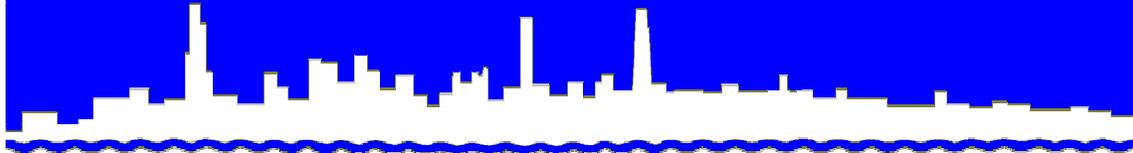


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***RESEARCH AND DEVELOPMENT
DEPARTMENT***

REPORT NO. 06-51

HANOVER PARK FISCHER FARM MONITORING REPORT

SECOND QUARTER 2006

AUGUST 2006

Terrence J. O'Brien
President

Kathleen Therese Meany
Vice President

Gloria Alitto Majewski
Chairman of Finance

Frank Avila

James C. Harris

Barbara J. McGowan

Cynthia M. Santos

Patricia Young

Harry "Bus" Yourell

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET

CHICAGO, ILLINOIS 60611-3154

312-751-5600

Louis Kollias, P.E., BCEE

Director of Research and Development

312-751-5190

August 28, 2006

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:

The attached report contains the monitoring results for the Hanover Park Water Reclamation Plant Fischer Farm site for the second quarter of 2006, as required by IEPA Operating Permit No. 2002-SC-0672.

Very truly yours,

Louis Kollias
Director
Research and Development

LK:PL:spy

Enclosure

cc w/enc: Jay Patel, Manager, IEPA Region II - Des Plaines
Mr. Valdis Aistars, USEPA Region V
Mr. Ash Sajjad, USEPA Region V

cc via MWRDGC web site:

Drs. Granato
Khalil
O'Connor
Cox
Lindo
Ms. Sharma
Patel
Messrs. Levy
Laziki (2)
Stuba
Library

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, IL 60611-2803 (312) 751-5600

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM REPORT

SECOND QUARTER 2006

Research and Development

P. Lindo

A. Cox

August 2006

TABLE OF CONTENTS

	<u>Page</u>
FOREWORD	ii
LIST OF TABLES	iii
LIST OF FIGURES	iv
ACKNOWLEDGMENT	v
DISCLAIMER	v
HANOVER PARK WATER RECLAMATION PLANT FISCHER FARM REPORT FOR SECOND QUARTER OF 2006	1

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. 2002-SC-0672 for the second quarter of 2006.

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1	Analysis of Water from the Six Monitoring Wells at the Hanover Park Fischer Farm Site Sampled on April 4, 2006	3
2	Analysis of Water from the Six Monitoring Wells at the Hanover Park Fischer Farm Site Sampled on April 18, 2006	4
3	Analysis of Water from the Six Monitoring Wells at the Hanover Park Fischer Farm Site Sampled on May 9, 2006	5
4	Analysis of Water from the Six Monitoring Wells at the Hanover Park Fischer Farm Site Sampled on May 23, 2006	6
5	Analysis of Water from the Six Monitoring Wells at the Hanover Park Fischer Farm Site Sampled on June 6, 2006	7
6	Analysis of Water from the Six Monitoring Wells at the Hanover Park Fischer Farm Site Sampled on June 20, 2006	8
7	Analysis of Combined Surface and Subsurface Drainage from the Fischer Farm Site Returned to the Hanover Park Water Reclamation Plant in April, May, and June 2006	9

LIST OF FIGURES

<u>Figure No.</u>		<u>Page</u>
1	Fields and Wells at the Hanover Park Fischer Farm Site	2

ACKNOWLEDGMENT

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.

Thanks are due to Ms. Sabina Yarn for typing this report.

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
SECOND QUARTER OF 2006

During April, May, and June 2006, 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 (IEPA) Operating Permit No. 2002-SC-0672. Fields and water monitoring locations are presented in Figure 1.

Water from each of the six monitoring wells was sampled twice monthly in April, May, and June 2006. 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 April, May, and June. Analytical data for these samples are presented in Table 7. The volumes of drainage water returned to the WRP during the second quarter were estimated as 1.25 (April), 1.25 (May), and 2.86 (June) million gallons (MG).

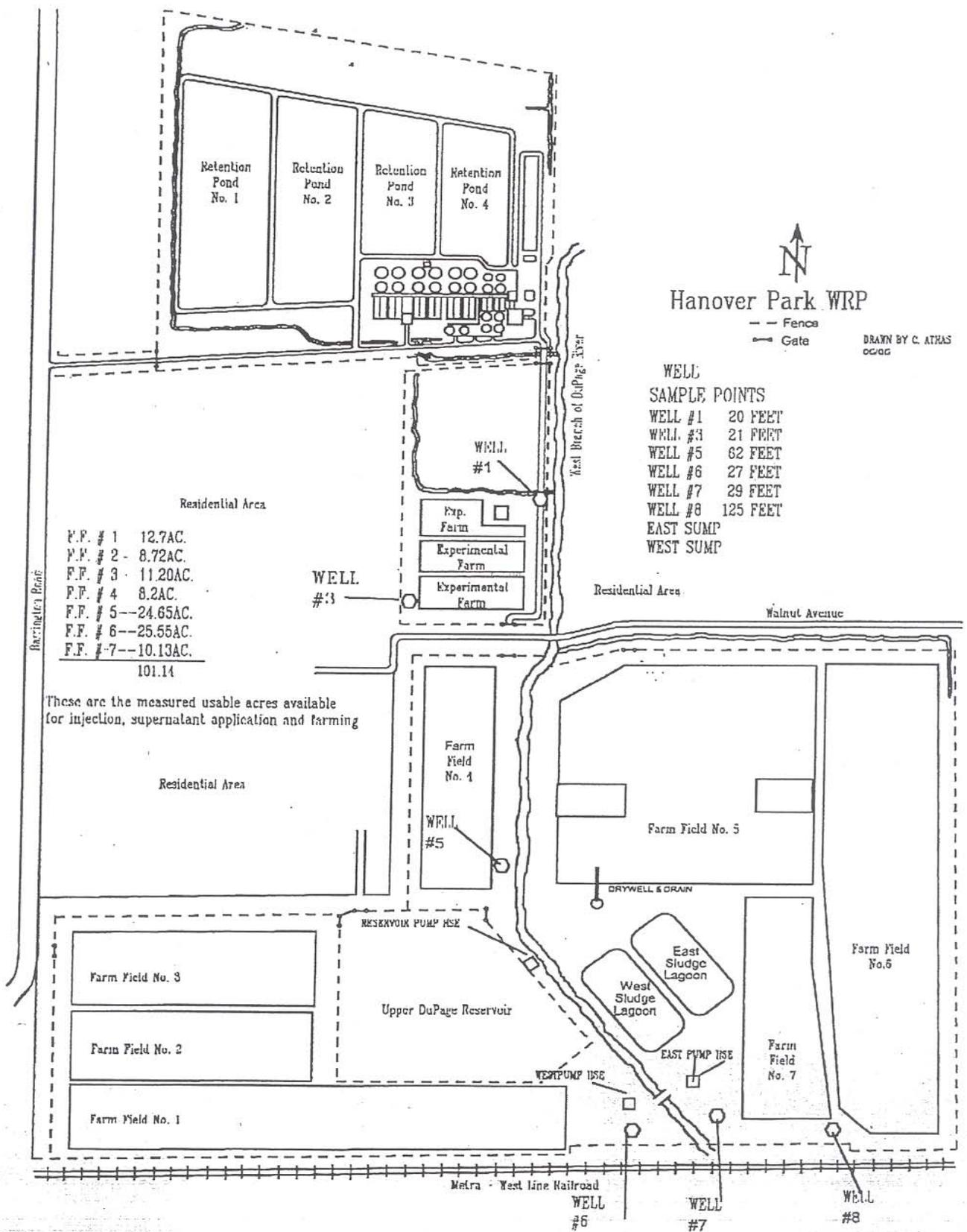
The fecal coliform count was elevated in the Well 1 sample of May 23, but samples from the well collected during June contained much lower counts that were within acceptable limits.

No biosolids were applied to any fields during the quarter.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 1

FIELDS AND WELLS AT THE HANOVER PARK FISCHER FARM SITE



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 APRIL 4, 2006

Parameter	Unit	Well					
		1	3	5	6	7	8
pH*		7.6	7.9	7.7	7.5	7.3	8.0
EC	mS/m	231	116	78	101	117	65
Cl ⁻	mg/L	425	17	14	22	35	7
SO ₄ ⁼	"	72	380	98	199	215	62
Alkalinity as CaCO ₃	"	525	230	322	336	403	294
TKN	"	4.6	0.35	0.27	0.27	11	0.37
NH ₃ -N	"	3.8	<0.03	0.26	0.16	11	0.30
NO ₂ +NO ₃ -N	"	0.37	1.5	0.05	0.05	0.05	0.05
Total P	"	0.12	0.08	0.05	0.05	0.06	0.05
Cd	"	0.0014	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cr	"	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	0.0042	0.0049	0.0099	0.0045	<0.0005	0.0015
Fe	"	11.8	0.535	1.99	3.09	3.91	1.43
Mn	"	2.164	0.0196	0.0186	0.0250	0.0544	0.0453
Ni	"	0.0024	0.0013	0.0023	<0.0007	0.0011	0.0009
Zn	"	0.0675	0.0289	0.0037	0.0060	0.0297	0.0022
Fecal coli- form per 100 mL		<1	<1	<1	<1	<1	<1

*Samples analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 2

ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT THE HANOVER
PARK FISCHER FARM SITE SAMPLED ON APRIL 18, 2006

Parameter	Unit	Well					
		1	3	5	6	7	8
pH*		7.7	7.4	7.7	7.6	7.4	8.1
EC	mS/m	239	118	78	100	118	65
Cl ⁻	mg/L	472	17	14	22	35	8
SO ₄ ⁼	"	68	378	95	196	208	60
Alkalinity as CaCO ₃	"	515	230	322	338	404	298
TKN	"	3.8	0.27	0.23	0.20	9.4	0.50
NH ₃ -N	"	3.8	<0.03	0.22	0.15	11	0.31
NO ₂ +NO ₃ -N	"	0.35	7.4	0.11	0.06	0.05	0.05
Total P	"	0.08	0.08	0.04	0.03	0.03	0.05
Cd	"	0.0012	<0.0003	0.0003	0.0005	0.0005	<0.0003
Cr	"	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	0.0053	0.0037	0.0109	0.0118	0.0014	0.0091
Fe	"	4.05	1.82	1.83	4.21	4.15	1.55
Mn	"	1.133	0.0269	0.0170	0.0337	0.0552	0.0638
Ni	"	0.0034	0.0023	0.0015	0.0016	0.0022	0.0012
Zn	"	0.0478	0.0366	0.0046	0.0086	0.0276	0.0101
Fecal coli- form per 100 mL		<1	<1	<1	<1	<1	<1

*Samples analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 3

ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT THE HANOVER
PARK FISCHER FARM SITE SAMPLED ON MAY 9, 2006

Parameter	Unit	Well					
		1	3	5	6	7	8
pH*		7.5	7.9	7.7	7.6	7.3	8.0
EC	mS/m	249	114	76	104	115	63
Cl ⁻	mg/L	522	15	14	23	34	7
SO ₄ ⁼	"	66	386	98	223	206	61
Alkalinity as CaCO ₃	"	483	252	325	358	545	294
TKN	"	5.2	0.43	0.56	0.55	11	0.54
NH ₃ -N	"	3.9	<0.03	0.24	0.15	10	0.32
NO ₂ +NO ₃ -N	"	0.39	0.11	0.07	0.07	0.03	0.04
Total P	"	0.19	0.08	0.06	0.06	0.07	0.07
Cd	"	0.0008	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cr	"	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	0.0032	0.0042	0.0352	0.0206	0.0010	0.0044
Fe	"	5.79	2.49	3.65	3.88	4.13	1.39
Mn	"	1.032	0.0364	0.0279	0.0266	0.0560	0.0461
Ni	"	0.0081	0.0023	0.0023	0.0049	0.0018	0.0014
Zn	"	0.0302	0.0500	0.0059	0.0085	0.0232	0.0044
Fecal coliform per 100 mL		<1	<1	<1	<1	<1	<1

*Samples analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 4

ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT THE HANOVER
PARK FISCHER FARM SITE SAMPLED ON MAY 23, 2006

Parameter	Units	Well					
		1	3	5	6	7	8
pH*		7.5	7.4	7.7	7.5	7.3	8.1
EC	mS/m	240	115	72	101	109	56
Cl ⁻	mg/L	582	16	14	23	34	7
SO ₄ ⁼	"	61	378	95	231	213	58
Alkalinity as CaCO ₃	"	464	235	319	360	406	288
TKN	"	4.7	0.37	0.35	0.29	9.2	0.34
NH ₃ -N	"	4.1	0.08	0.32	0.25	9.4	0.41
NO ₂ +NO ₃ -N	"	0.42	6.4	0.36	1.3	0.05	0.04
Total P	"	0.10	0.05	0.03	0.03	0.04	0.05
Cd	"	0.0015	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cr	"	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	0.0023	0.0053	0.0279	0.0127	<0.0005	0.0034
Fe	"	8.38	3.55	3.55	4.28	4.25	1.34
Mn	"	1.097	0.0987	0.0286	0.0297	0.0568	0.0416
Ni	"	0.0025	0.0022	0.0025	0.0012	0.0019	<0.0007
Zn	"	0.0411	0.0632	0.0152	0.0069	0.0423	0.0032
Fecal coliform per 100 mL		4,500	3	<1	<1	<1	<1

*Samples analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5

ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT THE HANOVER
PARK FISCHER FARM SITE SAMPLED ON JUNE 6, 2006

Parameter	Units	Well					
		1	3	5	6	7	8
pH*		7.3	7.8	7.6	7.5	7.3	8.2
EC	mS/m	246	110	75	107	119	62
Cl ⁻	mg/L	553	16	16	23	35	7
SO ₄ ⁼	"	54	387	97	227	218	58
Alkalinity as CaCO ₃	"	449	257	321	368	416	288
TKN	"	4.7	0.35	0.51	0.47	9.0	0.51
NH ₃ -N	"	4.2	<0.03	0.30	0.17	8.8	0.38
NO ₂ +NO ₃ -N	"	0.78	0.14	0.10	0.06	0.04	0.03
Total P	"	0.07	0.39	0.05	0.04	0.05	0.03
Cd	"	0.0014	0.0004	0.0003	0.0003	0.0003	<0.0003
Cr	"	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	0.0013	0.0046	0.0301	0.0169	<0.0005	0.0030
Fe	"	8.43	2.57	2.76	5.70	4.42	1.14
Mn	"	1.304	0.0491	0.0223	0.0343	0.0587	0.0390
Ni	"	0.0030	0.0021	0.0022	0.0028	0.0036	0.0018
Zn	"	0.0412	0.0580	0.0060	0.0080	0.0311	0.0071
Fecal coliform per 100 mL		25	<1	<1	<1	<1	<1

*Samples analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 6

ANALYSIS OF WATER FROM THE SIX MONITORING WELLS AT THE HANOVER
PARK FISCHER FARM SITE SAMPLED ON JUNE 20, 2006

Parameter	Units	Well					
		1	3	5	6	7	8
pH*		7.3	7.5	7.5	7.4	7.2	8.0
EC	mS/m	250	109	77	108	118	62
Cl ⁻	mg/L	544	17	13	23	35	7
SO ₄ ⁼	"	41	345	99	236	231	58
Alkalinity as CaCO ₃	"	460	261	322	369	424	292
TKN	"	5.7	0.43	0.41	0.38	8.9	0.62
NH ₃ -N	"	4.8	0.12	0.35	0.19	8.4	0.40
NO ₂ +NO ₃ -N	"	0.23	0.17	0.07	0.05	0.05	0.05
Total P	"	0.13	0.08	0.05	0.06	0.05	0.05
Cd	"	<0.0003	0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cr	"	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cu	"	<0.0005	0.0043	0.0454	0.0064	<0.0005	0.0019
Fe	"	8.91	11.5	2.51	4.94	4.56	1.30
Mn	"	1.170	0.6107	0.0223	0.0348	0.0593	0.0394
Ni	"	0.0025	0.0051	0.0026	0.0022	0.0022	0.0009
Zn	"	0.0216	0.0812	0.0101	0.0085	0.0240	0.0053
Fecal coliform per 100 mL		250	<1	<1	<1	<1	<1

*Samples analyzed beyond recommended holding time of 15 minutes.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7

ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT IN APRIL, MAY, AND JUNE 2006

Date	Sump	NH ₃ -N	Total Suspended Solids	BOD ₅
		----- mg/L -----		
4/04	East	19	32	10
	West	15	62	20
4/18	East	3.6	20	5
	West	1.3	11	7
5/09	East	21	17	7
	West	1.9	9	6
5/23	East	23	30	11
	West	1.3	10	3
6/06	East	1.3	10	<2
	West	0.08	8	<2
6/20	East	0.52	8	<2
	West	0.09	5	<2
MDL		0.03	2	2