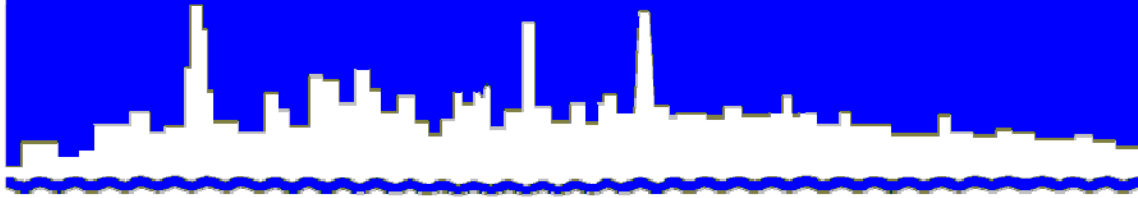


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 13-47

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

THIRD QUARTER 2013

NOVEMBER 2013

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, Illinois 60611-3154

312.751.5190

THOMAS C. GRANATO, Ph.D.

Director of Monitoring and Research

312.751.5190 f: 312.751.5194

thomas.granato@mwr.org

BOARD OF COMMISSIONERS

Kathleen Therese Meany

President

Barbara J McGowan

Vice President

Mariyana T. Spyropoulos

Chairman of Finance

Michael A. Alvarez

Frank Avila

Cynthia M. Santos

Debra Shore

Kari K. Steele

Patrick D. Thompson

November 18, 2013

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
July, August, September 2013

The attached report includes five tables of the monitoring results for the Hanover Park
Fischer Farm site for the third quarter of 2013.

Very truly yours,

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

TCG:PL:cm

Enclosures

cc: Mr. J. Patel, Manager, IEPA

Region 2 - Des Plaines

Mr. V. Aistars, USEPA Region 5

Mr. P. Kuefler, USEPA Region 5

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**

THIRD QUARTER 2013

**Monitoring and Research Department
Thomas C. Granato, Director**

November 2013

TABLE OF CONTENTS

	<u>Page</u>
FOREWORD	ii
LIST OF TABLES	iii
LIST OF FIGURES	iv
ACKNOWLEDGEMENT	v
DISCLAIMER	v
HANOVER PARK WATER RECLAMATION PLANT FISCHER FARM REPORT FOR THIRD QUARTER OF 2013	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. 2012-SC-2255 for the third quarter of 2013.

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1	Analysis of Water from Monitoring Well W-7 at the Hanover Park Fischer Farm Site Sampled During July, August, and September 2013	3
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 August 13, 2013	5
3	Analysis of Combined Surface and Subsurface Drainage from the Fischer Farm Site Returned to the Hanover Park Water Reclamation Plant During July, August, and September 2013	6
4	Analysis of Lagoon Supernatant Applied to Fields at the Hanover Park Fischer Farm Site During July, August, and September 2013	7
5	Volumes and Dry Weights of Lagoon Supernatant Applied to Fields at the Hanover Park Fischer Farm Site During July, August, and September 2013	8

LIST OF FIGURES

<u>Figure No.</u>		<u>Page</u>
1	Fields and Wells at the Hanover Park Fischer Farm Site of the Metropolitan Water Reclamation District of Greater Chicago	2

ACKNOWLEDGEMENT

The assistance given by Ms. Minaxi Patel, Assistant Environmental Chemist, of the Environmental Monitoring and Research Division, and Mr. John Chavich, Supervising Environmental Chemist, 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 THIRD QUARTER OF 2013

During July, August, and September 2013, 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. 2012-SC-2255. Fields and water monitoring locations are presented in Figure 1.

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 twice per month in July, August, and September. Analytical data for these samples are presented in Table 3. The volumes of drainage water returned to the WRP during the third quarter were estimated as 0.29, 0.70, and 1.31 million gallons in July, August, and September, 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.

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

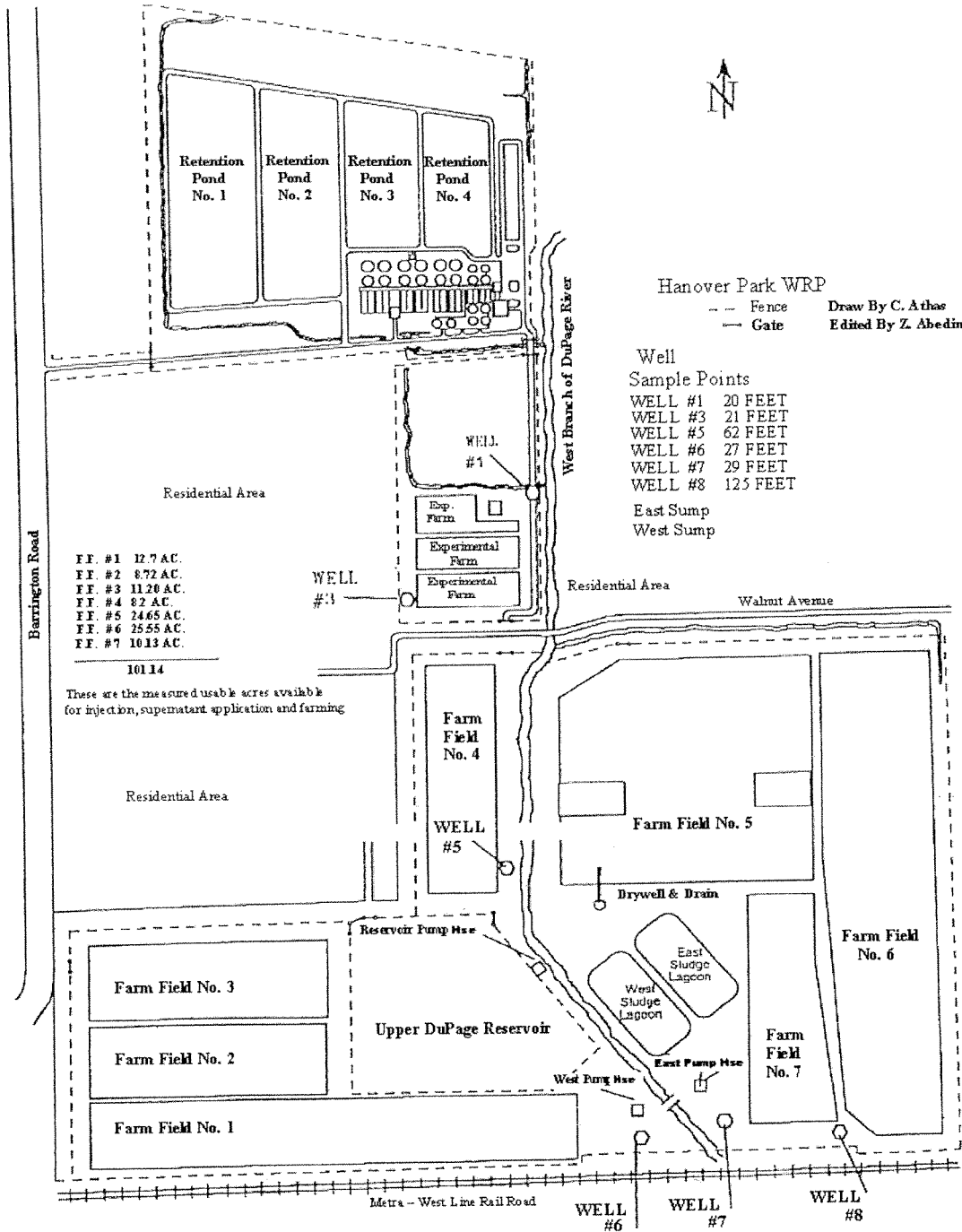


TABLE 1: ANALYSIS OF WATER FROM MONITORING WELL W-7
 AT THE HANOVER PARK FISCHER FARM SITE
 SAMPLED DURING JULY, AUGUST, AND SEPTEMBER 2013

Parameter	Unit	Date Sampled			
		07/09/13	07/23/13	08/13/13	08/20/13
pH ¹		7.4	7.2	7.3	7.3
EC	mS/m	147	143	151	153
Cl ⁻	mg/L	62	61	60	60
SO ₄ ⁼	"	238	229	215	219
Alkalinity as CaCO ₃	"	498	525	533	537
TKN	"	25	27	27	26
NH ₃ -N	"	25	26	27	27
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15	< 0.15	< 0.15
Total P	"	< 0.20	< 0.20	< 0.20	< 0.20
Cd	"	< 0.001	0.006	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	< 0.005	0.017
Fe	"	4	4	4	4
Mn	"	0.053	0.052	0.052	0.052
Ni	"	< 0.005	0.009	< 0.005	< 0.005
Zn	"	0.10	0.12	0.11	0.08

TABLE 1 (Continued): ANALYSIS OF WATER FROM MONITORING WELL W-7
 AT THE HANOVER PARK FISCHER FARM SITE
 SAMPLED DURING JULY, AUGUST, AND SEPTEMBER 2013

Parameter	Unit	Date Sampled	
		09/10/13	09/24/13
pH ¹		7.4	7.4
EC	mS/m	141	149
Cl ⁻	mg/L	58	56
SO ₄ ⁼	"	230	229
Alkalinity as CaCO ₃	"	549	525
TKN	"	29	53
NH ₃ -N	"	28	26
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15
Total P	"	< 0.20	0.36
Cd	"	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005
Fe	"	4	5
Mn	"	0.050	0.056
Ni	"	< 0.005	< 0.005
Zn	"	0.08	0.11

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 AUGUST 13, 2013

Parameter ¹	Unit	Monitoring Well No.			
		W-3	W-5	W-6	W-8
pH ¹		7.5	7.7	7.6	8.1
EC	mS/m	98	78	81	59
Cl ⁻	mg/L	16	14	18	< 10
SO ₄ ⁼	"	196	97	111	51
Alkalinity as CaCO ₃	"	325	311	303	259
TKN	"	3	< 1	< 1	< 1
NH ₃ -N	"	3	0.3	0.2	0.4
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15	< 0.15	< 0.15
Total P	"	0.28	< 0.20	< 0.20	< 0.20
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005	< 0.005
Cu	"	0.019	0.039	0.020	< 0.005
Fe	"	30	3	2	0.8
Mn	"	0.352	0.022	0.029	0.026
Ni	"	< 0.005	< 0.005	< 0.005	< 0.005
Zn	"	0.09	< 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 JULY, AUGUST, AND SEPTEMBER 2013

Date	Sump	NH ₃ -N	TSS ¹	BOD ₅
	 mg/L		
07/09/13	East	47	27	NRR ²
07/09/13	West	2	4	NRR ²
07/23/13	East	358	58	111
07/23/13	West	37	16	9
08/13/13	East	59	84	56
08/13/13	West	82	168	127
08/20/13	East	20	15	NRR ²
08/20/13	West	70	174	NRR ²
09/10/13	East	227	370	<2
09/10/13	West	301	650	<2
09/24/13	East	53	87	42
09/24/13	West	37	46	24

¹Total suspended solids.

²No reportable result.

TABLE 4: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS
 AT THE HANOVER PARK FISCHER FARM SITE
 DURING JULY, AUGUST, AND SEPTEMBER 2013

Parameter	Unit	Concentration ¹
pH		7.9
Total Solids	%	0.14
Total Volatile Solids ²	"	58.8
TKN	mg/L	424
NH ₃ -N	"	374
Total P	"	57
As	"	<0.05
Cd	"	<0.001
Cr	"	<0.005
Cu	"	0.051
Hg	"	< 0.20
Mn	"	0.158
Mo	"	<0.01
Ni	"	0.026
Pb	"	<0.02
Se	"	0.032
Zn	"	0.08

¹Values are the means of three samples.

²Total volatile solids as a percentage of total solids.

TABLE 5: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT
 APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE
 DURING JULY, AUGUST, AND SEPTEMBER 2013

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
1	08/07/13	Supernatant	540,000	3.60
2	09/09/13	"	300,000	2.38
5	07/11/13	"	460,000	2.88
5	09/26/13	"	410,000	2.05
Total			1,710,000	10.91