

## Well Development Record

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/3/2010  
Weather: 80°F, Sun

Well ID: MW - 1D  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	60 - 72'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	12.3

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	7.42
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	60.0
Total Depth* (feet):	70.5
Water Column (feet):	63.08
Casing Volume (gal):	11.49
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/3/2010 14:20
End Purge Date/Time:	6/3/2010 16:20
Total Column Purged (gal):	16 gal
Depth to Water After Purge* (feet):	

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Slow to pump

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## Well Development Record

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/3/2010  
Weather:

Well ID: MW - 11  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	30 - 42'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	42.0

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	6.27
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	30.0
Total Depth* (feet):	43.2
Water Column (feet):	13.7
Casing Volume (gal):	7.04
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/3/2010 12:43
End Purge Date/Time:	6/3/2010 13:26
Total Column Purged (gal):	16 gal
Depth to Water After Purge* (feet):	29.5

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

No odor

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## **Well Development Record**

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/3/2010
Weather:	80°F, Sun

Well ID: MW - 1S  
Sample ID:  
Permit Number:  
Well Condition: Good

## **PRE-PURGE INFORMATION**

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	3 - 15'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	98.5

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	3.45
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	3.0
Total Depth* (feet):	14.5
Water Column (feet):	11.05
Casing Volume (gal):	2.36
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/3/2010 11:00
End Purge Date/Time:	6/3/2010 13:00
Total Column Purged (gal):	12 gal
Depth to Water After Purge* (feet):	

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Well keeps going dry. 10 gal so far but turbidity still >1000. Note: dual-Phase pump is dead. Ordering a new one.

Well still turbid >1200. The well went dry 6 times.

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## Well Development Record

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/2/2010  
Weather: 85°F, Sun

Well ID: MW - 2D  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	60 - 72'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	3.0

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	7.17
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	60
Total Depth* (feet):	71.5
Water Column (feet):	62.3
Casing Volume (gal):	11.65
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 7:35
End Purge Date/Time:	6/2/2010 8:22
Total Column Purged (gal):	40 gal
Depth to Water After Purge* (feet):	9.2

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):  
No sheen or odor.

## **Well Development Record**

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/2/2010
Weather:	85°F, Sun

Well ID: MW - 3I  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	25 - 52'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	31.2

Depth to Product* (feet)	<u>N/M</u>
Initial Depth to Water* (feet):	<u>3.99</u>
Product Thickness (feet):	<u>N/M</u>
Depth to Top of Screen* (feet):	<u>25.0</u>
Total Depth* (feet):	<u>50.8</u>
Water Column (feet):	<u>43.9</u>
Casing Volume (gal):	<u>8.28</u>
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 14:50
End Purge Date/Time:	6/2/2010 15:37
Total Column Purged (gal):	40 gal
Depth to Water After Purge* (feet):	6.9

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

MGP-like odor on tubing when pulling out of well

Sheen blebs on H<sub>2</sub>O

#### Where depth to water

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## **Well Development Record**

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/2/2010  
Weather: 85°F, Sun

Well ID: MW - 3S  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	3 - 15'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	69.4

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	2.49
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	3.0
Total Depth* (feet):	14.5
Water Column (feet):	12
Casing Volume (gal):	2.36
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 13:05
End Purge Date/Time:	6/2/2010 13:35
Total Column Purged (gal):	12 gal
Depth to Water After Purge* (feet):	2.5

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Few small sheen blebs.

Slight MGP-like odor.

Where depth to water after purge was not available, used initial depth to water to calculate water column.

AECOM

## Well/Piezometer Development Record

Well/Piez. ID:  
MW-401

Client: National Grid Site Location: Metro  
 Project No: \_\_\_\_\_ Date: 4/29/11 Developer: Brett

## WELL/PIEZOMETER DATA

Well  Piezometer  Diameter 2" Material PEE

Measuring Point Description \_\_\_\_\_ Geology at Screen Interval \_\_\_\_\_  
 (if known) \_\_\_\_\_

Depth to Top of Screen (ft.) 115 \_\_\_\_\_

Depth to Bottom of Screen (ft.) 120 Time of Water Level Measurement 0830

Total Well Depth (ft.) 120 (115, 3') soft. Calculate Purge Volume (gal.) 19 gal = 1 well vol

Depth to Static Water Level (ft.) 3.2 Disposal Method Drum

Original Well Development  Redevelopment  Date of Original Development 4/29/11

**DEVELOPMENT METHOD** Waterfall Pump **PURGE METHOD** Swing block

Field Testing Equipment Used: Make \_\_\_\_\_ Model \_\_\_\_\_ Serial Number \_\_\_\_\_  
Horiiba u22  
Lamotte 2020

Field Testing Calibration Documentation Found in Field Notebook # \_\_\_\_\_ Page # \_\_\_\_\_

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1100	25	19.15	7.41	2.68	114.0	6.66	lt Brown	N/A	Silky
1110	45	17.52	7.5	35.4	55.9	2.14	clear	N/A	N/A
WP#	65	17.0	7.33	26.9	24.0	2.19	clear	N/A	N/A
-	wait to purge 95 gallons.								
1145	End Purge @	100 gal							

## ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (\_\_\_\_ well volumes) \_\_\_\_ gallons

Maximum Turbidity Allowed \_\_\_\_ NTUs

Stabilization of parameters \_\_\_\_ %

Has required volume been removed

Has required turbidity been reached

Have parameters stabilized

If no or N/A explain below:

Yes  No  N/A

Signature Kit Payag

Date: 4/29/11

105a Begin Purge

final DTB 119.82

AECOM

## Well/Piezometer Development Record

Well/Piez. ID:  
MW-4152Client: National GridSite Location: MetroProject No: \_\_\_\_\_ Date: 4/29/11 Developer: Boast

## WELL/PIEZOMETER DATA

Well  Piezometer  Diameter 2' Material PVC

Measuring Point Description \_\_\_\_\_ Geology at Screen Interval \_\_\_\_\_

Depth to Top of Screen (ft.) 142 \_\_\_\_\_Depth to Bottom of Screen (ft.) 147 ~~146.8~~ Time of Water Level Measurement 832Total Well Depth (ft.) 147 - 143.1 when measured Calculate Purge Volume (gal.) At least Pump out 5' 10 well vol 230 galDepth to Static Water Level (ft.) 3.2' Disposal Method Drum.Original Well Development  Redevelopment  Date of Original Development \_\_\_\_\_

## DEVELOPMENT METHOD

Water Pump

## PURGE METHOD

Field Testing Equipment Used: Make Model Serial Number

Hoshibu 22  
Lamate 2020

Field Testing Calibration Documentation Found in Field Notebook # \_\_\_\_\_ Page # \_\_\_\_\_

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
0850	Start Purge								
0910	85 <del>18.</del>	16.74	6.32	1.65	9109	2.60	Brown	N/A	No Sheen etc
0920	136	16.00	7.49	1.70	1066	1.22	lt Brown	"	"
0930	150	16.19	7.37	1.70	492	1.27	lt Brown	"	"
0940	75	16.22	7.79	1.78	176	2.30	lt Brown	"	"
0950	110	16.5	7.9	1.80	90.5	5.0	Opaque white	"	"
1000	130	16.49	7.88	1.82	81.9	4.78	"	"	"
1010	150	16.47	7.78	1.79	52.0	4.7	clear	"	"
1015	455	16.41	7.76	1.87	50.0	4.39	clear	"	"
1020	16	16.30	7.80	1.83	43.8	4.30	clear	"	"

## ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (10 well volumes) 230 gallons

Maximum Turbidity Allowed \_\_\_\_\_ NTUs

Stabilization of parameters \_\_\_\_\_ %

Workplan has now req'd a vol.

Has required volume been removed

Has required turbidity been reached

Have parameters stabilized

If no or N/A explain below:

Yes  No  N/A Signature Mr. PapageDate: 4/29/11

## Well Development Record

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/2/2010  
Weather: 85°F, Sun

Well ID: MW - 4I  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	25 - 37'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	0.0

Depth to Product* (feet)	<u>N/M</u>
Initial Depth to Water* (feet):	<u>3.95</u>
Product Thickness (feet):	<u>N/M</u>
Depth to Top of Screen* (feet):	<u>25.0</u>
Total Depth* (feet):	<u>37.6</u>
Water Column (feet):	<u>31.38</u>
Casing Volume (gal):	<u>6.13</u>
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 7:45
End Purge Date/Time:	6/2/2010 8:13
Total Column Purged (gal):	21 gal
Depth to Water After Purge* (feet):	6.22

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Small sheen blebs on purge water.

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## **Well Development Record**

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/1/2010
Weather:	89°F, T- Storms

Well ID: MW - 4S  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	3 - 15'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	0.0

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	4.94
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	3.0
Total Depth* (feet):	14.8
Water Column (feet):	10.02
Casing Volume (gal):	2.41
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time: 6/1/2010 15:25  
End Purge Date/Time: 6/1/2010 16:10  
Total Column Purged (gal): ~9 gal  
Depth to Water After Purge\* (feet): 4.78 (after ~5 min of recharge)

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Well keeps running dry so we let it recharge for 5 min. Recharge is very fast.

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## Well Development Record

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/1/2010  
Weather: 89°F, T-Storms

Well ID: MW - 5D  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	60 - 72'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	0.4

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	7.01
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	60.0
Total Depth* (feet):	71.7
Water Column (feet):	64.69
Casing Volume (gal):	11.69
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/1/2010 14:15
End Purge Date/Time:	6/1/2010 14:41
Total Column Purged (gal):	~25 gal
Depth to Water After Purge* (feet):	

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## **Well Development Record**

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/1/2010  
Weather: 89°F, T-Storms

Well ID: MW - 5I  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	38 - 50'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	2.5

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	7.09
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	38.0
Total Depth* (feet):	49.1
Water Column (feet):	42.01
Casing Volume (gal):	8.00
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/1/2010 13:25
End Purge Date/Time:	6/1/2010 13:50
Total Column Purged (gal):	22 gal
Depth to Water After Purge* (feet):	

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## **Well Development Record**

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/1/2010
Weather:	89°F, T-Storms

Well ID: MW - 5S  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	3 - 15'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	2.1

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	7.43
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	3.0
Total Depth* (feet):	15.5
Water Column (feet):	8.07
Casing Volume (gal):	2.53
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/1/2010 12:28
End Purge Date/Time:	6/1/2010 12:55
Total Column Purged (gal):	19 gal
Depth to Water After Purge* (feet):	

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## Well Development Record

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/2/2010
Weather:	85°F, Sun

Well ID: MW - 6I  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	30 - 42'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	2.1

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	6.72
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	30.0
Total Depth* (feet):	42.31
Water Column (feet):	34.51
Casing Volume (gal):	6.90
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 9:40
End Purge Date/Time:	6/2/2010 10:02
Total Column Purged (gal):	20 gal
Depth to Water After Purge* (feet):	7.8

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

No sheen or odor detected. Bottom is soft

Where depth to water after purge was not

to water to calculate wat

## Well Development Record

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/2/2010
Weather:	85°F, Sun

Well ID: MW - 6S  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	3 - 15'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	11.9

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	5.62
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	3.0
Total Depth* (feet):	15.1
Water Column (feet):	0.7
Casing Volume (gal):	2.46
DTW After Pump Installed:	

#### PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 8:55
End Purge Date/Time:	6/2/2010 9:29
Total Column Purged (gal):	10 gal
Depth to Water After Purge* (feet):	14.4

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):  
Where depth to water after purge was not available, used initial depth to water to calculate water column.

## Well Development Record

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/2/2010  
Weather: 85°F, Sun

Well ID: MW - 7I  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	30 - 42'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	10.2

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	6.98
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	30.0
Total Depth* (feet):	41.4
Water Column (feet):	24.2
Casing Volume (gal):	6.75
DTW After Pump Installed:	

#### PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 11:15
End Purge Date/Time:	6/2/2010 12:00
Total Column Purged (gal):	18 gal
Depth to Water After Purge* (feet):	17.2

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## **Well Development Record**

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 6/2/2010  
Weather: 85°F, Sun

Well ID: MW - 7S  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	3 - 15'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	54.7

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	5.39
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	3.0
Total Depth* (feet):	15.0
Water Column (feet):	6.3
Casing Volume (gal):	2.4
DTW After Pump Installed:	

PURGING/SAMPLING INFORMATION

Start Purge Date/Time: 6/2/2010 10:35  
End Purge Date/Time: 6/2/2010 10:52  
Total Column Purged (gal): 12 gal  
Depth to Water After Purge\* (feet): 8.7

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Water was very clear, slight coal-like odor

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## Well Development Record

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/3/2010
Weather:	80°F, Sun

Well ID: MW - 8I  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	30 - 42'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	0.0

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	4.51
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	30.0
Total Depth* (feet):	42.3
Water Column (feet):	35.1
Casing Volume (gal):	6.89
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time: 6/3/2010 8:57  
End Purge Date/Time: 6/3/2010 9:36  
Total Column Purged (gal): 25 gal  
Depth to Water After Purge\* (feet): 7.2

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Turbidity meter didn't read (possibly too turbid as it read the 10 NTU blank fine)

Small sheen blebs on H<sub>2</sub>O

Where depth to water after purge was not available, used initial depth to water to calculate water column.

# Well Development Record

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	6/2/2010
Weather:	85°F, Sun

Well ID: MW - 8S  
Sample ID:  
Permit Number:  
Well Condition: Good

## PRE-PURGE INFORMATION

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	3 - 15'
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	0.0

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	3.08
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	3.0
Total Depth* (feet):	17.1
Water Column (feet):	14.02
Casing Volume (gal):	2.79
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	6/2/2010 16:50
End Purge Date/Time:	6/3/2010 10:40
Total Column Purged (gal):	3 gal
Depth to Water After Purge* (feet):	

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: \_\_\_\_\_

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Pumped additional 2 gal from MW - 8S, went dry again. Note: appears the dual phase pump may have burned out. Not sure why

(it was at ~70' when it quit). Will see if we can get it back running.

Where depth to water after purge was not available, used initial depth to water to calculate water column.

## **Well Development Record**

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	9/21/2010
Weather:	70°F, Sun

Well ID:	MW - 9I
Sample ID:	
Permit Number:	
Well Condition:	Good

## **PRE-PURGE INFORMATION**

Protective Casing Diameter (inch):	<u>Manhole 8"</u>
Inner Casing Diameter (inch):	<u>2"</u>
Inner Casing Material:	<u>PVC sch. 40</u>
Purge/Sample Method:	<u>Surge/whale pump</u>
Pump Intake Setting* (feet):	<u>30-45</u>
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	<u>1.7</u>

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	6.59
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	30.0
Total Depth* (feet):	46.5
Water Column (feet):	39.91
Casing Volume (gal):	7.58
DTW After Pump Installed:	N/M

## **PURGING/SAMPLING INFORMATION**

Start Purge Date/Time:	9/21/2010 12:05
End Purge Date/Time:	9/21/10 16:30 (offsite)
Total Column Purged (gal):	36
Depth to Water After Purge* (feet):	not documented

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: J. Pfeiffer, J. Ehlen

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Good recharge rate during development. Water quality meter was not working, no water quality measurements collected, only turbidity. Turbidity was < 50 NTU.

## Well Development Record

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	9/21/2010
Weather:	70°F, Sun

Well ID: MW - 9D  
Sample ID:  
Permit Number:  
Well Condition: Good

## **PRE-PURGE INFORMATION**

Protective Casing Diameter (inch):	<u>Manhole 8"</u>
Inner Casing Diameter (inch):	<u>2"</u>
Inner Casing Material:	<u>PVC sch. 40</u>
Purge/Sample Method:	<u>Surge/whale pump</u>
Pump Intake Setting* (feet):	<u>60-70</u>
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	<u>1.6</u>

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	6.61
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	60.0
Total Depth* (feet):	71.69
Water Column (feet):	65.08
Casing Volume (gal):	11.69
DTW After Pump Installed:	N/M

## **PURGING/SAMPLING INFORMATION**

Start Purge Date/Time:	9/21/2010 12:05
End Purge Date/Time:	9/21/10 16:30 (offsite)
Total Column Purged (gal):	76
Depth to Water After Purge* (feet):	not documented

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: J. Pfeiffer, J. Ehlen

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

Good recharge rate during development. Water quality meter was not working, no water quality measurements collected, only turbidity. Turbidity was < 50 NTU.

## Well Development Record

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	11/20/2011
Weather:	40°F, mostly cloudy, slight breeze

Well ID: MW - 19S  
Sample ID:  
Permit Number:  
Well Condition: Good

## **PRE-PURGE INFORMATION**

Protective Casing Diameter (inch):	Manhole 8"
Inner Casing Diameter (inch):	2"
Inner Casing Material:	PVC sch. 40
Purge/Sample Method:	Surge/whale pump
Pump Intake Setting* (feet):	N/M
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	2.0

Depth to Product* (feet)	<u>N/M</u>
Initial Depth to Water* (feet):	<u>12.6</u>
Product Thickness (feet):	<u>N/M</u>
Depth to Top of Screen* (feet):	<u>N/M</u>
Total Depth* (feet):	<u>15.69</u>
Water Column (feet):	<u>3.09</u>
Casing Volume (gal):	<u>2.56</u>
DTW After Pump Installed:	<u> </u>

## **PURGING/SAMPLING INFORMATION**

Start Purge Date/Time:	not documented
End Purge Date/Time:	not documented
Total Volume Purged (gal):	not documented
Depth to Water After Purge* (feet):	not documented

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: J. Pfeiffer, B. Maye

**Observations During Sampling** (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings): notes provided above from field log book. No water quality measurements documented.

# Well Development Record

Project Number:	60137361
Project Name:	Metropolitan Former MGP Site
Date:	11/20/2011
Weather:	40°F, mostly cloudy, slight breeze

Well ID: MW - 19I  
Sample ID:  
Permit Number:  
Well Condition: Good

## **PRE-PURGE INFORMATION**

Protective Casing Diameter (inch): Manhole 8"  
Inner Casing Diameter (inch): 2"  
Inner Casing Material: PVC sch. 40  
Purge/Sample Method: Surge/whale pump  
Pump Intake Setting\* (feet): 33.19  
PID/FID Reading of Well Headspace (ppm)  
Before Cap Removal: \_\_\_\_\_  
After Cap Removal: 2.0

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	9.49
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	N/M
Total Depth* (feet):	33.8
Water Column (feet):	24.31
Casing Volume (gal):	5.51
DTW After Pump Installed:	

## PURGING/SAMPLING INFORMATION

Start Purge Date/Time:	not documented
End Purge Date/Time:	not documented
Total Column Purged (gal):	not documented
Depth to Water After Purge* (feet):	not documented

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: J. Pfeiffer, B. Maye

**Observations During Sampling** (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings): notes provided above from field log book. No water quality measurements documented.

## Well Development Record

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 11/20/2011  
Weather: 40°F, mostly cloudy, slight breeze

Well ID: MW - 20S  
Sample ID:  
Permit Number:  
Well Condition: Good

## **PRE-PURGE INFORMATION**

Protective Casing Diameter (inch):	<u>Manhole 8"</u>
Inner Casing Diameter (inch):	<u>2"</u>
Inner Casing Material:	<u>PVC sch. 40</u>
Purge/Sample Method:	<u>Surge/whale pump</u>
Pump Intake Setting* (feet):	<u>N/M</u>
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	<u>156.0</u>

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	8.32
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	N/M
Total Depth* (feet):	15.48
Water Column (feet):	7.16
Casing Volume (gal):	2.52
DTW After Pump Installed:	

#### **PURGING/SAMPLING INFORMATION**

Start Purge Date/Time:	not documented
End Purge Date/Time:	not documented
Total Volume Purged (gal):	not documented
Depth to Water After Purge* (feet):	not documented

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: J. Pfeiffer, B. Maye

**Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):**  
notes provided above from field log book. No water quality measurements documented.

## **Well Development Record**

Project Number: 60137361  
Project Name: Metropolitan Former MGP Site  
Date: 11/20/2011  
Weather: 40°F, mostly cloudy, slight breeze

Well ID: MW - 20I  
Sample ID:  
Permit Number:  
Well Condition: Good

## **PRE-PURGE INFORMATION**

Protective Casing Diameter (inch):	<u>Manhole 8"</u>
Inner Casing Diameter (inch):	<u>2"</u>
Inner Casing Material:	<u>PVC sch. 40</u>
Purge/Sample Method:	<u>Surge/whale pump</u>
Pump Intake Setting* (feet):	<u>N/M</u>
PID/FID Reading of Well Headspace (ppm)	
Before Cap Removal:	
After Cap Removal:	<u>0.6</u>

Depth to Product* (feet)	N/M
Initial Depth to Water* (feet):	6.99
Product Thickness (feet):	N/M
Depth to Top of Screen* (feet):	N/M
Total Depth* (feet):	39.8
Water Column (feet):	32.81
Casing Volume (gal):	6.49
DTW After Pump Installed:	

## **PURGING/SAMPLING INFORMATION**

Start Purge Date/Time:	not documented
End Purge Date/Time:	not documented
Total Volume Purged (gal):	not documented
Depth to Water After Purge* (feet):	not documented

Pre-Sample Depth to Water\* (feet): \_\_\_\_\_  
Start Sample Date/Time: \_\_\_\_\_  
End Sample Date/Time: \_\_\_\_\_  
Sampler Names: J. Pfeiffer, B. Maye

**Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):** notes provided above from field log book. No water quality measurements documented.









Well/Piez. ID:  
MW-23

**AECOM**

## Well/Piezometer Development Record

Client: National Grid

Site Location: Metropolitan

Project No: 60137361

Date: 12/19/11

Developer: J. Ehlen / K. Barbour

### WELL/PIEZOMETER DATA



Piezometer

Diameter 2"

Material PVC

Geology at Screen Interval  
(if known)

2.31'

Time of Water Level Measurement

952

dtb 71.51' b.t.c  
69.2' f water

Calculate Purge Volume (gal.)

11.29 gal

Disposal Method

55 gal drum

Wellhead PID/FID

0.6



Redevelopment

Date of Original Development

### PURGE METHOD

double whale pump

Make

Model

Serial Number

Hanba

0-52

18774

Hach

2100P

012357

1140 Am dtw 2.20' b.t.c

time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	drawdown Other
1145	2.5	15.51	7.09	6.68	383	1.45	cloudy brown	none	2.23
1150	6	15.62	7.20	6.76	220	1.16	white cloudy	none	2.25
1155	8.5	15.61	7.22	7.03	27	1.01	clear	none	2.21
1200	11	15.59	7.22	7.14	20	0.92	clear	none	2.20
1205	14	15.64	7.23	7.17	21	0.87	clear	none	2.18
1210	16.5	15.64	7.22	7.18	19	0.82	clear	none	2.15
1211	Stop pumping	MW-23							

### ACCEPTANCE CRITERIA (from workplan)

Maximum Turbidity Allowed 50 NTUs

Has required volume been removed

Yes  No  N/A

Has required turbidity been reached

Have parameters stabilized

If no or N/A explain below:

No Sheen / odor on purge water  
~35 gal of water recharged

Date: 12/19/11

dtw after pumping = 2.13' b.t.c

dtb after pumping =



