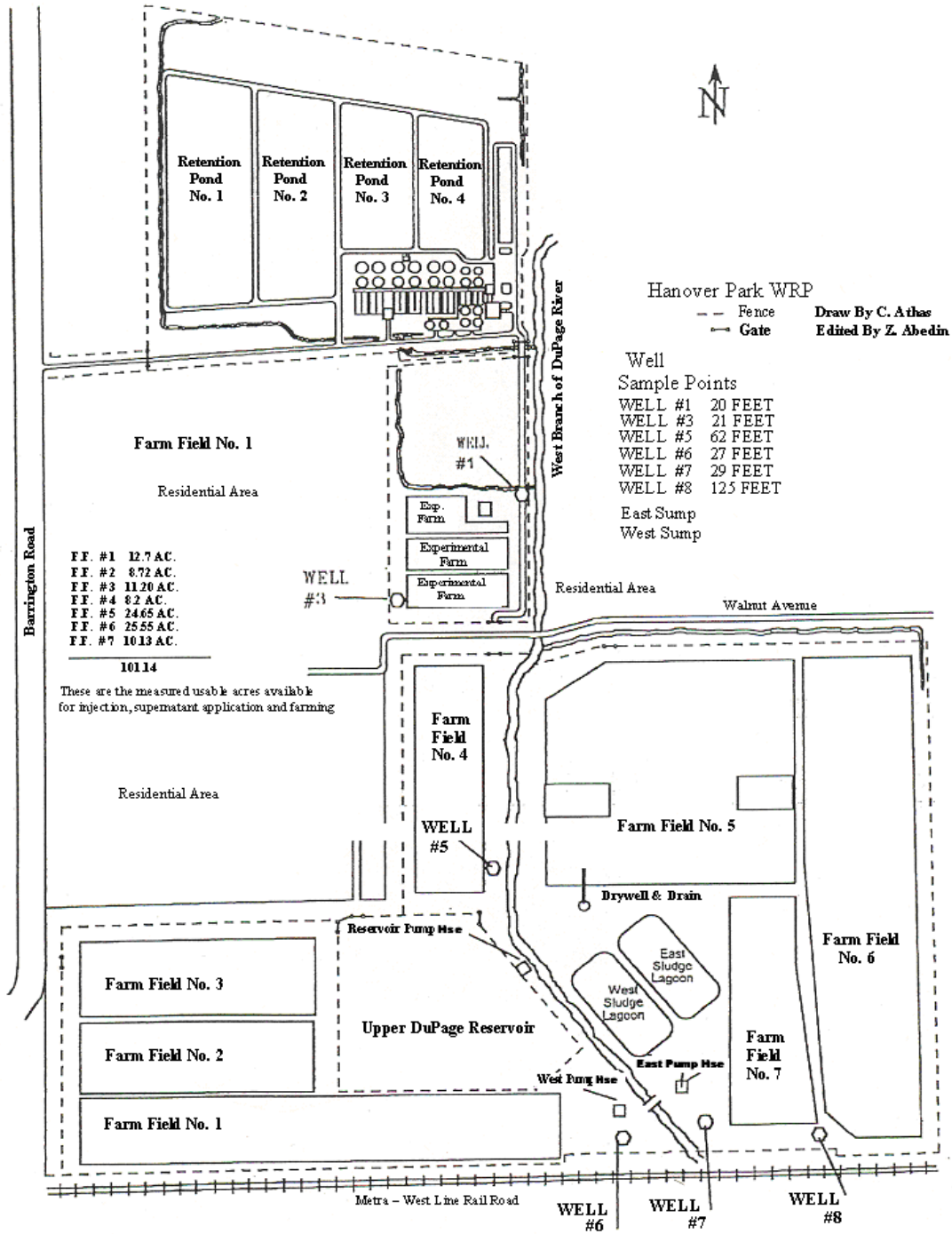


TABLE 1: ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT
THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON JANUARY 20, 2009

Parameter	Unit	Well					
		1	3	5	6	7	8
pH ¹		7.5	7.5	7.5	7.3		
EC	mS/m	213	89	78	101		
Cl ⁻	mg/L	526	20	15	73		
SO ₄ ⁼	"	36	143	89	157		
Alkalinity ²	"	204	360	317	319	W	W
TKN	"	4.2	0.27	0.51	0.59	L	L
NH ₃ -N	"	3.0	<0.03	0.27	0.26	L	L
NO ₂ + NO ₃ -N	"	0.77	0.03	<0.02	0.03		
Total P	"	0.27	<0.02	<0.02	0.10	F	F
Cd	"	0.0021	<0.0003	<0.0003	<0.0003	R	R
Cr	"	0.012	<0.002	<0.002	<0.002	O	O
Cu	"	<0.0005	<0.0005	0.0831	0.0318	Z	Z
Fe	"	74.6	6.53	1.97	11.1	E	E
Mn	"	0.7133	0.0471	0.0175	0.1114	N	N
Ni	"	0.0090	0.0015	0.0018	0.0034		
Zn	"	0.1081	0.0110	0.0106	0.0082		
Fecal Coliform MPN		150	<1	<1	<1		

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

MPN = Most probable number/100 mL.

TABLE 2: ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT
THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON JANUARY 27, 2009

Parameter	Unit	Well					
		1	3	5	6	7	8
pH ¹			7.1	7.3	7.2		
EC	mS/m		92	77	101		
Cl ⁻	mg/L	W	19	15	71		
SO ₄ ⁼	"	E	139	89	151		
Alkalinity ²	"	L	362	328	305	W	W
		L				E	E
TKN	"		0.19	0.37	0.53	L	L
NH ₃ -N	"	I	<0.03	0.24	0.22	L	L
NO ₂ + NO ₃ -N	"	N	0.03	<0.02	0.03		
Total P	"	A	<0.02	<0.02	0.13	F	F
		C				R	R
Cd	"	C	<0.0003	<0.0003	<0.0003	O	O
Cr	"	E	<0.002	<0.002	<0.002	Z	Z
Cu	"	S	0.0032	0.0124	0.0087	E	E
Fe	"	S	2.01	1.61	5.62	N	N
Mn	"	I	0.0168	0.0153	0.0753		
Ni	"	B	0.0022	0.0015	0.0039		
Zn	"	L	0.0086	0.0037	0.0060		
		E					
Fecal Coliform MPN			<1	<1	<1		

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

MPN = Most probable number/100 mL.

TABLE 3: ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT
THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON FEBRUARY 10, 2009

Parameter	Unit	Well					
		1	3	5	6	7	8
pH ¹			7.4	7.3	7.2	7.0	
EC	mS/m		94	78	95	136	
Cl ⁻	mg/L	W	19	15	42	52	
SO ₄ ⁼	"	E	159	93	135	250	
Alkalinity ²	"	L	352	320	321	448	W
		L					E
TKN	"		0.33	0.36	0.26	10	L
NH ₃ -N	"	I	<0.03	0.25	0.15	9.4	L
NO ₂ + NO ₃ -N	"	N	<0.02	<0.02	<0.02	<0.02	
Total P	"	A	0.08	<0.02	0.13	0.04	F
		C					R
Cd	"	C	<0.0003	<0.0003	<0.0003	<0.0003	O
Cr	"	E	<0.002	<0.002	<0.002	<0.002	Z
Cu	"	S	0.0066	0.0107	0.0025	<0.0005	E
Fe	"	S	0.492	2.11	3.16	4.28	N
Mn	"	I	0.0122	0.0211	0.0439	0.0591	
Ni	"	B	0.0009	0.0016	0.0018	0.0027	
Zn	"	L	0.0019	<0.0005	<0.0005	0.2392	
		E					
Fecal Coliform MPN			<1	<1	<1	<1	

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

MPN = Most probable number/100 mL.

TABLE 4: ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT
THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON FEBRUARY 24, 2009

Parameter	Unit	Well					
		1	3	5	6	7	8
pH ¹			6.9	7.7	7.7		
EC	mS/m		90	76	87		
Cl ⁻	mg/L	W	21	15	50		
SO ₄ ⁼	"	E	163	90	139		
Alkalinity ²	"	L	361	327	318	W	W
		L				E	E
TKN	"		<0.06	0.52	0.18	L	L
NH ₃ -N	"	I	0.04	0.22	0.38	L	L
NO ₂ + NO ₃ -N	"	N	0.03	0.03	<0.02		
Total P	"	A	<0.02	0.10	0.04	F	F
		C				R	R
Cd	"	C	0.0025	<0.0003	0.0004	O	O
Cr	"	E	<0.002	<0.002	<0.002	Z	Z
Cu	"	S	0.0041	0.0093	0.0022	E	E
Fe	"	S	0.592	1.67	2.90	N	N
Mn	"	I	0.0104	0.0173	0.0452		
Ni	"	B	0.0049	0.0017	0.0051		
Zn	"	L	0.0109	0.0037	0.0051		
		E					
Fecal Coliform MPN			<1	<1	<1		

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

MPN = Most probable number/100 mL.

TABLE 5: ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT
THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON MARCH 17, 2009

Parameter	Unit	Well					
		1	3	5	6	7	8
pH ¹		6.6	7.4	7.5	7.3	7.1	8.1
EC	mS/m	221	95	79	100	135	60
Cl ⁻	mg/L	551	21	15	62	54	8.0
SO ₄ ⁼	"	23	152	93	143	241	49
Alkalinity ²	"	195	361	323	313	450	278
TKN	"	5.4	0.22	0.31	0.51	9.1	0.49
NH ₃ -N	"	4.7	<0.03	0.40	0.46	8.3	0.49
NO ₂ + NO ₃ -N	"	0.91	0.58	<0.02	<0.02	<0.02	<0.02
Total P	"	0.24	0.04	0.04	0.15	0.05	0.07
Cd	"	0.0016	<0.0003	0.0007	<0.0003	<0.0003	<0.0003
Cr	"	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	<0.0005	0.0016	0.0113	0.0051	0.0009	0.0072
Fe	"	39.6	1.07	1.66	2.97	4.51	2.08
Mn	"	0.8015	0.0110	0.0178	0.0508	0.0609	0.0789
Ni	"	0.0041	<0.0007	0.0009	0.0028	0.0015	0.0010
Zn	"	0.0432	0.0889	0.0057	0.0067	0.0497	0.0094
Fecal Coliform MPN		3	<1	<1	<1	<1	<1

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

MPN = Most probable number/100 mL.

TABLE 6: ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT
THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON MARCH 24, 2009

Parameter	Unit	Well					
		1	3	5	6	7	8
pH ¹			7.7	7.6	7.5	7.2	8.0
EC	mS/m		95	79	97	134	68
Cl ⁻	mg/L	W	22	15	49	54	8.0
SO ₄ ⁼	"	E	158	91	134	243	64
Alkalinity ²	"	L	352	322	313	433	298
TKN	"	L	0.22	0.44	0.37	8.5	0.80
NH ₃ -N	"	I	<0.03	0.28	0.19	7.5	0.39
NO ₂ + NO ₃ -N	"	N	<0.02	<0.02	<0.02	<0.02	<0.02
Total P	"	A	<0.02	<0.02	0.12	0.03	0.08
Cd	"	C	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cr	"	E	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	S	0.0021	0.0034	0.0019	<0.0005	0.0041
Fe	"	S	0.825	1.65	3.13	4.57	2.27
Mn	"	I	0.0084	0.0173	0.0470	0.0616	0.0674
Ni	"	B	0.0014	<0.0007	0.0024	0.0020	0.0009
Zn	"	L	0.0164	0.0036	0.0043	0.0459	0.0070
		E					
Fecal Coliform MPN			<1	<1	<1	<1	<1

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

MPN = Most probable number/100 mL.

TABLE 7: 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 2009

Date	Sump	NH ₃ -N	TSS ¹	BOD ₅
	 mg/L		
01/20/09	East	0.27	12	2
01/20/09	West	<0.03	19	<2
01/27/09	East	0.16	4	<2
01/27/09	West	<0.03	13	8
02/10/09	East	355	188	182
02/10/09	West	0.63	38	5
02/24/09	East	118	42	47
02/24/09	West	1.6	5	2
03/17/09	East	180	51	44
03/17/09	West	1.5	2	<2
03/24/09	East	5.6	216	26
03/24/09	West	0.50	10	5

¹Total Suspended Solids.