

**Quarterly Report  
Second Quarter 2013**

**For the period:  
April 1 to June 31, 2013**

Exxon Mobil Corporation Baltimore Terminal  
3801 Boston Street  
Baltimore, Maryland 21224

**Prepared for:**

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**Quarterly Report – Second Quarter 2013**  
**Baltimore City Property – Upper Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

Environmental activities have been completed on several properties owned by Baltimore City. There are two parcels located between the Northern edge of Boston St. and the southern property line of the Toone St. parcel both east and west of South Haven Street. A third property is a 30 foot wide parcel located along the east side of the railroad tracks closest to the western property line of the 14<sup>th</sup> St. parcel. There are currently 19 upper zone wells located on Baltimore City property, which are referenced in the attached site map. Total LNAPL recovered from the property during the quarter was 2.06 gallons. Environmental activities completed during the past quarter and those planned for the following quarter are listed below. Environmental activities associated with the Janney Run are detailed in the Janney Run section of the report.

**Activities Completed During Q2, 2013:**

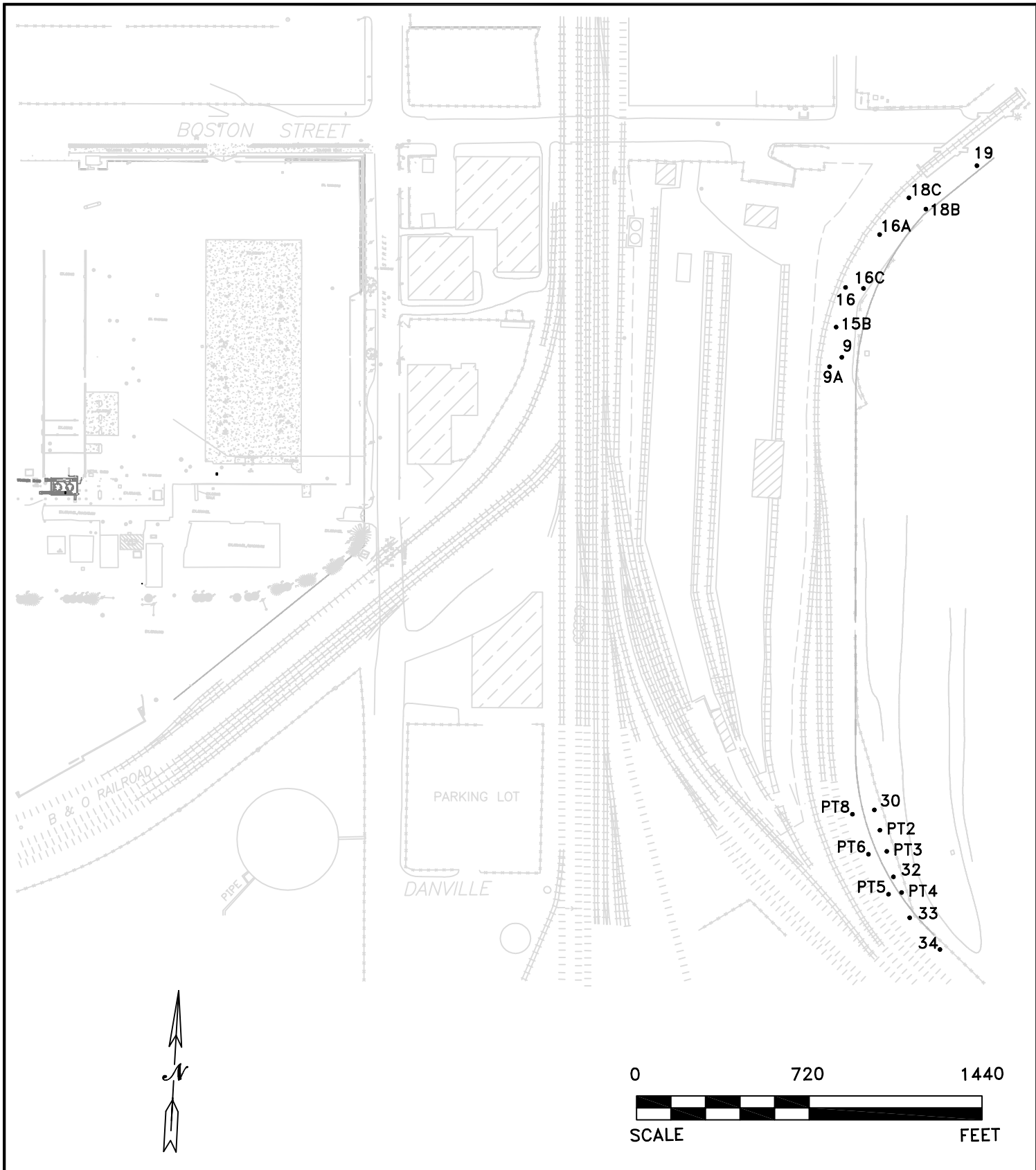
- Quarterly gauging of all wells.

**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of all wells.
- Submission of abandonment request for select Janney Run monitoring wells on City property.

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)



LEGEND

- 2903 GROUNDWATER MONITORING WELL
- ABANDONED GROUNDWATER MONITORING WELL
- EXISTING R.R. TRACKS

NOTE: WELL LOCATIONS ARE APPROXIMATE



TETRA TECH

SITE MAP

BALTIMORE CITY PROPERTY

BALTIMORE, MD 21224

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Balto City	J09	25-Sep-12	8.83	8.83	19.39	0
		03-Jan-13	9.05	9.05	19.17	0
		03-Jan-13	9.05	9.05	19.17	0
		22-Mar-13	8.61	8.61	19.61	0
		19-Jun-13	7.34	7.34	20.88	0
	J09A	25-Sep-12	8.94	8.94	20.19	0
		03-Jan-13	9.31	9.31	19.82	0
		22-Mar-13	9.32	9.32	19.81	0
		19-Jun-13	7.35	7.35	21.78	0
	J15B	25-Sep-12	9.81	9.81	17.1	0
		03-Jan-13	9.98	9.98	16.93	0
		22-Mar-13	9.5	9.5	17.41	0
		19-Jun-13	8.43	8.43	18.48	0
	J16	25-Sep-12	10.43	10.43	16.92	0
		03-Jan-13	10.35	10.35	17	0
		22-Mar-13	10.06	10.06	17.29	0
		19-Jun-13	9.25	9.25	18.1	0
	J16A	25-Sep-12	8.65	8.65	18.37	0
		03-Jan-13	8.69	8.69	18.33	0
		22-Mar-13	6.49	6.49	20.53	0
		19-Jun-13	7.64	7.65	19.38	0.01
	J16C	25-Sep-12	7.73	7.73	19.48	0
		03-Jan-13	7.07	7.07	20.14	0
		22-Mar-13	6.85	6.85	20.36	0
		19-Jun-13	5.56	5.56	21.65	0
	J18B	25-Sep-12	7.98	8.02	19.13	0.04
		03-Jan-13	7.84	7.84	19.27	0
		22-Mar-13	7.33	7.33	19.78	0
		19-Jun-13	6.59	6.6	20.52	0.01
	J18C	25-Sep-12	7.97	7.97	18.1	0
		03-Jan-13	7.97	7.97	18.1	0
		22-Mar-13	7.4	7.4	18.67	0
		19-Jun-13	7.21	7.21	18.86	0
	J19	25-Sep-12	6.87	6.96	21.11	0.09
		03-Jan-13	6.82	6.98	21.16	0.16
		22-Mar-13	6.69	6.69	21.29	0
		19-Jun-13	6.23	6.34	21.75	0.11
	J30	10-Jul-12	9.45	9.69	17.05	0.24
		25-Jul-12	8	8.26	18.5	0.26
		09-Aug-12	8.32	8.73	18.16	0.41
		23-Aug-12	8.57	9.37	17.87	0.8
		11-Sep-12	7.66	7.72	18.86	0.06
		25-Sep-12	8.23	8.43	18.27	0.2
		15-Oct-12	8.84	9.41	17.62	0.57
		24-Oct-12	9.02	9.52	17.45	0.5
		15-Nov-12	7.33	7.38	19.19	0.05
		29-Nov-12	8.09	8.2	18.42	0.11
		03-Jan-13	7.93	8.01	18.58	0.08
		28-Mar-13	8.12	8.39	18.38	0.27
		19-Jun-13	6.86	6.88	19.66	0.02
	J32	10-Jul-12	10.85	11.37	16.14	0.52
		25-Jul-12	9.37	9.93	17.62	0.56
		09-Aug-12	9.63	10.6	17.32	0.97

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Balto City	J32	23-Aug-12	9.92	10.81	17.03	0.89
		11-Sep-12	9.04	9.76	17.93	0.72
		25-Sep-12	9.43	10.39	17.52	0.96
		15-Oct-12	10.12	10.91	16.84	0.79
		24-Oct-12	10.27	11.12	16.69	0.85
		15-Nov-12	8.49	9.52	18.45	1.03
		29-Nov-12	9.36	10.45	17.57	1.09
		03-Jan-13	9.45	10.6	17.48	1.15
		30-Jan-13	9.5	10.66	17.43	1.16
		28-Feb-13	9.5	10.19	17.47	0.69
		28-Mar-13	9.75	10.29	17.24	0.54
		19-Jun-13	8.17	8.98	18.79	0.81
	J33	25-Jul-12	8.57	8.57	16.13	0
		23-Aug-12	8.96	8.96	15.74	0
		25-Sep-12	8.69	8.69	16.01	0
		24-Oct-12	9.36	9.36	15.34	0
		29-Nov-12	8.46	8.46	16.24	0
		03-Jan-13	8.3	8.3	16.4	0
		28-Mar-13	8.54	8.54	16.16	0
		19-Jun-13	7.29	7.29	17.41	0
	J34	25-Jul-12	8.68	8.68	15.59	0
		23-Aug-12	9.32	9.32	14.95	0
		25-Sep-12	8.64	8.64	15.63	0
		24-Oct-12	9.68	9.68	14.59	0
		29-Nov-12	8.6	8.6	15.67	0
		03-Jan-13	8.2	8.2	16.07	0
		28-Mar-13	8.68	8.68	15.59	0
		19-Jun-13	6.89	6.89	17.38	0
	JCITY	25-Sep-12	8.53	8.55	20.47	0.02
		03-Jan-13	8.48	8.48	20.52	0
		22-Mar-13	8.33	8.33	20.67	0
		19-Jun-13	7.49	7.49	21.51	0
	PT-2	25-Jul-12	6.59	6.59	19.91	0
		23-Aug-12	6.87	6.87	19.63	0
		25-Sep-12	6.66	6.66	19.84	0
		24-Oct-12	7.1	7.1	19.4	0
		29-Nov-12	7.68	7.68	18.82	0
		03-Jan-13	6.32	6.32	20.18	0
		28-Mar-13	6.43	6.43	20.07	0
		19-Jun-13	5.47	5.47	21.03	0
	PT-3	10-Jul-12	7.87	10.67	18.14	2.8
		25-Jul-12	6.39	9.26	19.61	2.87
		09-Aug-12	6.65	10.09	19.25	3.44
		23-Aug-12	6.94	10.21	18.99	3.27
		11-Sep-12	5.93	9.01	20.03	3.08
		25-Sep-12	6.47	9.76	19.46	3.29
		15-Oct-12	7.51	10.51	18.47	3
		24-Oct-12	7.32	10.74	18.58	3.42
		15-Nov-12	5.56	8.34	20.46	2.78
		29-Nov-12	6.44	9.26	19.57	2.82
		03-Jan-13	6.54	9.92	19.37	3.38
		30-Jan-13	6.5	10.34	19.33	3.84
		28-Feb-13	6.42	10.45	19.38	4.03
		28-Mar-13	6.72	10.15	19.18	3.43
		30-Apr-13	6.81	10.04	19.13	3.23

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Balto City	PT-3	31-May-13	6.79	10.45	19.07	3.66
		19-Jun-13	5.27	7.84	20.78	2.57
	PT-4	25-Jul-12	6.11	6.11	20.39	0
		23-Aug-12	6.73	6.73	19.77	0
		25-Sep-12	6.23	6.23	20.27	0
		24-Oct-12	7.11	7.11	19.39	0
		29-Nov-12	14.56	14.56	11.94	0
		03-Jan-13	6.06	6.06	20.44	0
		28-Mar-13	6.32	6.32	20.18	0
		19-Jun-13	4.76	4.76	21.74	0
	PT-5	25-Jul-12	7.72	7.72	18.78	0
		23-Aug-12	7.71	7.71	18.79	0
		25-Sep-12	7.73	7.73	18.77	0
		24-Oct-12	7.72	7.72	18.78	0
		29-Nov-12	8.18	8.18	18.32	0
		03-Jan-13	7.7	7.7	18.8	0
		28-Mar-13	7.73	7.73	18.77	0
		19-Jun-13	7.27	7.27	19.23	0
	PT-6	25-Jul-12	7.37	7.37	19.13	0
		23-Aug-12	9.17	9.17	17.33	0
		25-Sep-12	8.28	8.28	18.22	0
		24-Oct-12	9.12	9.12	17.38	0
		29-Nov-12	6.55	6.55	19.95	0
		03-Jan-13	7.96	7.96	18.54	0
		28-Mar-13	8.61	8.61	17.89	0
		19-Jun-13	6	6	20.5	0
	PT-8	25-Jul-12	9.54	9.54	16.96	0
		23-Aug-12	10.9	10.9	15.6	0
		25-Sep-12	10.42	10.42	16.08	0
		24-Oct-12	10.91	10.91	15.59	0
		29-Nov-12	10.24	10.24	16.26	0
		03-Jan-13	10.07	10.07	16.43	0
		28-Mar-13	10.58	10.58	15.92	0
		19-Jun-13	8.07	8.07	18.43	0

**Quarterly Report – Second Quarter 2013**  
**Canton Railroad Property – Upper Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

The Canton Railroad property is located at 4201 Boston Street, west of the ExxonMobil 14<sup>th</sup> Street parcel. There are currently 11 upper zone wells located on the parcel, which are referenced in the attached site map. Total LNAPL recovered from the property during the quarter was 0.18 gallons. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

- Quarterly gauging of all wells.

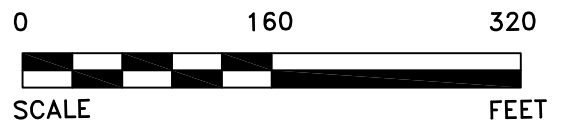
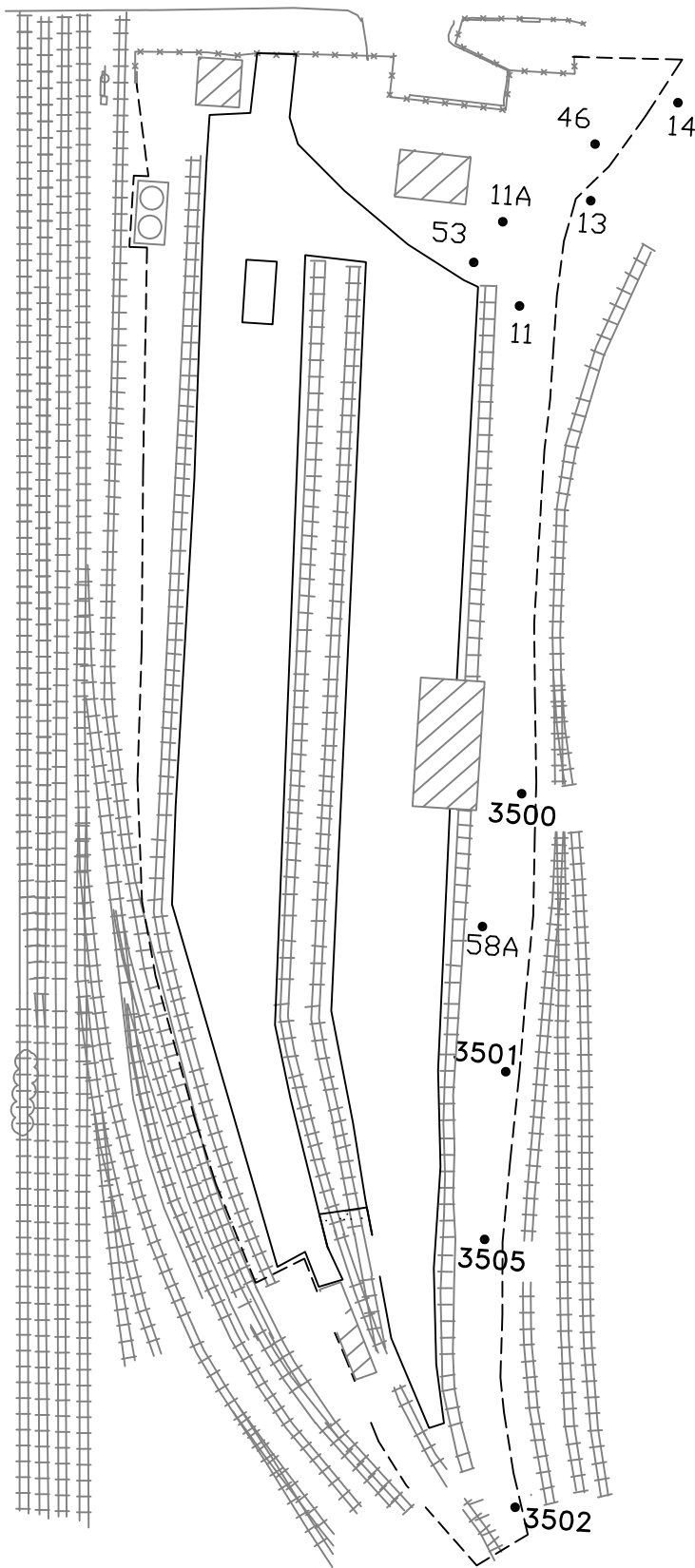
**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of all wells.
- Submission of abandonment request for select Janney Run monitoring wells on Canton Railroad property.






**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)





LEGEND

- 
GROUNDWATER MONITORING WELLS
- 
EXISTING BUILDINGS
- 
EXISTING R.R. TRACKS
- 
ASPHALT PAVEMENT
- 
FENCE LINE

NOTE: WELL LOCATIONS ARE APPROXIMATE



CANTON R.R. PROPERTY UPPER ZONE  
 4201 BOSTON STREET  
 BALTIMORE, MD 21224

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Canton R.R.	3500	26-Sep-12	11.43	11.43	20.09	0
		19-Dec-12	12.33	12.33	19.19	0
		28-Mar-13	11.99	11.99	19.53	0
		20-Jun-13	9.79	9.79	21.73	0
	3501	26-Sep-12	11.21	11.21	19.55	0
		19-Dec-12	12.14	12.14	18.62	0
		28-Mar-13	12.04	12.04	18.72	0
		20-Jun-13	9.58	9.58	21.18	0
	3502	25-Jul-12	12.05	12.25	16.88	0.2
		23-Aug-12	12.48	12.64	16.45	0.16
		26-Sep-12	12.33	12.54	16.6	0.21
		24-Oct-12	12.99	13.26	15.93	0.27
		29-Nov-12	12.43	12.62	16.5	0.19
		19-Dec-12	13.04	13.18	15.9	0.14
		28-Mar-13	12.61	12.76	16.32	0.15
		20-Jun-13	11.12	11.31	17.81	0.19
	3505	26-Sep-12	10.98	10.98	19.31	0
		19-Dec-12	11.56	11.56	18.73	0
		28-Mar-13	11.25	11.25	19.04	0
		20-Jun-13	9.79	9.8	20.5	0.01
	J11	25-Jul-12	8.66	8.83	21.13	0.17
		23-Aug-12	8.94	9.12	20.84	0.18
		26-Sep-12	7.06	7.24	22.72	0.18
		24-Oct-12	7.65	7.93	22.11	0.28
		29-Nov-12	7.42	7.91	22.29	0.49
		19-Dec-12	6.91	7.02	22.89	0.11
		30-Jan-13	7.52	7.58	22.29	0.06
		28-Mar-13	9.73	9.82	20.07	0.09
		18-Jun-13	8.2	8.29	21.6	0.09
	J11A	26-Sep-12	2.32	2.32	22.68	0
		03-Jan-13	2.29	2.29	22.71	0
		18-Jun-13	2.45	2.45	22.55	0
	J13	26-Sep-12	6.23	6.23	17.91	0
		19-Dec-12	6.5	6.5	17.64	0
		28-Mar-13	6.12	6.12	18.02	0
		18-Jun-13	5.49	5.49	18.65	0
	J14	26-Sep-12	5.86	5.86	17.42	0
		19-Dec-12	6.1	6.17	17.16	0.07
		28-Mar-13	5.67	5.71	17.6	0.04
	J46	26-Sep-12	4.43	4.43	22.34	0
		19-Dec-12	4.92	4.92	21.85	0
		28-Mar-13	4.97	4.97	21.8	0
		18-Jun-13	4.72	4.72	22.05	0
	J53	25-Jul-12	4.06	4.27	25.36	0.21
		09-Aug-12	4.36	4.51	25.08	0.15
		25-Sep-12	4.61	4.72	24.84	0.11
		24-Oct-12	5.04	5.09	24.42	0.05
		29-Nov-12	4.64	4.83	24.79	0.19
		19-Dec-12	5.06	5.07	24.41	0.01
		28-Mar-13	4.49	4.5	24.98	0.01
		20-Jun-13	3.33	3.33	26.14	0
	J58A	25-Sep-12	9.61	9.61	17.12	0
		19-Dec-12	10.42	10.42	16.31	0

<b>Area</b>	<b>Well No</b>	<b>Guage Date</b>	<b>Depth to Product</b>	<b>Depth to Water</b>	<b>Potentiometric Elevation</b>	<b>Apparent Thickness</b>
Canton R.R.	J58A	28-Mar-13	9.77	9.77	16.96	0
		19-Jun-13	8.28	8.28	18.45	0

**Quarterly Report – Second Quarter 2013**  
**Janney Run Area**  
**ExxonMobil Baltimore Terminal**  
**3801 Boston Street**  
**Baltimore, Maryland 21224**

The Janney Run project area is located west of the 14<sup>th</sup> Street parcel. There are currently 54 wells located in the project area. The Janney Run area includes portions of properties owned by Baltimore City, Canton Railroad, and ExxonMobil. LNAPL recovery from wells is detailed by parcel. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

- Weekly inspection of storm sewer outfall.
- Quarterly gauging of all wells.
- Weekly monitoring of storm sewer culvert.
- Removal of floor tiles from Janney Run culvert and associated LNAPL seep grouting (if necessary) in preparation of continued installation of grout-in-place liner.

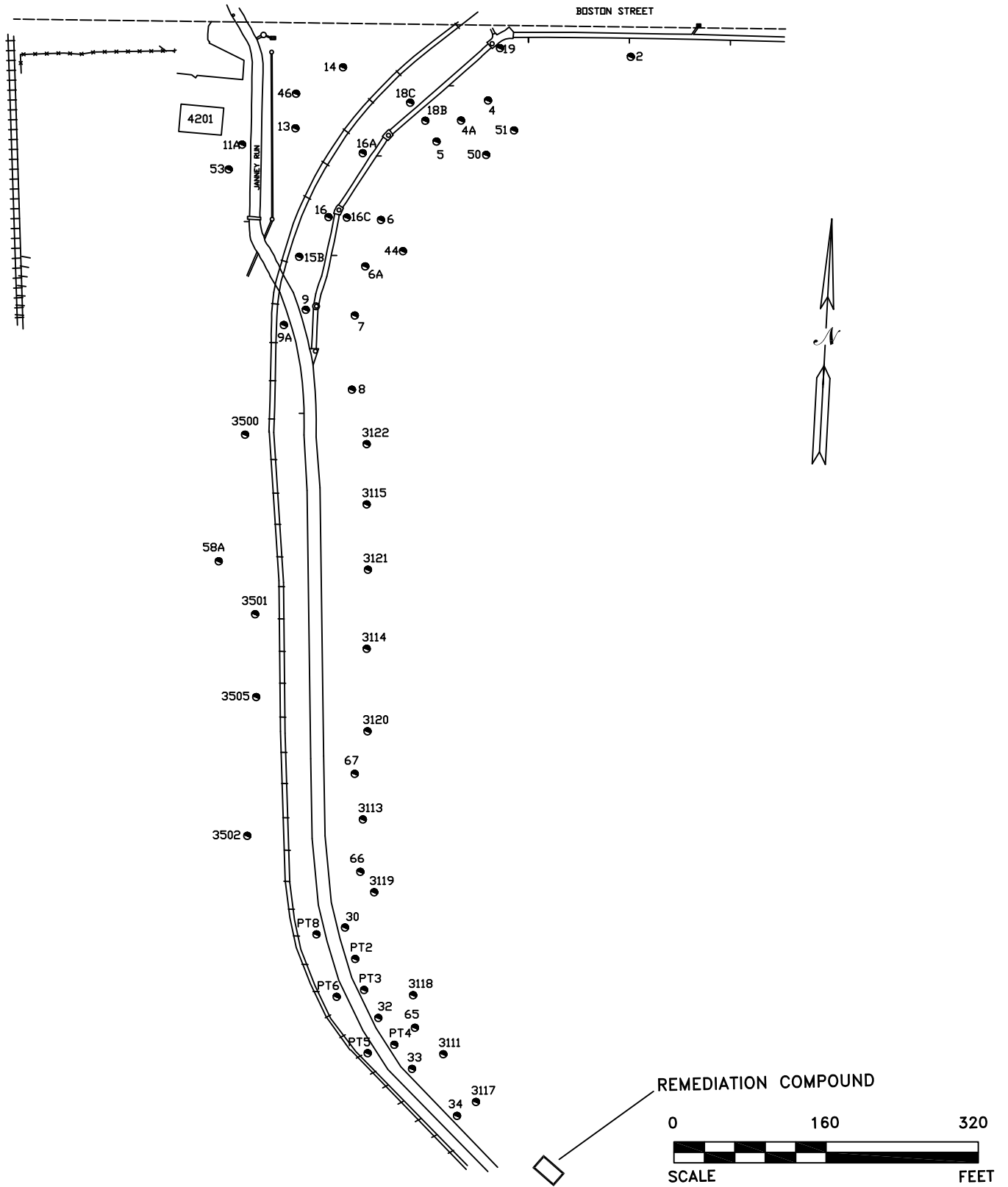
**Activities Scheduled for Completion During Q3, 2013:**

- Weekly inspection of storm sewer outfall.
- Quarterly gauging of all wells.
- Weekly monitoring of storm sewer culvert.
- Completion of floor tile removal from Janney Run culvert and associated LNAPL seep grouting (if necessary) in preparation of continued installation of grout-in-place liner.

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data for Janney Run Project wells located on ExxonMobil Property (Second Quarter 2012 – Second Quarter 2013)

(Note – off site gauging data associated with the Janney Run Area is presented in each of the individual property sections of this report).



LEGEND

- TEMPORARY WELL LOCATIONS

NOTE: WELL LOCATIONS ARE APPROXIMATE



TETRA TECH GEO

SITE MAP  
JANNEY RUN AREA

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
14th Street West	3111	25-Sep-12	7.91	7.91	18.18	0
		03-Jan-13	7.46	7.46	18.63	0
		27-Mar-13	7.64	7.64	18.45	0
		19-Jun-13	6.34	6.34	19.75	0
	3113	25-Sep-12	6.64	6.64	19.34	0
		03-Jan-13	5.89	5.89	20.09	0
		27-Mar-13	5.89	5.89	20.09	0
		19-Jun-13	4.68	4.68	21.3	0
	3114	25-Sep-12	7.21	7.21	19.31	0
		03-Jan-13	6.36	6.36	20.16	0
		27-Mar-13	6.44	6.44	20.08	0
		19-Jun-13	5.23	5.23	21.29	0
	3115	25-Sep-12	7.87	7.87	19.3	0
		03-Jan-13	7.04	7.04	20.13	0
		27-Mar-13	7.12	7.12	20.05	0
		19-Jun-13	5.9	5.9	21.27	0
	3117	25-Sep-12	3.48	3.48	19.45	0
		03-Jan-13	3.93	3.93	19	0
		27-Mar-13	4.1	4.1	18.83	0
		19-Jun-13	2.82	2.82	20.11	0
	3118	25-Sep-12	4.53	4.53	18.7	0
		03-Jan-13	4.1	4.1	19.13	0
		27-Mar-13	4.13	4.13	19.1	0
		19-Jun-13	2.98	2.98	20.25	0
	3119	25-Sep-12	3.33	3.33	19.77	0
		03-Jan-13	2.49	2.49	20.61	0
		27-Mar-13	2.6	2.6	20.5	0
		19-Jun-13	1.36	1.36	21.74	0
	3120	25-Sep-12	2.84	2.84	19.82	0
		03-Jan-13	1.98	1.98	20.68	0
		27-Mar-13	2.06	2.06	20.6	0
		19-Jun-13	0.85	0.85	21.81	0
	3121	25-Sep-12	4.62	4.62	18.76	0
		03-Jan-13	2.72	2.72	20.66	0
		27-Mar-13	2.8	2.8	20.58	0
		19-Jun-13	1.59	1.59	21.79	0
	3122	25-Sep-12	4.32	4.32	19.81	0
		03-Jan-13	3.5	3.5	20.63	0
		27-Mar-13	3.59	3.59	20.54	0
		19-Jun-13	2.41	2.41	21.72	0
	J02	25-Sep-12	14.22	14.22	20.2	0
		19-Dec-12	14.32	14.32	20.1	0
		22-Mar-13	13.57	13.57	20.85	0
		19-Jun-13	13.44	13.44	20.98	0
	J04	25-Sep-12	6.38	6.38	19.52	0
		03-Jan-13	5.88	5.88	20.02	0
		22-Mar-13	5.45	5.45	20.45	0
		19-Jun-13	4.56	4.56	21.34	0
	J04A	25-Sep-12	6.96	6.96	18.46	0
		03-Jan-13	6.42	6.42	19	0
		22-Mar-13	6.2	6.2	19.22	0
		19-Jun-13	5	5	20.42	0
	J05	25-Sep-12	7.45	7.45	17.25	0

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
14th Street West	J05	03-Jan-13	6.78	6.78	17.92	0
		22-Mar-13	6.22	6.4	18.45	0.18
		19-Jun-13	5.24	5.29	19.45	0.05
	J06	25-Sep-12	7.96	7.96	19.49	0
		03-Jan-13	8.63	8.63	18.82	0
		22-Mar-13	7.1	7.1	20.35	0
	J06A	19-Jun-13	5.57	5.57	21.88	0
		25-Sep-12	7.81	7.81	20.15	0
		03-Jan-13	4.91	4.91	23.05	0
	J07	22-Mar-13	6.37	6.37	21.59	0
		19-Jun-13	5.29	5.29	22.67	0
		25-Sep-12	8.78	8.78	17.65	0
	J08	03-Jan-13	8.76	8.76	17.67	0
		22-Mar-13	8.12	8.12	18.31	0
		20-Jun-13	7.35	7.35	19.08	0
	J50	25-Sep-12	8.62	8.62	19.74	0
		03-Jan-13	8.52	8.52	19.84	0
		22-Mar-13	7.89	7.89	20.47	0.00
	J51	20-Jun-13	7.16	7.16	21.20	0.00
		25-Sep-12	6.67	6.67	19.77	0.00
		03-Jan-13	5.96	5.96	20.48	0.00
	J65	22-Mar-13	5.98	5.98	20.46	0.00
		19-Jun-13	4.55	4.55	21.89	0.00
		25-Sep-12	6.17	6.17	19.80	0.00
	J66	03-Jan-13	5.55	5.55	20.42	0.00
		22-Mar-13	5.18	5.18	20.79	0.00
		19-Jun-13	4.21	4.21	21.76	0.00
	J67	25-Sep-12	8.65	8.65	18.12	0.00
		03-Jan-13	8.19	8.19	18.58	0.00
		27-Mar-13	8.65	8.65	18.12	0.00
	J67	19-Jun-13	7.09	7.09	19.68	0.00
		25-Sep-12	7.97	7.97	18.53	0.00
		03-Jan-13	6.58	6.58	19.92	0.00
	J67	27-Mar-13	7.12	7.12	19.38	0.00
		19-Jun-13	6.40	6.41	20.10	0.01
		25-Sep-12	7.34	7.34	19.25	0.00
	J67	03-Jan-13	6.55	6.55	20.04	0.00
		27-Mar-13	6.58	6.58	20.01	0.00
		19-Jun-13	5.42	5.42	21.17	0.00

**Quarterly Report – Second Quarter 2013**  
**Main Terminal Area Parcel - Lower Zone**  
**ExxonMobil Baltimore Terminal**  
**3801 Boston Street**  
**Baltimore, Maryland 21224**

The Main Terminal Area (MTA) parcel is located directly south of Boston Street spanning from South Haven Street on the east to Baylis Street on the west. There are currently 9 lower zone wells located on the parcel and 1 lower zone well located in an easement east of the parcel. A lower zone LNAPL skimming system is in place at the MTA, which includes six LNAPL skimming pumps located at wells 2624, 2627, 2628, 2629, 2632 and 2638. Apparent LNAPL thickness and groundwater potentiometric elevation maps are presented in the appendices of this report. Total LNAPL recovery from the MTA area lower zone during this quarter was approximately 13,813 gallons. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

- Quarterly gauging of all wells.
- Continued operation of the MTA/Toone Street Lower Zone recovery system.
- Recovery performance optimization.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Recovery testing of 2930.
- Completion of MDE technical meeting per Consent Decree requirement.

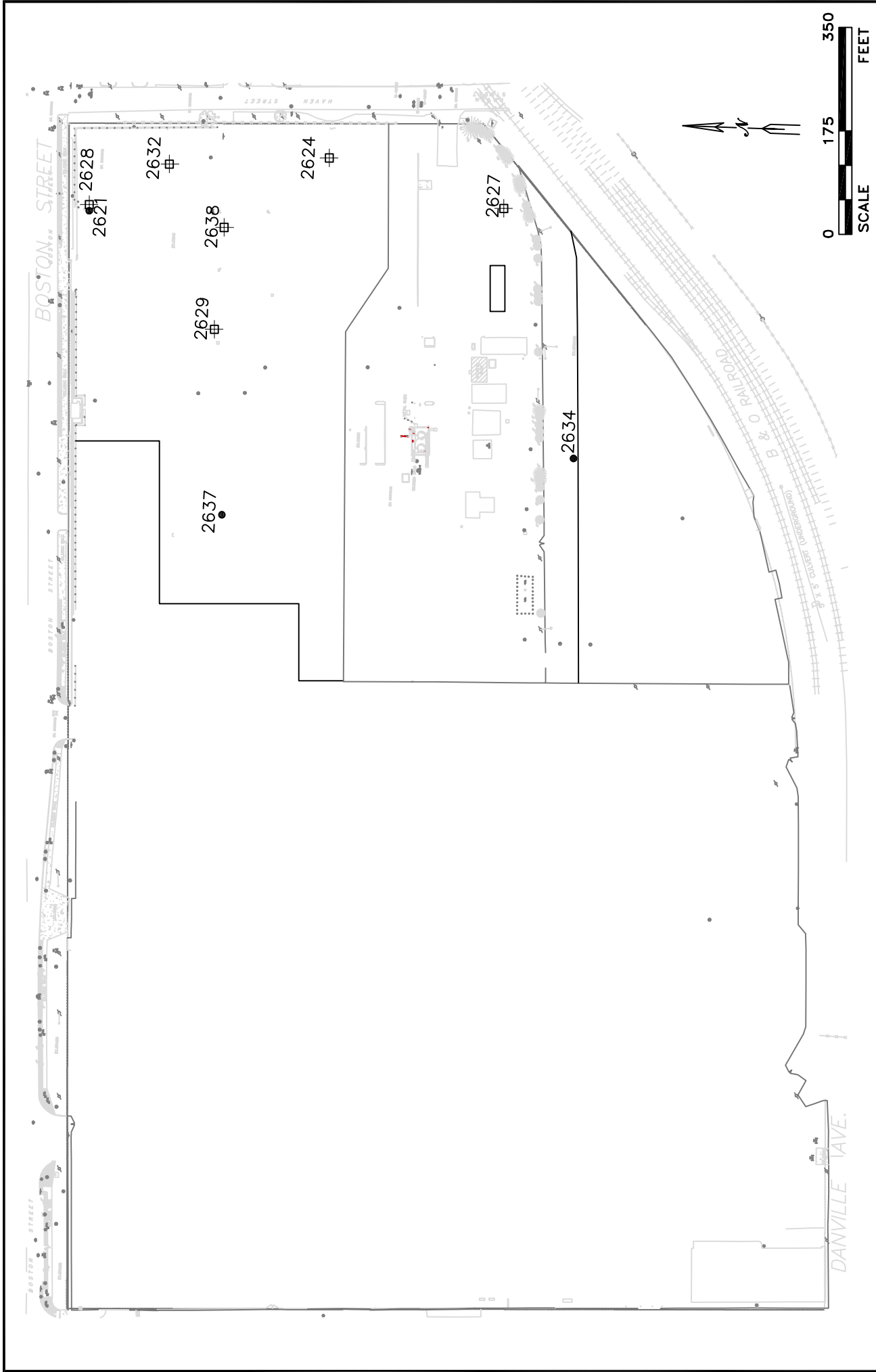
**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of all wells.
- Continued operation of the MTA/Toone Street Lower Zone recovery system.
- Recovery performance optimization.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Submission of request for abandonment of well 2621, 2634, and 2637 per existing Consent Decree LNAPL Recovery Optimization Procedures.
- Recovery testing of 2930.

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)
- Quarterly Summary Sheet – Lower Zone System Performance Optimization





**LEGEND**

- ⊕ LOWER ZONE LNAPL RECOVERY WELLS
  - LOWER ZONE MONITORING WELLS
  - ===== EXISTING R.R. TRACKS
- NOTE: WELL LOCATIONS ARE APPROXIMATE



**TETRA TECH**

**SITE MAP**

MAIN TERMINAL AREA LOWER ZONE  
BALTIMORE, MD 21224

FILE	2013MainTerminalAcreaMap	DATE	7-15-13
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# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### Main Terminal Area

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
2621	11/19/12	24.98	24.98	0.00	9.27	-20.59	54.83	0.0	-29.85
2624	06/12/13	38.33	38.33	0.00	-7.09	-18.18	49.42	0.0	-11.09
2627	06/19/13	27.63	27.63	0.00	0.13	-6.95	34.71	0.0	-7.08
2628	06/17/13	28.73	28.73	0.00	4.35	-18.25	51.33	0.0	-22.60
2629	06/13/13	46.14	13.18	32.96	-14.82	-7.97	39.29	0.7	6.85
2632	06/13/13	48.74	13.26	35.48	-17.38	-5.05	36.42	3.4	12.32
2634	11/09/12	22.15	22.15	0.00	8.35	-18.00	48.50	0.0	-26.35
2637	02/01/13	19.52	19.52	0.00	13.54	-4.48	37.54	0.0	-18.02
2638	06/13/13	48.87	12.34	36.53	-17.62	-9.58	40.83	3.3	8.04
2930	06/28/13	54.99	10.14	44.85	-24.72	-23.40	53.67	0.5*	1.32

\*\*- Consistent rate cannot be calculated due to difficulty in maintaining 1/2 GPH pumping rate  
 EST = Estimated Recovery rate

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
MTA LZ	2621	20-Jul-12	22.08	26.8	11.46	4.72
		20-Jul-12	25.78	25.78	8.47	0
		20-Aug-12	21.73	26.16	11.85	4.43
		20-Aug-12	25.32	25.32	8.93	0
		19-Sep-12	21.33	27.3	12.02	5.97
		19-Sep-12	26.65	26.65	7.6	0
		19-Oct-12	21.54	25.55	12.1	4.01
		19-Oct-12	25.21	25.21	9.04	0
		19-Nov-12	22.8	24.88	11.13	2.08
		19-Nov-12	24.98	24.98	9.27	0
	2624	02-Jul-12	15.34	45.99	13.38	30.65
		06-Aug-12	12.04	55.68	14.73	43.64
		07-Aug-12	13.97	53.25	13.46	39.28
		08-Aug-12	14.49	49.55	13.57	35.06
		09-Aug-12	14.67	47.21	13.77	32.54
		10-Aug-12	14.64	46.44	13.91	31.8
		13-Aug-12	16.33	42	13.14	25.67
		14-Aug-12	15.28	40.56	14.25	25.28
		15-Aug-12	15.15	41.25	14.26	26.1
		16-Aug-12	14.86	47.7	13.53	32.84
		17-Aug-12	16.88	38.07	13.26	21.19
		20-Aug-12	18.83	30.62	12.72	11.79
		21-Aug-12	19.45	28	12.59	8.55
		22-Aug-12	19.86	26.03	12.53	6.17
		23-Aug-12	20.34	24.47	12.36	4.13
		24-Aug-12	21.74	21.74	11.58	0
		24-Sep-12	11.92	55.51	14.86	43.59
		25-Sep-12	21.92	21.92	11.4	0
		24-Oct-12	11.9	55.21	14.92	43.31
		24-Oct-12	23.47	23.47	9.85	0
		27-Nov-12	11.82	55.32	14.98	43.5
		27-Nov-12	22.61	22.61	10.71	0
		27-Dec-12	12.33	55.2	14.56	42.87
		27-Dec-12	21.57	21.57	11.75	0
		28-Jan-13	22.78	22.78	10.54	0
		28-Jan-13	13.18	55.21	13.84	42.03
		27-Feb-13	12.57	57.76	13.97	45.19
		27-Feb-13	22.62	22.62	10.7	0
		29-Mar-13	12.97	55.05	14.04	42.08
		29-Mar-13	22.69	22.69	10.63	0
		29-Apr-13	12.64	54.98	14.33	42.34
		29-Apr-13	22.72	22.72	10.6	0
		12-Jun-13	12.88	54.81	14.15	41.93
		12-Jun-13	38.22	38.22	-4.9	0
	2627	11-Jul-12	9.34	53.58	11.78	44.24
		12-Jul-12	10.87	50.78	10.9	39.91
		16-Jul-12	11.4	44.23	11.43	32.83
		18-Jul-12	11.8	42.23	11.39	30.43
		19-Jul-12	12.13	40.6	11.36	28.47
		20-Jul-12	11.93	40.65	11.52	28.72
		23-Jul-12	11.8	41.23	11.54	29.43
		24-Jul-12	11.52	41.31	11.77	29.79
		25-Jul-12	12.1	40.08	11.46	27.98

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
MTA LZ	2627	26-Jul-12	12.27	39.07	11.47	26.8
		27-Jul-12	12.48	38	11.45	25.52
		01-Aug-12	12.24	37.58	11.72	25.34
		02-Aug-12	12.34	37.6	11.63	25.26
		03-Aug-12	12.32	37.9	11.6	25.58
		06-Aug-12	12.99	36.91	11.18	23.92
		07-Aug-12	12.59	37.11	11.49	24.52
		08-Aug-12	12.59	36.71	11.55	24.12
		09-Aug-12	12.99	35.1	11.45	22.11
		10-Aug-12	12.82	34.95	11.62	22.13
		13-Aug-12	13.34	34.25	11.28	20.91
		14-Aug-12	13.02	34.24	11.56	21.22
		15-Aug-12	13.22	33.8	11.45	20.58
		16-Aug-12	13.53	33.4	11.25	19.87
		17-Aug-12	13.32	32.75	11.52	19.43
		20-Aug-12	13.89	31.47	11.23	17.58
		21-Aug-12	14.17	30.31	11.17	16.14
		22-Aug-12	14.24	30.02	11.15	15.78
		23-Aug-12	14.57	29.41	10.96	14.84
		24-Aug-12	14.85	28.52	10.86	13.67
		27-Aug-12	15.38	25.59	10.84	10.21
		28-Aug-12	15.26	24.61	11.1	9.35
		30-Aug-12	16.08	22.92	10.65	6.84
		31-Aug-12	15.79	22.65	10.94	6.86
		04-Sep-12	14.11	28.72	11.46	14.61
		06-Sep-12	14.33	27.88	11.4	13.55
		07-Sep-12	14.49	27.43	11.33	12.94
		11-Sep-12	15.59	25.21	10.73	9.62
		12-Sep-12	15.6	24.83	10.77	9.23
		13-Sep-12	15.72	24.49	10.72	8.77
		17-Sep-12	16.16	21.81	10.75	5.65
		19-Sep-12	16	21.57	10.92	5.57
		21-Sep-12	15.98	21.3	10.98	5.32
		24-Sep-12	16.01	21.93	10.86	5.92
		24-Oct-12	8.7	53.43	12.35	44.73
		25-Oct-12	9.88	51	11.71	41.12
		01-Nov-12	8.68	53.5	12.36	44.82
		05-Nov-12	9.24	46.2	12.97	36.96
		08-Nov-12	10.48	44.18	12.22	33.7
		09-Nov-12	10.84	43.51	12.02	32.67
		12-Nov-12	11.16	42	11.97	30.84
		14-Nov-12	11.88	40.61	11.57	28.73
		16-Nov-12	11.78	39.57	11.81	27.79
		19-Nov-12	11.97	38.7	11.78	26.73
		27-Nov-12	11.45	40.39	11.97	28.94
		29-Nov-12	12	39.01	11.71	27.01
		04-Dec-12	11.94	38.41	11.85	26.47
		07-Dec-12	12.17	38.01	11.71	25.84
		11-Dec-12	12.44	36	11.78	23.56
		12-Dec-12	13.27	35.55	11.15	22.28
		19-Dec-12	13.64	31.64	11.42	18
		21-Dec-12	12.97	30.95	12.09	17.98
		27-Dec-12	13.87	30.09	11.46	16.22
		28-Dec-12	14.03	30.54	11.25	16.51
		02-Jan-13	16.36	23.45	10.33	7.09

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
MTA LZ	2627	04-Jan-13	16.58	21.3	10.47	4.72
		07-Jan-13	17.55	19.4	9.93	1.85
		08-Jan-13	16.9	20.03	10.39	3.13
		09-Jan-13	16.29	21.78	10.64	5.49
		10-Jan-13	16.54	22.14	10.38	5.6
		11-Jan-13	16.11	23.25	10.58	7.14
		14-Jan-13	15.9	21.39	11.03	5.49
		15-Jan-13	16.62	21.5	10.41	4.88
		18-Jan-13	17.31	17.31	10.45	0
		18-Feb-13	29.9	29.9	-2.14	0
		18-Feb-13	9.69	54.71	11.32	45.02
		20-Mar-13	8.25	53.54	12.71	45.29
		20-Mar-13	27.77	27.77	-0.01	0
		19-Apr-13	7.67	52.98	13.29	45.31
		19-Apr-13	30.36	30.36	-2.6	0
		20-May-13	8.39	53.68	12.57	45.29
		20-May-13	30.54	30.54	-2.78	0
		19-Jun-13	27.63	27.63	0.13	0
		19-Jun-13	8.14	53.58	12.8	45.44
	2628	05-Jul-12	14.05	54.21	13.01	40.16
		11-Jul-12	14.38	54.31	12.71	39.93
		12-Jul-12	16.58	49.71	11.53	33.13
		06-Aug-12	14.1	53.11	13.13	39.01
		07-Aug-12	16.59	47.51	11.86	30.92
		08-Aug-12	19.5	33.36	11.5	13.86
		09-Aug-12	21.11	27.03	11.09	5.92
		10-Aug-12	21.98	24.29	10.76	2.31
		13-Aug-12	23.51	23.51	9.57	0
		12-Sep-12	23.33	23.33	9.75	0
		12-Sep-12	19.98	29.8	11.63	9.82
		11-Oct-12	20.18	28.12	11.71	7.94
		12-Oct-12	23.09	23.37	9.95	0.28
		12-Nov-12	19.59	30.67	11.83	11.08
		12-Nov-12	29.31	29.31	3.77	0
		12-Dec-12	20.29	27.9	11.65	7.61
		12-Dec-12	28.02	28.02	5.06	0
		11-Jan-13	25.52	25.52	7.56	0
		11-Jan-13	22.8	26.67	9.7	3.87
		11-Feb-13	18.76	30.01	12.64	11.25
		11-Feb-13	31.02	31.02	2.06	0
		15-Mar-13	20.01	26.95	12.03	6.94
		15-Mar-13	27.02	27.02	6.06	0
		15-Apr-13	20	28.31	11.84	8.31
		15-Apr-13	28.11	28.11	4.97	0
		17-May-13	19.62	29.89	11.92	10.27
		17-May-13	27.33	27.33	5.75	0
		17-Jun-13	19.56	28.2	12.23	8.64
		17-Jun-13	28.73	28.73	4.35	0
	2629	12-Jul-12	13.77	47.57	12.49	33.8
		23-Jul-12	13.63	47.2	12.66	33.57
		15-Aug-12	13.65	45.27	12.93	31.62
		28-Aug-12	13.53	44.6	13.13	31.07
		13-Sep-12	13.83	45.33	12.77	31.5
		03-Oct-12	12.57	47.98	13.44	35.41

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness	
MTA LZ	2629	11-Oct-12	13.25	47.86	12.88	34.61	
		14-Nov-12	13.27	47.63	12.9	34.36	
		26-Nov-12	12.53	45.58	13.84	33.05	
		28-Dec-12	13.63	46.32	12.79	32.69	
		18-Jan-13	14.01	46.37	12.46	32.36	
		13-Feb-13	13.47	46.62	12.88	33.15	
		25-Feb-13	13.6	46.95	12.72	33.35	
		29-Mar-13	13.93	45.92	12.6	31.99	
		11-Apr-13	13.31	45.83	13.14	32.52	
		13-Jun-13	13.18	46.14	13.2	32.96	
		2632	12-Jul-12	14.78	48.14	11.58	33.36
			23-Jul-12	14.58	47.42	11.86	32.84
	15-Aug-12		14.18	47.65	12.16	33.47	
	28-Aug-12		13.96	47.89	12.31	33.93	
	13-Sep-12		14.37	47.68	12	33.31	
	03-Oct-12		12.92	52.85	12.45	39.93	
	11-Oct-12		14.18	48.24	12.07	34.06	
	26-Oct-12		14.33	47.56	12.05	33.23	
	19-Nov-12		14.27	47.63	12.09	33.36	
	26-Nov-12		14.1	47.53	12.25	33.43	
	28-Dec-12		14.57	46.61	11.99	32.04	
	18-Jan-13		14.68	47.35	11.78	32.67	
	13-Feb-13	13.93	47.21	12.44	33.28		
	25-Feb-13	14.56	47.33	11.89	32.77		
28-Mar-13	14.17	47.43	12.2	33.26			
10-Apr-13	13.83	47.36	12.5	33.53			
23-Apr-13	13.97	48.11	12.27	34.14			
13-Jun-13	13.26	48.74	12.78	35.48			
2634	10-Jul-12	12.54	56.84	8.61	44.3		
	10-Jul-12	23.08	23.08	7.42	0		
	11-Sep-12	12.15	57.93	8.69	45.78		
	11-Sep-12	22.76	22.76	7.74	0		
	10-Oct-12	11.61	56.64	9.39	45.03		
	10-Oct-12	21.4	21.4	9.1	0		
	09-Nov-12	11.85	56.68	9.19	44.83		
	09-Nov-12	22.15	22.15	8.35	0		
	2637	25-Jul-12	21.98	21.98	11.08	0	
		25-Jul-12	16.74	45.25	9.59	28.51	
24-Aug-12		19.42	19.42	13.64	0		
24-Aug-12		16.7	45.41	9.59	28.71		
24-Sep-12		16.44	45.3	9.81	28.86		
24-Sep-12		19.91	19.91	13.15	0		
24-Oct-12		20.9	20.9	12.16	0		
24-Oct-12		16.67	44.03	9.94	27.36		
29-Nov-12		16.68	45.51	9.58	28.83		
29-Nov-12		22.58	22.58	10.48	0		
02-Jan-13		16.54	46.03	9.56	29.49		
02-Jan-13		20.53	20.53	12.53	0		
01-Feb-13	16.42	45.51	9.78	29.09			
01-Feb-13	19.52	19.52	13.54	0			
2638	12-Jul-12	13.93	48.85	9.08	34.92		
	23-Jul-12	13.64	48.07	9.49	34.43		

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
MTA LZ	2638	15-Aug-12	13.22	48.43	9.72	35.21
		28-Aug-12	13.15	48.14	9.84	34.99
		13-Sep-12	13.35	48.6	9.58	35.25
		03-Oct-12	12.36	50.81	9.82	38.45
		11-Oct-12	13.27	48.62	9.64	35.35
		26-Oct-12	13.22	48.34	9.74	35.12
		19-Nov-12	13.21	48.47	9.72	35.26
		26-Nov-12	13.02	48.6	9.83	35.58
		28-Dec-12	13.32	47.95	9.76	34.63
		18-Jan-13	13.75	47.96	9.43	34.21
		13-Feb-13	12.92	48.52	9.93	35.6
		25-Feb-13	13.59	48.57	9.41	34.98
		28-Mar-13	13.13	48.56	9.76	35.43
		10-Apr-13	12.87	48.55	9.96	35.68
		23-Apr-13	13.09	48.53	9.8	35.44
		13-Jun-13	13.34	48.87	9.53	35.53
	2930	25-Jul-12	11.28	55.22	9.28	43.94
		30-Aug-12	10.93	55.13	9.57	44.2
		26-Sep-12	10.73	55.18	9.71	44.45
		24-Oct-12	10.94	55.05	9.58	44.11
		29-Nov-12	11.12	55.06	9.44	43.94
		07-Jan-13	12	54.82	8.83	42.82
		06-Feb-13	11.41	54.9	9.26	43.49
		07-Feb-13	11.59	54.95	9.11	43.36
		08-Feb-13	11.1	54.78	9.52	43.68
		11-Feb-13	11	54.8	9.6	43.8
		13-Feb-13	10.92	54.82	9.65	43.9
		14-Feb-13	11.2	54.71	9.46	43.51
		18-Feb-13	11.68	54.93	9.05	43.25
		20-Feb-13	11.25	55.17	9.32	43.92
		21-Feb-13	11.61	54.95	9.09	43.34
		22-Feb-13	11.78	54.95	8.96	43.17
		25-Feb-13	11.41	55.11	9.21	43.7
		26-Feb-13	11.5	54.71	9.24	43.21
		27-Feb-13	10.71	54.74	9.83	44.03
		28-Feb-13	10.74	54.75	9.81	44.01
		01-Mar-13	11.36	54.37	9.42	43.01
		04-Mar-13	11.64	54.02	9.29	42.38
		07-Mar-13	11.8	53.75	9.23	41.95
		08-Mar-13	11.6	54.56	9.19	42.96
		01-May-13	11.53	54.6	9.24	43.07
		02-May-13	11.73	53.29	9.39	41.56
		06-May-13	10.95	54.55	9.69	43.6
		07-May-13	10.67	54.83	9.84	44.16
		13-May-13	10.97	54.78	9.62	43.81
		14-May-13	11.07	54.65	9.58	43.58
		15-May-13	10.78	54.67	9.79	43.89
		16-May-13	10.72	54.63	9.85	43.91
		17-May-13	11.02	54.66	9.61	43.64
		20-May-13	10.96	54.7	9.65	43.74
		22-May-13	10.83	54.65	9.76	43.82
		23-May-13	10.76	54.6	9.83	43.84

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
MTA LZ	2930	24-May-13	10.75	54.62	9.83	43.87
		31-May-13	11.18	54.67	9.49	43.49
		04-Jun-13	11.23	54.63	9.46	43.4
		05-Jun-13	11.28	54.5	9.45	43.22
		07-Jun-13	10.67	54.75	9.86	44.08
		11-Jun-13	10.92	54.36	9.76	43.44
		13-Jun-13	10.48	54.49	10.07	44.01
		17-Jun-13	10.73	54.85	9.79	44.12
		18-Jun-13	10.6	54.72	9.92	44.12
		20-Jun-13	11	54.7	9.62	43.7
		24-Jun-13	10.7	54.61	9.87	43.91
		28-Jun-13	10.14	54.99	10.21	44.85
		07-Jan-13	12	54.82	8.83	42.82
		06-Feb-13	11.41	54.9	9.26	43.49
		07-Feb-13	11.59	54.95	9.11	43.36
		08-Feb-13	11.1	54.78	9.52	43.68
		11-Feb-13	11	54.8	9.6	43.8
		13-Feb-13	10.92	54.82	9.65	43.9
		14-Feb-13	11.2	54.71	9.46	43.51
		18-Feb-13	11.68	54.93	9.05	43.25
		20-Feb-13	11.25	55.17	9.32	43.92
		21-Feb-13	11.61	54.95	9.09	43.34



**Quarterly Report – Second Quarter 2013**  
**Toone Street Parcel – Lower Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

The Toone Street parcel is located north of Boston Street spanning from South Haven Street on the east to Conkling Street on the west. There are currently 26 lower zone wells located on the parcel. A Lower Zone LNAPL skimming system is in place in the Toone Street parcel, which includes eighteen LNAPL skimming pumps located at wells 2804, 2806, 2811, 2812, 2813, 2816, 2818, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832 and MW-6. Apparent LNAPL thickness and groundwater potentiometric elevation maps are presented in the appendices of this report. Total LNAPL recovery from the Toone Street parcel lower zone during this quarter was approximately 37,987 gallons. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

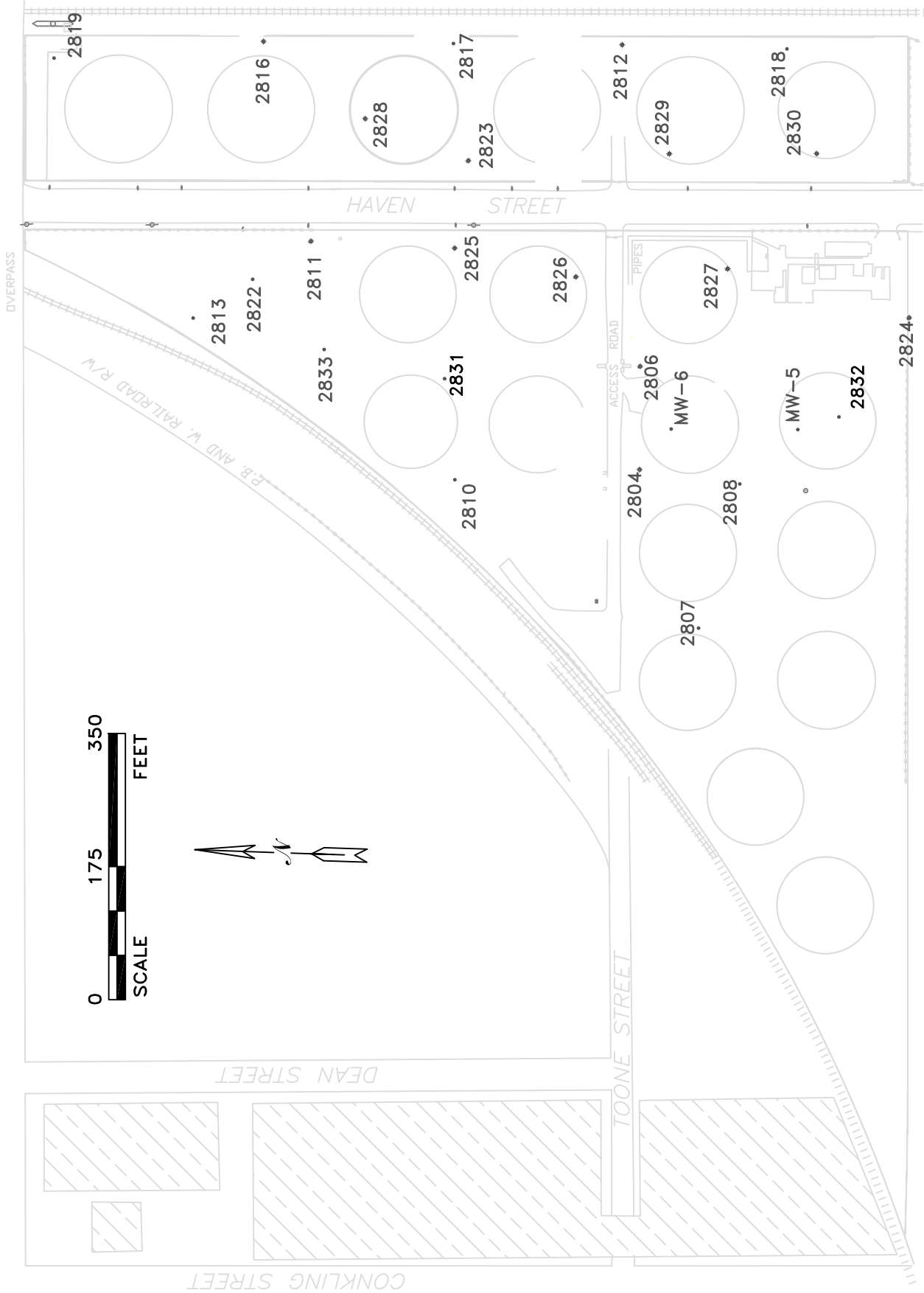
- Quarterly gauging of all wells.
- Continued operation and maintenance of the MTA/Toone Street Lower Zone recovery system.
- Recovery performance optimization.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Completion of MDE technical meeting per Consent Decree requirement.

**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of all wells.
- Continued operation and maintenance of the MTA/Toone Street Lower Zone recovery system.
- Recovery performance optimization.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Submission of request for abandonment of wells 2810, 2817 and 2819 per existing Consent Decree LNAPL Recovery Optimization Procedures.

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)
- Quarterly Summary Sheet – Lower Zone System Performance Optimization



**SITE MAP**  
 TOONE STREET AREA LOWER ZONE  
 BALTIMORE, MD 21224

**LEGEND**

- 2804# LZ RECOVERY WELLS
- 2822● LZ MONITORING WELLS
- ===== EXISTING R.R. TRACKS
- FORMER TANK FOOTPRINT

NOTE: WELL LOCATIONS ARE APPROXIMATE

# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### Toone Street Tank Field Area

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
2804	06/26/13	40.28	21.95	18.33	0.35	2.15	38.48	1.0	1.80
2806	06/26/13	45.03	20.80	24.23	-5.77	4.62	34.65	2.3	10.38
2807	06/28/13	30.32	18.89	11.43	7.60	1.31	36.60	0.0	-6.28
2808	06/27/13	22.91	22.91	0.00	15.40	-1.11	39.42	0.5*	-16.51
2811	06/26/13	46.62	19.14	27.48	-7.42	1.72	37.48	0.5*	9.14
2812	06/26/13	45.94	12.77	33.17	-9.25	4.54	32.16	0.6	13.78
2813	06/26/13	43.33	19.71	23.62	-2.33	-0.40	41.40	0.5*	1.93
2816	06/26/13	49.23	14.48	34.75	-13.28	2.22	33.73	0.5*	15.50
2817	01/20/12	20.09	20.02	0.07	15.03	-4.41	39.52	0.0	-19.43
2818	06/28/13	46.51	15.51	31.00	-11.81	-11.37	46.07	0.5*	0.44
2819	03/27/12	21.57	21.55	0.02	15.22	-29.72	66.50	0.0	-44.93
2822	04/04/12	26.70	24.38	2.32	13.41	-3.06	43.17	0.0	-16.47
2823	06/11/13	24.45	24.45	0.00	12.10	-6.39	42.94	0.0	-18.49
2824	06/27/13	28.36	28.36	0.00	11.93	-5.16	45.46	0.0	-17.10
2825	06/26/13	48.97	22.69	26.28	-7.37	0.16	41.44	0.5	7.53
2826	06/26/13	51.91	23.19	28.72	-10.08	-1.48	43.31	3.2	8.60
2827	06/26/13	54.17	23.87	30.30	-12.12	2.60	39.46	3.3	14.71

\*\*- Consistent rate cannot be calculated due to difficulty in maintaining 1/2 GPH pumping rate  
 EST = Estimated Recovery rate

# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### Toone Street Tank Field Area

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
2828	06/26/13	48.44	17.57	30.87	-10.73	-5.79	43.50	0.5	4.94
2829	06/26/13	52.13	19.21	32.92	-14.38	6.41	31.33	3.4	20.80
2830	06/26/13	52.14	18.80	33.34	-14.84	-1.05	38.35	2.0	13.79
2831	06/26/13	44.42	19.85	24.57	-5.61	3.10	35.71	0.7	8.71
2832	06/26/13	46.53	22.17	24.36	-6.38	2.80	37.36	8.0	9.18
MW-5 (TSTF)	06/19/13	21.68	18.05	3.63	-18.05	N/A	N/A	0.0	NA
MW-6 (TSTF)	06/26/13	29.46	22.31	7.15	11.12	N/A	N/A	1.7	NA

(\*) MW-5 (TSTF and MW-6 (TSTF) designated as Lower Zone Wells (June 1, 2011 MDE CAP approval letter)

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2804	12-Jul-12	23.29	40.46	14.76	17.17
		23-Jul-12	23.07	40.18	14.99	17.11
		13-Aug-12	22.88	40.13	15.16	17.25
		27-Aug-12	22.71	40.27	15.29	17.56
		12-Sep-12	22.84	40.45	15.15	17.61
		01-Oct-12	22.11	40.78	15.72	18.67
		10-Oct-12	22.34	40.22	15.61	17.88
		25-Oct-12	22.64	40.41	15.32	17.77
		14-Nov-12	22.8	40.52	15.17	17.72
		26-Nov-12	22.47	40.28	15.49	17.81
		12-Dec-12	22.88	40.21	15.15	17.33
		28-Dec-12	22.76	40.28	15.24	17.52
		10-Jan-13	22.96	40.64	15.02	17.68
		31-Jan-13	22.02	39.94	15.92	17.92
		11-Feb-13	22.38	40.32	15.56	17.94
		25-Feb-13	22.74	40.44	15.24	17.7
		28-Mar-13	22.4	40.44	15.52	18.04
		08-Apr-13	22.33	40.31	15.6	17.98
		25-Apr-13	22.4	40.29	15.55	17.89
		13-Jun-13	21.72	40.27	16.13	18.55
		26-Jun-13	21.95	40.28	15.93	18.33
	2806	12-Jul-12	21.74	45.79	13.92	24.05
		23-Jul-12	21.49	45.61	14.16	24.12
		13-Aug-12	21.42	45.5	14.23	24.08
		27-Aug-12	21.25	45.45	14.38	24.2
		12-Sep-12	21.45	45.42	14.22	23.97
		01-Oct-12	20.75	45.77	14.76	25.02
		10-Oct-12	20.98	45.42	14.62	24.44
		25-Oct-12	21.31	45.31	14.35	24
		14-Nov-12	21.46	45.49	14.2	24.03
		26-Nov-12	21.11	45.38	14.51	24.27
		12-Dec-12	21.5	45.41	14.18	23.91
		28-Dec-12	21.36	45.32	14.31	23.96
		10-Jan-13	21.9	45.31	13.85	23.41
		31-Jan-13	20.81	45.17	14.8	24.36
		11-Feb-13	21.12	45.3	14.52	24.18
		25-Feb-13	21.6	45.31	14.11	23.71
		28-Mar-13	21.33	45.34	14.33	24.01
		08-Apr-13	21.08	45.07	14.59	23.99
		25-Apr-13	21.22	44.98	14.48	23.76
		13-Jun-13	20.47	45.17	15.09	24.7
		26-Jun-13	20.8	45.03	14.83	24.23
	2807	25-Jul-12	19.46	32.8	16.46	13.34
		23-Aug-12	19.51	32.68	16.43	13.17
		25-Sep-12	19.21	32.54	16.71	13.33
		24-Oct-12	19.13	32.71	16.75	13.58
		29-Nov-12	19.48	32.37	16.5	12.89
		07-Jan-13	19.77	32.38	16.25	12.61
		21-Feb-13	19.84	32	16.25	12.16
		22-Feb-13	20.25	31.35	16	11.1
		25-Feb-13	20.13	31.11	16.14	10.98
		26-Feb-13	20.67	28.57	16.06	7.9
		27-Feb-13	19.81	27.94	16.89	8.13

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2807	28-Feb-13	19.53	30.54	16.73	11.01
		01-Mar-13	20.17	28.25	16.53	8.08
		04-Mar-13	20.16	30.06	16.27	9.9
		07-Mar-13	20.48	28.71	16.2	8.23
		08-Mar-13	20.71	28.01	16.11	7.3
		11-Mar-13	20.72	27.2	16.22	6.48
		15-Mar-13	20.53	26.44	16.5	5.91
		18-Mar-13	20.87	26.4	16.22	5.53
		21-Mar-13	20.18	27.03	16.71	6.85
		22-Mar-13	20.41	26.97	16.52	6.56
		26-Mar-13	19.53	30.54	16.73	11.01
		27-Mar-13	19.8	30.43	16.52	10.63
		28-Mar-13	20.44	28.22	16.31	7.78
		29-Mar-13	20.13	30.01	16.3	9.88
		01-May-13	19.97	21.23	17.76	1.26
		02-May-13	20.65	28.43	16.1	7.78
		06-May-13	20.35	27.25	16.53	6.9
		07-May-13	20.2	27.2	16.67	7
		09-May-13	20.1	27.15	16.76	7.05
		10-May-13	20.12	27.23	16.73	7.11
		13-May-13	19.55	30.73	16.69	11.18
		22-May-13	19.33	33.21	16.5	13.88
		23-May-13	19.84	29.8	16.58	9.96
		24-May-13	19.87	28.55	16.74	8.68
		28-May-13	20.86	27.85	16.01	6.99
		31-May-13	20.3	27.75	16.5	7.45
		04-Jun-13	20.4	27.41	16.46	7.01
		05-Jun-13	20.34	27.91	16.44	7.57
		06-Jun-13	20.57	25.88	16.55	5.31
		11-Jun-13	18.93	30.47	17.26	11.54
		13-Jun-13	18.97	30.72	17.18	11.75
		17-Jun-13	21.17	22.7	16.52	1.53
		18-Jun-13	21.3	21.81	16.54	0.51
		20-Jun-13	21.44	22.41	16.33	0.97
		24-Jun-13	21.44	22	16.39	0.56
		28-Jun-13	18.89	30.32	17.31	11.43
	2808	23-Aug-12	20.01	27.61	17.16	7.6
		21-Feb-13	20.34	33.56	15.98	13.22
		22-Feb-13	20.3	33.17	16.08	12.87
		25-Feb-13	21.61	21.61	16.7	0
		27-Mar-13	20	32.18	16.48	12.18
		27-Mar-13	24.73	24.73	13.58	0
		26-Apr-13	20.1	33.01	16.27	12.91
		26-Apr-13	25.01	25.01	13.3	0
		28-May-13	28.41	28.41	9.9	0
		28-May-13	19.91	32.77	16.47	12.86
		27-Jun-13	22.91	22.91	15.4	0
		27-Jun-13	19.58	31.94	16.87	12.36
	2811	12-Jul-12	20.48	46.77	14.78	26.29
		23-Jul-12	19.95	47.52	15.12	27.57
		13-Aug-12	21.97	39.3	14.63	17.33
		27-Aug-12	20.43	44.36	15.18	23.93
		12-Sep-12	20.43	45.18	15.06	24.75
		01-Oct-12	19.28	47.56	15.68	28.28
		10-Oct-12	19.53	46.74	15.59	27.21

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2811	25-Oct-12	19.97	46.14	15.31	26.17
		14-Nov-12	20.13	46.05	15.18	25.92
		26-Nov-12	19.77	46.04	15.49	26.27
		12-Dec-12	20.24	45.67	15.15	25.43
		28-Dec-12	20.11	45.64	15.26	25.53
		10-Jan-13	20.4	45.98	14.97	25.58
		31-Jan-13	19.41	45.9	15.82	26.49
		11-Feb-13	19.84	45.63	15.49	25.79
		25-Feb-13	19.94	46.65	15.26	26.71
		28-Mar-13	19.87	45.57	15.48	25.7
		08-Apr-13	19.67	45.54	15.65	25.87
		25-Apr-13	19.84	45.42	15.53	25.58
		13-Jun-13	18.78	47.13	16.17	28.35
		26-Jun-13	19.14	46.62	16.13	27.48
	2812	12-Jul-12	14.14	46.86	17.65	32.72
		23-Jul-12	13.93	46.52	17.87	32.59
		13-Aug-12	14.03	43.32	18.27	29.29
		27-Aug-12	14.57	38.11	18.59	23.54
		07-Sep-12	15.66	24.13	19.76	8.47
		12-Sep-12	15.29	32.12	18.88	16.83
		17-Sep-12	13.99	40.02	18.8	26.03
		01-Oct-12	12.64	45.03	19.19	32.39
		10-Oct-12	12.83	46.96	18.74	34.13
		25-Oct-12	13.56	45.13	18.4	31.57
		15-Nov-12	13.53	45.74	18.33	32.21
		26-Nov-12	13.12	45.99	18.64	32.87
		13-Dec-12	13.65	45.96	18.2	32.31
		26-Dec-12	13.06	47.22	18.51	34.16
		14-Jan-13	13.82	43.98	18.35	30.16
		30-Jan-13	12.94	45.28	18.9	32.34
		12-Feb-13	13.61	45.18	18.35	31.57
		25-Feb-13	14.01	43.95	18.19	29.94
		27-Mar-13	13.46	44.72	18.54	31.26
		08-Apr-13	13.39	44.81	18.59	31.42
		25-Apr-13	13.48	44.82	18.51	31.34
		12-Jun-13	12.93	47.18	18.63	34.25
		26-Jun-13	12.77	45.94	18.95	33.17
	2813	25-Jul-12	21.64	45.73	17.49	24.09
		23-Aug-12	21.52	45.8	17.58	24.28
		25-Sep-12	21.16	45.95	17.86	24.79
		04-Oct-12	19.95	44.76	19.07	24.81
		05-Oct-12	20.12	44.1	19.03	23.98
		08-Oct-12	19.98	44.26	19.12	24.28
		09-Oct-12	20.16	44.12	18.99	23.96
		10-Oct-12	19.94	44.09	19.18	24.15
		12-Oct-12	20.23	44.01	18.95	23.78
		25-Oct-12	20.41	43.66	18.84	23.25
		14-Nov-12	20.55	43.5	18.75	22.95
		26-Nov-12	20.13	43.61	19.09	23.48
		12-Dec-12	20.36	44	18.84	23.64
		28-Dec-12	20.44	43.53	18.84	23.09
		10-Jan-13	20.82	43.43	18.53	22.61
		31-Jan-13	19.88	43.41	19.33	23.53
		11-Feb-13	20.26	43.26	19.03	23
		25-Feb-13	20.63	43.24	18.72	22.61

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2813	28-Mar-13	20.52	42.74	18.89	22.22
		08-Apr-13	20.27	42.63	19.12	22.36
		25-Apr-13	20.47	42.53	18.96	22.06
		13-Jun-13	19.47	43.33	19.69	23.86
		26-Jun-13	19.71	43.33	19.49	23.62
	2816	12-Jul-12	16.64	46.66	14.8	30.02
		23-Jul-12	16.31	46.68	15.08	30.37
		13-Aug-12	15.91	46.83	15.4	30.92
		27-Aug-12	15.79	46.54	15.54	30.75
		12-Sep-12	16.03	46.51	15.34	30.48
		01-Oct-12	15.04	48.62	15.87	33.58
		10-Oct-12	15.13	47.93	15.9	32.8
		25-Oct-12	15.67	47.33	15.53	31.66
		15-Nov-12	15.63	47.61	15.52	31.98
		26-Nov-12	15.33	47.97	15.72	32.64
		13-Dec-12	15.91	47.02	15.37	31.11
		26-Dec-12	15.58	47.73	15.54	32.15
		14-Jan-13	15.44	47.92	15.63	32.48
		30-Jan-13	14.72	48.9	16.1	34.18
		12-Feb-13	15.23	48.18	15.77	32.95
		25-Feb-13	15.49	48.57	15.49	33.08
		27-Mar-13	15.18	48.23	15.81	33.05
		08-Apr-13	15.01	48.72	15.88	33.71
		25-Apr-13	15.27	48.05	15.76	32.78
		12-Jun-13	14.81	48.7	16.05	33.89
		26-Jun-13	14.48	49.23	16.25	34.75
	2818	25-Jul-12	17.46	48.51	13.66	31.05
		23-Aug-12	17.37	48.57	13.73	31.2
		25-Sep-12	15.45	47.06	15.58	31.61
		04-Oct-12	16.33	46.64	14.9	30.31
		05-Oct-12	22.96	33.33	11.26	10.37
		08-Oct-12	22.42	22.56	13.33	0.14
		19-Oct-12	17.1	39.02	15.39	21.92
		29-Nov-12	16.49	47.25	14.67	30.76
		07-Jan-13	16.78	47.47	14.39	30.69
		20-Feb-13	16.42	47.46	14.7	31.04
		25-Feb-13	17.89	40.94	14.43	23.05
		29-Mar-13	16.65	46.65	14.63	30
		26-Apr-13	16.63	46.69	14.64	30.06
		29-Apr-13	20.17	34.42	13.47	14.25
		29-May-13	15.92	45.89	15.36	29.97
		28-Jun-13	15.51	46.51	15.62	31
	2822	16-Oct-12	20.64	28.92	18.23	8.28
		16-Oct-12	24.01	24.01	16.1	0
	2823	18-Jul-12	17.47	51.56	13.96	34.09
		19-Jul-12	18.48	48.24	13.6	29.76
		23-Jul-12	19.84	41.23	13.5	21.39
		20-Aug-12	17.16	51.55	14.23	34.39
		21-Aug-12	18.39	47.42	13.8	29.03
		22-Aug-12	18.8	45.93	13.68	27.13
		23-Aug-12	19.12	44.62	13.6	25.5
		24-Aug-12	19.48	43.23	13.51	23.75
		28-Aug-12	20.6	36.92	13.5	16.32



Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2823	08-Oct-12	17.33	51.77	14.05	34.44
		09-Oct-12	18.66	45.75	13.82	27.09
		17-Oct-12	22	31.62	13.11	9.62
		18-Dec-12	16.51	51.59	14.78	35.08
		19-Dec-12	18.52	45.49	13.98	26.97
		31-Dec-12	17.58	51.33	13.91	33.75
		04-Jan-13	19.18	43.11	13.78	23.93
		07-Jan-13	19.09	46.29	13.38	27.2
		08-Jan-13	20.45	40.03	13.16	19.58
		09-Jan-13	20.88	37.88	13.12	17
		10-Jan-13	21.19	37.46	12.92	16.27
		11-Jan-13	19.4	44.69	13.35	25.29
		14-Jan-13	22.69	28.84	12.94	6.15
		15-Jan-13	22.63	30.68	12.71	8.05
		18-Jan-13	19.8	41.82	13.45	22.02
		21-Jan-13	20.44	39.26	13.29	18.82
		22-Jan-13	19.71	42.63	13.4	22.92
		23-Jan-13	18.58	48.02	13.55	29.44
		25-Jan-13	19.29	45.45	13.33	26.16
		28-Jan-13	20.7	39.14	13.08	18.44
		29-Jan-13	21.98	32.6	12.98	10.62
		30-Jan-13	21.88	31.62	13.21	9.74
		01-Feb-13	21.39	34.71	13.16	13.32
		04-Feb-13	20.05	40.76	13.39	20.71
		05-Feb-13	21.74	33.5	13.04	11.76
		06-Feb-13	22.59	30.05	12.84	7.46
		07-Feb-13	22.73	32.03	12.42	9.3
		08-Feb-13	23.28	26.24	12.82	2.96
		11-Feb-13	20.82	36.35	13.4	15.53
		13-Feb-13	20.17	39.18	13.53	19.01
		14-Feb-13	20.73	37.11	13.36	16.38
		15-Feb-13	20.87	36.55	13.33	15.68
		18-Feb-13	21.3	36.81	12.92	15.51
		19-Feb-13	20.7	38.17	13.23	17.47
		20-Feb-13	21.04	36.56	13.18	15.52
		21-Feb-13	19.83	41.79	13.42	21.96
		22-Feb-13	21.25	38.06	12.78	16.81
		25-Feb-13	21.11	36.84	13.08	15.73
		26-Feb-13	20.89	37.44	13.18	16.55
		27-Feb-13	20.4	36.88	13.2	16.48
		28-Feb-13	20.53	36.19	13.67	15.66
		01-Mar-13	20.72	35.87	13.56	15.15
		04-Mar-13	20.47	37.81	13.48	17.34
		07-Mar-13	20.69	37.71	13.31	17.02
		08-Mar-13	20.61	37.96	13.34	17.35
		11-Mar-13	21.2	34.82	13.31	13.62
		15-Mar-13	23.5	24.85	12.85	1.35
		18-Mar-13	24.2	24.2	12.35	0
		19-Apr-13	24.47	24.47	12.08	0
		19-Apr-13	17.16	50.67	14.36	33.51
		20-May-13	17.9	51.01	13.68	33.11
		11-Jun-13	17.49	51.08	14.02	33.59
		11-Jun-13	24.45	24.45	12.1	0

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2824	12-Jul-12	23.72	52.99	12.18	29.27
		16-Jul-12	23.27	53.16	12.54	29.89
		16-Aug-12	22.25	56.06	12.97	33.81
		17-Aug-12	22.82	53.53	12.87	30.71
		20-Aug-12	22.63	54.24	12.92	31.61
		21-Aug-12	22.77	54.32	12.79	31.55
		22-Aug-12	23.38	52.49	12.55	29.11
		23-Aug-12	23.62	51.27	12.53	27.65
		24-Aug-12	24.25	48.84	12.36	24.59
		27-Aug-12	26.24	40.46	11.92	14.22
		28-Aug-12	26.13	39.65	12.14	13.52
		10-Oct-12	22.02	55.96	13.18	33.94
		11-Oct-12	23.32	52.03	12.67	28.71
		12-Oct-12	23.64	50.45	12.63	26.81
		16-Oct-12	23.11	51.12	12.98	28.01
		18-Oct-12	23.38	50.34	12.87	26.96
		19-Oct-12	23.23	50.39	12.99	27.16
		22-Oct-12	23.63	50.68	12.61	27.05
		25-Oct-12	23.63	50.79	12.59	27.16
		26-Nov-12	22.04	55.96	13.17	33.92
		27-Nov-12	22.66	52.84	13.11	30.18
		28-Nov-12	23.27	51.83	12.74	28.56
		29-Nov-12	23.46	51.42	12.64	27.96
		30-Nov-12	23.52	51.04	12.65	27.52
		03-Dec-12	23.28	50.78	12.89	27.5
		04-Dec-12	23.2	51.07	12.91	27.87
		12-Dec-12	26.2	41.84	11.75	15.64
		11-Jan-13	22.65	55.61	12.7	32.96
		14-Jan-13	23.54	50.52	12.71	26.98
		15-Jan-13	24.05	49.78	12.38	25.73
		18-Jan-13	24.81	46.9	12.17	22.09
		21-Jan-13	25.15	44.99	12.17	19.84
		18-Feb-13	22.73	55.43	12.66	32.7
		19-Feb-13	22.5	55.27	12.88	32.77
		20-Feb-13	22.42	55.65	12.89	33.23
		26-Feb-13	22.55	55.61	12.79	33.06
		27-Feb-13	22.47	53.9	13.11	31.43
		28-Feb-13	23.1	50.93	13.02	27.83
		01-Mar-13	24.16	47.21	12.68	23.05
		04-Mar-13	27.28	36.72	11.6	9.44
		07-Mar-13	24.58	47.54	12.27	22.96
		08-Mar-13	25.1	44.98	12.21	19.88
		11-Mar-13	24.16	47.8	12.59	23.64
		15-Mar-13	27.3	35.53	11.76	8.23
		18-Mar-13	26.95	37.66	11.74	10.71
		21-Mar-13	25.11	43.14	12.48	18.03
		22-Mar-13	28.13	32.55	11.5	4.42
		26-Mar-13	28.64	28.64	11.65	0
		25-Apr-13	22.49	54.5	13	32.01
		25-Apr-13	31.3	31.3	8.99	0
		28-May-13	22.76	55.55	12.62	32.79
		28-May-13	30.41	30.41	9.88	0
		27-Jun-13	22.42	55.24	12.95	32.82

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2824	27-Jun-13	28.36	28.36	11.93	0
	2825	12-Jul-12	23.06	52.81	14.08	29.75
		23-Jul-12	22.8	52.75	14.31	29.95
		13-Aug-12	27.37	33.96	13.24	6.59
		16-Aug-12	23.46	48.78	14.34	25.32
		27-Aug-12	23.61	47.86	14.35	24.25
		12-Sep-12	27.04	35.45	13.3	8.41
		17-Sep-12	24.38	44.54	14.2	20.16
		01-Oct-12	22.08	52.77	14.92	30.69
		10-Oct-12	22.86	49.82	14.7	26.96
		25-Oct-12	23.07	50.14	14.47	27.07
		14-Nov-12	23.66	48.38	14.23	24.72
		26-Nov-12	23.12	49.11	14.58	25.99
		12-Dec-12	23.61	48.59	14.24	24.98
		28-Dec-12	23.3	49.32	14.4	26.02
		10-Jan-13	23.37	50.58	14.15	27.21
		31-Jan-13	22.53	49.83	14.98	27.3
		11-Feb-13	22.89	50.01	14.64	27.12
		25-Feb-13	22.92	51.4	14.41	28.48
		28-Mar-13	23.3	48.34	14.55	25.04
		08-Apr-13	22.98	48.74	14.76	25.76
		25-Apr-13	23.25	48.27	14.6	25.02
		13-Jun-13	22.41	49.12	15.18	26.71
		26-Jun-13	22.69	48.97	14.97	26.28
	2826	12-Jul-12	24.5	51.33	11	26.83
		23-Jul-12	24.16	51.43	11.24	27.27
		13-Aug-12	24.07	51.38	11.32	27.31
		27-Aug-12	23.86	51.38	11.48	27.52
		12-Sep-12	24.08	51.29	11.33	27.21
		01-Oct-12	22.52	54.58	11.75	32.06
		10-Oct-12	23.46	51.81	11.68	28.35
		25-Oct-12	23.64	52.54	11.37	28.9
		14-Nov-12	23.75	52.72	11.25	28.97
		26-Nov-12	23.45	52.54	11.52	29.09
		12-Dec-12	23.99	52.07	11.22	28.08
		28-Dec-12	23.77	52.46	11.29	28.69
		10-Jan-13	24.08	52.56	11.03	28.48
		31-Jan-13	22.61	54.53	11.69	31.92
		11-Feb-13	23.4	52.36	11.6	28.96
		25-Feb-13	23.91	52.33	11.22	28.42
		28-Mar-13	23.42	54.41	11.1	30.99
		08-Apr-13	23.36	52.13	11.68	28.77
		25-Apr-13	23.63	51.54	11.62	27.91
		13-Jun-13	22.83	52.22	12.07	29.39
		26-Jun-13	23.19	51.91	11.87	28.72
	2827	12-Jul-12	25.34	53.17	10.15	27.83
		23-Jul-12	25.06	53.06	10.39	28
		13-Aug-12	25.07	52.44	10.52	27.37
		27-Aug-12	24.92	52.14	10.71	27.22
		12-Sep-12	25.14	52.06	10.56	26.92
		01-Oct-12	23.76	55.83	10.73	32.07
		10-Oct-12	24.23	53.86	10.83	29.63
		25-Oct-12	24.58	53.37	10.68	28.79

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2827	14-Nov-12	24.83	53.37	10.49	28.54
		26-Nov-12	24.49	53.44	10.73	28.95
		12-Dec-12	24.99	53.04	10.44	28.05
		28-Dec-12	24.72	53.34	10.58	28.62
		10-Jan-13	25.22	53.09	10.26	27.87
		31-Jan-13	24.13	53.12	11.08	28.99
		11-Feb-13	24.45	53.09	10.84	28.64
		25-Feb-13	24.97	53.14	10.44	28.17
		28-Mar-13	24.38	53.43	10.82	29.05
		08-Apr-13	24.35	53.18	10.9	28.83
		25-Apr-13	24.48	53.07	10.83	28.59
		13-Jun-13	23.59	54.52	11.16	30.93
		26-Jun-13	23.87	54.17	11.03	30.3
	2828	12-Jul-12	18.84	49.01	11.75	30.17
		23-Jul-12	18.62	48.69	12	30.07
		13-Aug-12	18.65	47.54	12.24	28.89
		27-Aug-12	18.51	47.22	12.43	28.71
		12-Sep-12	18.44	48.4	12.2	29.96
		01-Oct-12	17.4	50.51	12.5	33.11
		10-Oct-12	17.33	50.54	12.55	33.21
		25-Oct-12	18.02	49.25	12.32	31.23
		15-Nov-12	18.5	47.57	12.35	29.07
		26-Nov-12	17.98	48.88	12.44	30.9
		13-Dec-12	18.74	47.42	12.2	28.68
		26-Dec-12	18.24	48.33	12.37	30.09
		14-Jan-13	18.29	47.92	12.43	29.63
		30-Jan-13	17.37	49.47	12.77	32.1
		12-Feb-13	18.23	47.58	12.56	29.35
		25-Feb-13	18.29	48.88	12.2	30.59
		27-Mar-13	18.08	47.87	12.6	29.79
		08-Apr-13	17.48	50.06	12.54	32.58
		25-Apr-13	18.38	46.97	12.59	28.59
		12-Jun-13	17.71	48.59	12.72	30.88
		26-Jun-13	17.57	48.44	12.86	30.87
	2829	12-Jul-12	21.25	49.07	9.93	27.82
		23-Jul-12	21.3	47.21	10.33	25.91
		13-Aug-12	21.72	44.54	10.64	22.82
		27-Aug-12	22.04	42.42	10.9	20.38
		12-Sep-12	20.96	47.98	10.41	27.02
		01-Oct-12	18.76	55.21	10.38	36.45
		10-Oct-12	19.46	52.27	10.54	32.81
		25-Oct-12	20.12	51.04	10.33	30.92
		15-Nov-12	20.17	50.73	10.36	30.56
		26-Nov-12	19.84	51.41	10.46	31.57
		13-Dec-12	20.18	52.13	10.03	31.95
		26-Dec-12	19.68	52.63	10.29	32.95
		14-Jan-13	19.7	52.44	10.32	32.74
		30-Jan-13	19.23	52.48	10.67	33.25
		12-Feb-13	19.65	52.12	10.43	32.47
		25-Feb-13	20.08	51.78	10.18	31.7
		27-Mar-13	19.01	54.52	10.36	35.51
		08-Apr-13	19.23	53.34	10.47	34.11
		25-Apr-13	20.08	49.86	10.64	29.78

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2829	26-Jun-13	19.21	52.13	10.77	32.92
	2830	12-Jul-12	20.71	49.5	9.8	28.79
		23-Jul-12	20.44	49.4	10.03	28.96
		13-Aug-12	20.26	49.13	10.23	28.87
		27-Aug-12	20.07	49.21	10.35	29.14
		12-Sep-12	20.21	49.6	10.15	29.39
		01-Oct-12	18.74	53.49	10.36	34.75
		25-Oct-12	19.56	51.66	10.17	32.1
		15-Nov-12	19.56	51.76	10.14	32.2
		26-Nov-12	19.33	51.83	10.3	32.5
		13-Dec-12	19.81	51.6	9.99	31.79
		26-Dec-12	19.47	51.66	10.23	32.19
		14-Jan-13	19.53	51.52	10.22	31.99
		30-Jan-13	18.93	51.84	10.6	32.91
		12-Feb-13	19.33	51.55	10.37	32.22
		25-Feb-13	19.72	51.61	10.05	31.89
		27-Mar-13	19.3	51.41	10.42	32.11
		08-Apr-13	19.2	51.74	10.42	32.54
		25-Apr-13	19.33	51.55	10.37	32.22
		12-Jun-13	18.97	51.98	10.54	33.01
		26-Jun-13	18.8	52.14	10.63	33.34
	2831	25-Jul-12	19.59	44.91	13.6	25.32
		23-Aug-12	19.47	44.77	13.73	25.3
		25-Sep-12	19.16	44.75	13.97	25.59
		04-Oct-12	20.11	45.75	13.01	25.64
		05-Oct-12	20.29	45.05	13.04	24.76
		08-Oct-12	20.57	44.74	12.9	24.17
		09-Oct-12	20.36	44.7	13.07	24.34
		10-Oct-12	20.19	44.71	13.19	24.52
		12-Oct-12	20.44	44.65	13.02	24.21
		25-Oct-12	20.62	44.38	12.94	23.76
		14-Nov-12	20.79	44.17	12.86	23.38
		26-Nov-12	20.45	44.06	13.15	23.61
		12-Dec-12	20.97	43.52	12.88	22.55
		28-Dec-12	23.35	34.11	13.28	10.76
		10-Jan-13	25.76	26.24	13.3	0.48
		28-Jan-13	20.63	45.15	12.75	24.52
		31-Jan-13	19.91	44.68	13.41	24.77
		11-Feb-13	20.37	44.36	13.14	23.99
		25-Feb-13	20.76	44.38	12.84	23.62
		28-Mar-13	20.45	44.33	13.08	23.88
		08-Apr-13	20.17	44.36	13.29	24.19
		25-Apr-13	20.43	44.2	13.13	23.77
		13-Jun-13	19.61	44.56	13.67	24.95
		26-Jun-13	19.85	44.42	13.52	24.57
	2832	23-Aug-12	22.18	48.46	12.15	26.28
		25-Sep-12	21.91	48.36	12.38	26.45
		04-Oct-12	22.03	48.53	12.25	26.5
		05-Oct-12	22.18	48.26	12.2	26.08
		09-Oct-12	22.49	47.45	12.15	24.96
		10-Oct-12	22.32	47.43	12.28	25.11
		12-Oct-12	22.55	47.49	12.09	24.94
		25-Oct-12	22.66	47.41	12.03	24.75

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Toone LZ	2832	14-Nov-12	22.84	47.33	11.91	24.49
		26-Nov-12	22.92	47.15	11.89	24.23
		12-Dec-12	22.78	47.32	11.96	24.54
		28-Dec-12	22.67	47.13	12.09	24.46
		10-Jan-13	23.28	47.16	11.61	23.88
		31-Jan-13	22.03	47.98	12.38	25.95
		11-Feb-13	22.51	46.97	12.25	24.46
		25-Feb-13	23.01	46.83	11.9	23.82
		28-Mar-13	22.71	46.58	12.19	23.87
		08-Apr-13	22.53	46.56	12.33	24.03
		25-Apr-13	22.43	46.58	12.4	24.15
		13-Jun-13	21.86	46.49	12.86	24.63
		26-Jun-13	22.17	46.53	12.61	24.36
	2833	03-Jul-12	23.12	34.15		11.03
		25-Jul-12	20.14	44.8		24.66
		07-Jan-13	20.08	44.84		24.76
		14-Mar-13	20.02	44.89		24.87
		02-May-13	24.48	27.31		2.83
		02-May-13	25.22	25.24		0.02
		02-May-13	19.81	44.75		24.94
		03-May-13	20.21	43		22.79
		06-May-13	19.44	44.8		25.36
		18-Jun-13	19.26	44.84		25.58
	MW-5	23-Aug-12	17.78	21.37	22.84	3.59
		25-Sep-12	17.76	21.39	22.85	3.63
		24-Oct-12	17.9	21.46	22.72	3.56
		29-Nov-12	18.26	21.62	22.4	3.36
		07-Jan-13	18.48	21.71	22.2	3.23
		22-Mar-13	18.44	21.46	22.28	3.02
		19-Jun-13	18.05	21.68	22.56	3.63
	MW-6	25-Jul-12	23.09	29.8	17.16	6.71
		23-Aug-12	22.98	29.79	17.25	6.81
		25-Sep-12	22.72	29.83	17.46	7.11
		04-Oct-12	22.23	29.33	17.95	7.1
		05-Oct-12	22.43	29.46	17.76	7.03
		09-Oct-12	22.54	29.46	17.67	6.92
		10-Oct-12	22.46	29.45	17.74	6.99
		12-Oct-12	22.57	29.46	17.64	6.89
		25-Oct-12	22.6	29.44	17.62	6.84
		14-Nov-12	22.73	29.42	17.52	6.69
		26-Nov-12	22.47	29.43	17.73	6.96
		12-Dec-12	22.66	29.38	17.58	6.72
		28-Dec-12	22.59	29.47	17.63	6.88
		10-Jan-13	23.03	29.48	17.26	6.45
		31-Jan-13	22.64	29.48	17.58	6.84
		11-Feb-13	22.83	29.47	17.43	6.64
		25-Feb-13	22.92	29.46	17.36	6.54
		28-Mar-13	22.53	29.48	17.67	6.95
		08-Apr-13	22.62	29.47	17.6	6.85
		25-Apr-13	22.63	29.46	17.59	6.83
		13-Jun-13	22.22	29.46	17.93	7.24
		26-Jun-13	22.31	29.46	17.86	7.15

**Quarterly Report – Second Quarter 2013**  
**14<sup>th</sup> Street Parcel – Lower Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

The 14<sup>th</sup> Street parcel is located South of Boston Street and west of Newkirk Street. There are currently 14 lower zone wells located on the parcel. A Lower Zone LNAPL skimming system is in place in the 14<sup>th</sup> Street parcel, which includes ten LNAPL skimming pumps located at wells 3089, 3091, 3092, 3093, 3094, 3096, 3200, 3201, 3202, and 3203. System performance data, apparent LNAPL thickness and groundwater potentiometric elevation maps are presented in the appendices of this report. Total LNAPL recovery from the 14<sup>th</sup> Street parcel lower zone was approximately 24,745 gallons during this quarter. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

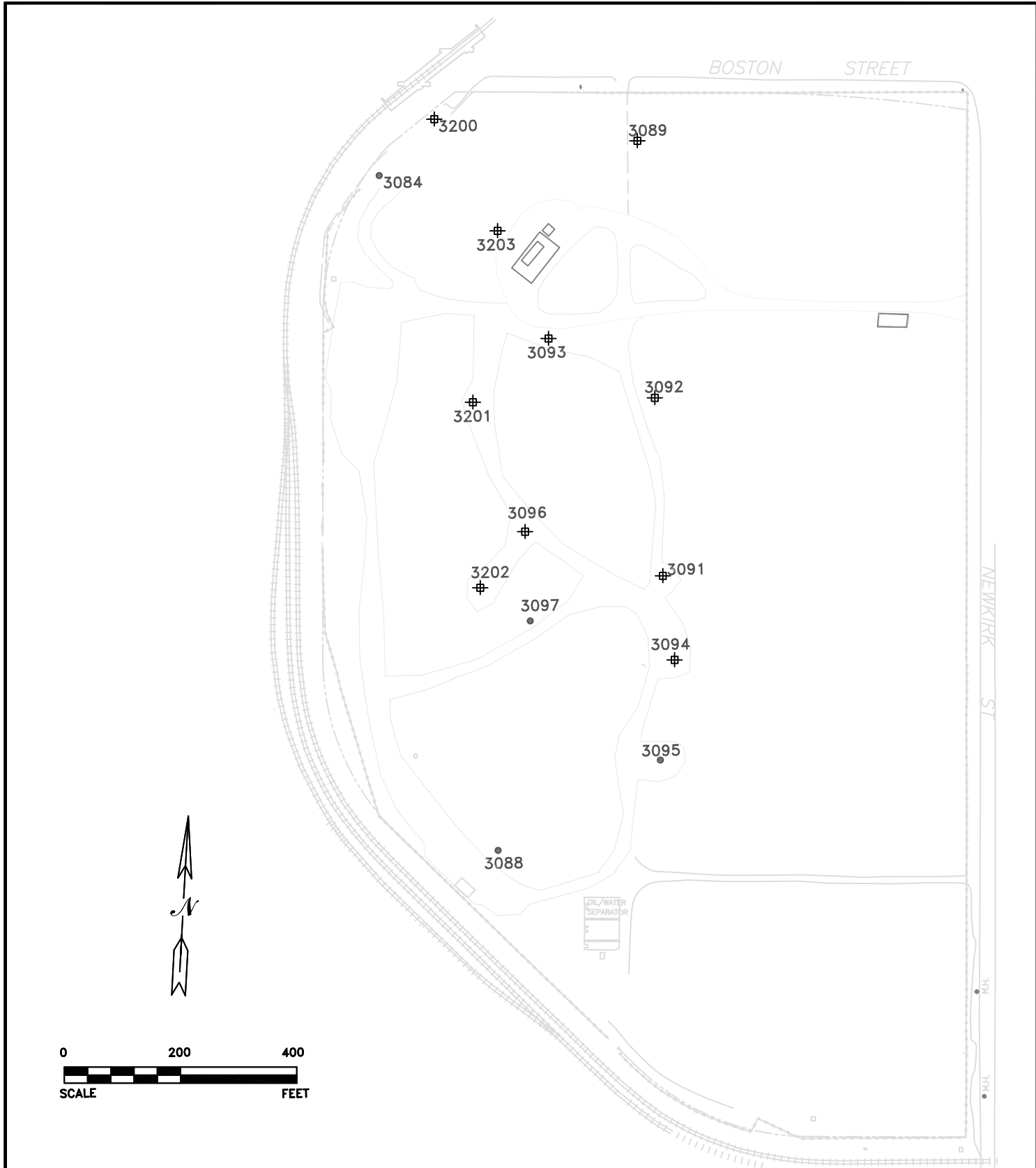
- Quarterly gauging of all wells.
- Operation of the Canton Trade/Canton Railroad/14<sup>th</sup> Street Lower Zone recovery system.
- Recovery performance optimization.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Completion of MDE technical meeting per Consent Decree requirement.

**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of all wells.
- Operation of the Canton Trade/Canton Railroad/14<sup>th</sup> Street Lower Zone recovery system.
- Recovery performance optimization.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Submission of request for abandonment of wells 3084, 3095 and 3097 per existing Consent Decree LNAPL Recovery Optimization Procedures.

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)
- Quarterly Summary Sheet – Lower Zone System Performance Optimization



LEGEND

⊕ LOWER ZONE LNAPL RECOVERY WELLS

● 3090 LOWER ZONE MONITORING WELLS

===== EXISTING R.R. TRACKS

NOTE: WELL LOCATIONS ARE APPROXIMATE



TETRA TECH GEO

SITE MAP

14TH STREET AREA LOWER ZONE

BALTIMORE, MD 21224



# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### 14th Street Area

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
3084	12/21/11	14.19	14.14	0.05	9.65	-12.96	36.79	0.0	-22.60
3088	06/19/13	57.19	5.86	51.33	-32.09	-25.93	51.02	0.0	6.17
3089	06/17/13	49.51	9.74	39.77	-21.08	-13.87	42.29	0.7	7.22
3091	06/11/13	19.08	19.08	0.00	9.05	-13.00	41.13	0.0	-22.05
3092	06/21/13	18.58	18.58	0.00	9.31	-16.01	50.81	0.0	-25.32
3093	06/21/13	19.97	19.97	0.00	9.31	-20.52	49.35	0.0	-29.83
3094	06/17/13	46.09	9.57	36.52	-18.72	-18.52	45.90	0.5	0.20
3095	10/25/12	24.97	24.97	0.00	6.34	-12.86	44.17	0.0	-19.20
3096	06/17/13	41.84	10.52	31.32	-14.60	-9.03	36.27	2.0	5.57
3097	10/25/12	21.40	21.40	0.00	8.82	-12.60	42.82	0.0	-21.42
3200	06/17/13	12.01	11.73	0.28	10.17	-17.14	39.32	2.3	-27.31
3201	06/17/13	48.30	10.23	38.07	-21.02	-12.33	39.60	2.6	8.70
3202	06/17/13	44.98	6.43	38.55	-19.36	-14.69	40.31	0.5	4.67
3203	06/17/13	52.97	9.09	43.88	-24.68	-8.00	36.29	9.0	16.68

\*\*- Consistent rate cannot be calculated due to difficulty in maintaining 1/2 GPH pumping rate  
 EST = Estimated Recovery rate

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness	
14th Street LZ	3088	25-Jul-12	6.76	52.87	11.42	46.11	
		23-Aug-12	6.48	52.66	11.69	46.18	
		25-Sep-12	6.21	56.37	11.36	50.16	
			24-Oct-12	6.16	55.16	11.59	49
			29-Nov-12	6.26	53.87	11.69	47.61
			03-Jan-13	6.29	53.53	11.72	47.24
			22-Mar-13	5.86	53.01	12.16	47.15
			19-Jun-13	5.86	57.19	11.54	51.33
		3089	12-Jul-12	11.41	48.38	11.47	36.97
			24-Jul-12	10.78	47.29	12.17	36.51
			15-Aug-12	10.75	47.14	12.22	36.39
			29-Aug-12	11.01	45.42	12.25	34.41
			14-Sep-12	13.99	35.6	11.19	21.61
			17-Sep-12	11.13	44.8	12.25	33.67
			27-Sep-12	10.08	49.42	12.45	39.34
			15-Oct-12	9.99	47.65	12.79	37.66
			12-Nov-12	10.15	49.62	12.36	39.47
			28-Nov-12	11.28	45.33	12.04	34.05
	31-Dec-12		10.43	49.13	12.19	38.7	
	15-Jan-13		10.31	49.42	12.25	39.11	
	29-Jan-13		10.69	48.83	12.02	38.14	
	14-Feb-13		10.19	49.03	12.41	38.84	
	26-Feb-13		10.51	48.64	12.2	38.13	
	26-Mar-13	10.14	48.61	12.52	38.47		
	09-Apr-13	9.93	48.44	12.72	38.51		
	22-Apr-13	10.22	49.71	12.28	39.49		
	14-May-13	10.04	49.13	12.52	39.09		
	31-May-13	10.22	48.73	12.43	38.51		
	17-Jun-13	9.74	49.51	12.72	39.77		
	3091	03-Jul-12	10.49	50.5	11.64	40.01	
		05-Jul-12	11.23	47.66	11.43	36.43	
		06-Jul-12	11.36	47.77	11.31	36.41	
		09-Jul-12	11.69	46.72	11.18	35.03	
		10-Jul-12	12.34	44.62	10.95	32.28	
		12-Jul-12	13.92	40.04	10.29	26.12	
		16-Jul-12	12.2	44.28	11.12	32.08	
		17-Jul-12	12.47	44.56	10.84	32.09	
		18-Jul-12	12.82	42.25	10.89	29.43	
		19-Jul-12	13.41	40.47	10.66	27.06	
		20-Aug-12	9.83	50.21	12.24	40.38	
		21-Aug-12	10.82	47.38	11.82	36.56	
		22-Aug-12	11.58	45.22	11.5	33.64	
		23-Aug-12	11.92	44.04	11.39	32.12	
		24-Aug-12	12.57	42.94	11	30.37	
	27-Aug-12	14.06	38.12	10.46	24.06		
	27-Sep-12	9.72	50.17	12.34	40.45		
	28-Sep-12	10.43	47.62	12.12	37.19		
	01-Oct-12	9.77	49.69	12.37	39.92		
	08-Oct-12	9.92	50.06	12.19	40.14		
	09-Oct-12	11.43	44.98	11.67	33.55		
	15-Oct-12	9.48	49.86	12.59	40.38		
	16-Oct-12	11.95	42.44	11.6	30.49		
	18-Oct-12	15.58	30.85	10.26	15.27		

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
14th Street LZ	3091	19-Nov-12	9.62	50.06	12.44	40.44
		20-Nov-12	12.36	40.87	11.49	28.51
		21-Nov-12	15.97	28.76	10.24	12.79
		21-Dec-12	9.01	50.02	12.97	41.01
		27-Dec-12	16	29.01	10.18	13.01
		28-Jan-13	10.18	49.99	11.98	39.81
		29-Jan-13	13.42	38.68	10.92	25.26
		20-Feb-13	10.03	50.2	12.07	40.17
		21-Feb-13	13.81	38.47	10.62	24.66
		22-Feb-13	11.7	45.73	11.32	34.03
		25-Feb-13	14.88	30.52	10.9	15.64
		26-Feb-13	15.87	30.62	10.05	14.75
		27-Feb-13	16.03	28.23	10.27	12.2
		28-Feb-13	15.98	28.52	10.27	12.54
		01-Mar-13	15.94	28.81	10.26	12.87
		04-Mar-13	15.95	29.61	10.13	13.66
		07-Mar-13	15.76	30.04	10.23	14.28
		08-Mar-13	15.73	30.31	10.21	14.58
		11-Mar-13	19.31	19.31	8.82	0
		10-Apr-13	9.54	49.99	12.52	40.45
		10-Apr-13	16.31	16.31	11.82	0
		10-May-13	9.73	49.79	12.39	40.06
		10-May-13	16.37	16.37	11.76	0
		11-Jun-13	9.73	49.56	12.42	39.83
		11-Jun-13	19.08	19.08	9.05	0
	3092	02-Jul-12	17.6	29.14	9.03	11.54
		03-Jul-12	19.32	26.68	8.23	7.36
		06-Jul-12	20.18	21.54	8.68	1.36
		10-Jul-12	20.21	21.38	8.69	1.17
		11-Jul-12	20.47	21.4	8.49	0.93
		12-Jul-12	19.8	23.07	8.64	3.27
		13-Jul-12	19.6	23.46	8.71	3.86
		16-Jul-12	18.7	25.27	9.02	6.57
		18-Jul-12	18.72	25.07	9.05	6.35
		19-Jul-12	18.89	24.72	8.99	5.83
		20-Jul-12	18.49	25.74	9.08	7.25
		23-Jul-12	17.68	27.97	9.23	10.29
		24-Jul-12	17.22	28.63	9.44	11.41
		26-Jul-12	16.81	30.18	9.42	13.37
		27-Jul-12	16.77	30.29	9.43	13.52
		30-Jul-12	16.84	30.43	9.34	13.59
		01-Aug-12	16.41	30.9	9.58	14.49
		03-Aug-12	16.32	32.59	9.28	16.27
		06-Aug-12	16.29	31.71	9.49	15.42
		08-Aug-12	16.83	29.36	9.58	12.53
		09-Aug-12	17.32	27.35	9.64	10.03
		10-Aug-12	17.72	26.3	9.56	8.58
		14-Aug-12	18.23	25.63	9.31	7.4
		15-Aug-12	19.63	20.87	9.26	1.24
		20-Aug-12	16.8	29.42	9.6	12.62
		13-Sep-12	9.88	51.29	10.21	41.41
		14-Sep-12	13.41	40.23	9.88	26.82
		17-Sep-12	19.85	19.85	9.31	0
		17-Oct-12	9.89	50.37	10.4	40.48

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
14th Street LZ	3092	18-Oct-12	19.61	19.61	9.55	0
		21-Dec-12	9.54	49.6	10.85	40.06
		21-Dec-12	18.56	18.56	10.6	0
		21-Jan-13	10.53	50.51	9.87	39.98
		21-Jan-13	18.51	18.51	10.65	0
		20-Feb-13	13.82	39.31	9.76	25.49
		20-Feb-13	18.49	18.49	10.67	0
		22-Mar-13	12.73	29.74	12.7	17.01
		22-Mar-13	18.52	18.52	10.64	0
		22-Apr-13	18.9	18.9	10.26	0
		22-Apr-13	15.22	35.51	9.5	20.29
		22-May-13	10.5	48.51	10.33	38.01
		22-May-13	18.6	18.6	10.56	0
		21-Jun-13	10.22	50.44	10.13	40.22
		21-Jun-13	18.58	18.58	10.58	0
	3093	02-Jul-12	14.55	35.53	9.65	20.98
		03-Jul-12	15.31	32.44	9.74	17.13
		06-Jul-12	16.77	27.82	9.62	11.05
		10-Jul-12	19.15	19.89	9.52	0.74
		11-Jul-12	19.37	19.91	9.34	0.54
		12-Jul-12	19.47	19.72	9.31	0.25
		12-Jul-12	19.52	19.52	9.31	0
		16-Aug-12	8.42	55.7	9.96	47.28
		17-Aug-12	19.32	19.32	9.51	0
		18-Sep-12	20.17	20.17	8.66	0
		18-Sep-12	7.95	55.47	10.38	47.52
		18-Oct-12	7.8	55.24	10.55	47.44
		18-Oct-12	19.89	19.89	8.94	0
		21-Dec-12	8.02	55.1	10.41	47.08
		21-Dec-12	20.19	20.19	8.64	0
		21-Jan-13	8.92	55.25	9.67	46.33
		21-Jan-13	20.21	20.21	8.62	0
		20-Feb-13	8.9	55.46	9.64	46.56
		20-Feb-13	20.27	20.27	8.56	0
		22-Mar-13	8.49	55.08	10.05	46.59
		22-Mar-13	20.23	20.23	8.6	0
		22-Apr-13	20.02	20.02	8.81	0
		22-Apr-13	9	55.82	9.48	46.82
		22-May-13	8.52	54.61	10.13	46.09
		22-May-13	20.01	20.01	8.82	0
		21-Jun-13	9.54	54.99	9.25	45.45
		21-Jun-13	19.97	19.97	8.86	0
	3094	12-Jul-12	10.73	47.17	8.41	36.44
		24-Jul-12	10.11	47.17	8.89	37.06
		15-Aug-12	9.97	47.08	9.01	37.11
		29-Aug-12	9.73	47.23	9.17	37.5
		14-Sep-12	10.4	46.23	8.87	35.83
		27-Sep-12	10.11	46.58	9.02	36.47
		15-Oct-12	9.82	46.52	9.26	36.7
		26-Oct-12	10.33	46.17	8.94	35.84
		12-Nov-12	9.86	46.9	9.14	37.04
		28-Nov-12	10.13	46.71	8.97	36.58
		31-Dec-12	10.44	46.28	8.83	35.84
		15-Jan-13	10.71	46.25	8.63	35.54
		29-Jan-13	10.12	46.25	9.09	36.13

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness	
14th Street LZ	3094	14-Feb-13	9.73	46.89	9.24	37.16	
		26-Feb-13	9.97	46.8	9.08	36.83	
		26-Mar-13	9.82	46.54	9.25	36.72	
		09-Apr-13	9.52	46.61	9.47	37.09	
		22-Apr-13	9.69	47.7	9.09	38.01	
		14-May-13	9.72	47	9.23	37.28	
	3095	17-Jun-13	9.57	46.09	9.55	36.52	
		26-Jul-12	14.27	50.11	9.01	35.84	
		26-Jul-12	25.76	25.76	5.55	0	
		28-Aug-12	25.96	25.96	5.35	0	
		28-Aug-12	13.59	50.11	9.54	36.52	
		26-Sep-12	13.92	49.66	9.39	35.74	
		26-Sep-12	23.31	23.31	8	0	
		25-Oct-12	14.2	49.38	9.23	35.18	
		25-Oct-12	24.97	24.97	6.34	0	
		3096	12-Jul-12	10.22	47.64	8.64	37.42
		24-Jul-12	9.34	48.2	9.2	38.86	
		15-Aug-12	9.29	48.13	9.25	38.84	
		29-Aug-12	9.05	48.46	9.36	39.41	
		14-Sep-12	9.26	48.05	9.29	38.79	
		27-Sep-12	9.12	48.23	9.36	39.11	
		15-Oct-12	8.83	47.97	9.64	39.14	
		26-Oct-12	9.53	46.88	9.34	37.35	
		12-Nov-12	11.27	40.52	9.42	29.25	
28-Nov-12	10.98	42.39	9.22	31.41			
31-Dec-12	11.36	41.61	9.1	30.25			
15-Jan-13	11.05	41.43	9.38	30.38			
29-Jan-13	10.68	42.19	9.5	31.51			
14-Feb-13	10.39	43.72	9.38	33.33			
26-Feb-13	10.74	43.12	9.25	32.38			
26-Mar-13	10.28	42.88	9.66	32.6			
09-Apr-13	10.32	42.69	9.67	32.37			
22-Apr-13	11.08	41.93	9.25	30.85			
14-May-13	10.91	41.79	9.41	30.88			
31-May-13	11.14	41.19	9.37	30.05			
3097	17-Jun-13	10.52	41.84	9.7	31.32		
	26-Jul-12	19.78	20.3	10.32	0.52		
	26-Jul-12	20.41	20.41	9.81	0		
	28-Aug-12	19.08	20.61	10.8	1.53		
	28-Aug-12	20.85	20.85	9.37	0		
	26-Sep-12	19.05	21.1	10.71	2.05		
	26-Sep-12	21.28	21.28	8.94	0		
	25-Oct-12	21.4	21.4	8.82	0		
	25-Oct-12	19.31	21.57	10.4	2.26		
	3200	12-Jul-12	5.06	42.5	8.24	37.44	
	24-Jul-12	4.33	42.51	8.8	38.18		
	15-Aug-12	4.13	42.9	8.86	38.77		
29-Aug-12	4.11	42.2	9.04	38.09			
14-Sep-12	4.42	41.47	8.97	37.05			
27-Sep-12	3.62	44.14	8.95	40.52			
15-Oct-12	3.72	42.94	9.16	39.22			
12-Nov-12	4.04	43.43	8.8	39.39			
28-Nov-12	4.02	43.35	8.83	39.33			

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness	
14th Street LZ	3200	31-Dec-12	4.4	42.86	8.66	38.46	
		15-Jan-13	4.21	43.13	8.74	38.92	
		29-Jan-13	4.16	43.18	8.77	39.02	
		14-Feb-13	4.21	43	8.77	38.79	
		26-Feb-13	4.27	42.95	8.74	38.68	
		26-Mar-13	2.89	44.49	9.42	41.6	
		09-Apr-13	4.09	41.67	9.18	37.58	
		22-Apr-13	4.67	41.38	8.8	36.71	
		14-May-13	4.53	41.14	8.97	36.61	
		31-May-13	4.68	40.78	8.94	36.1	
		17-Jun-13	11.73	12.01	10.39	0.28	
		3201	12-Jul-12	10.46	48.88	8.32	38.42
			24-Jul-12	9.76	48.92	8.85	39.16
			15-Aug-12	9.66	48.9	8.94	39.24
	29-Aug-12		9.27	49.26	9.16	39.99	
	14-Sep-12		9.62	49.01	8.94	39.39	
	27-Sep-12		9.53	49.13	8.99	39.6	
	15-Oct-12		9.24	48.97	9.25	39.73	
	26-Oct-12		8.57	48.92	9.78	40.35	
	12-Nov-12		9.46	48.97	9.08	39.51	
	28-Nov-12		9.62	49.11	8.92	39.49	
	31-Dec-12		9.83	48.9	8.8	39.07	
	15-Jan-13		9.53	49.34	8.94	39.81	
	29-Jan-13		9.55	49	9	39.45	
	14-Feb-13		9.5	48.97	9.05	39.47	
	26-Feb-13	9.66	48.8	8.96	39.14		
	26-Mar-13	9.16	48.59	9.39	39.43		
	09-Apr-13	9.28	48.53	9.31	39.25		
22-Apr-13	9.83	48.36	8.92	38.53			
14-May-13	9.72	48.39	9	38.67			
31-May-13	9.67	48.63	8.99	38.96			
17-Jun-13	10.23	48.3	8.62	38.07			
3202	12-Jul-12	8.13	44.51	8.84	36.38		
	24-Jul-12	7.63	43.63	9.43	36		
	15-Aug-12	7.39	43.83	9.56	36.44		
	29-Aug-12	7.55	42.82	9.68	35.27		
	14-Sep-12	8.07	41.38	9.63	33.31		
	27-Sep-12	7.09	44.58	9.61	37.49		
	15-Oct-12	6.57	44.95	9.92	38.38		
	26-Oct-12	7.11	44.67	9.58	37.56		
	12-Nov-12	7.52	42.92	9.68	35.4		
	28-Nov-12	7.63	43.09	9.56	35.46		
	31-Dec-12	6.77	46.56	9.39	39.79		
	15-Jan-13	7.18	45.07	9.43	37.89		
	29-Jan-13	6.92	45.33	9.57	38.41		
	14-Feb-13	6.77	45.21	9.71	38.44		
26-Feb-13	7.03	45.16	9.52	38.13			
26-Mar-13	6.4	45.12	10.01	38.72			
09-Apr-13	6.47	45.32	9.91	38.85			
22-Apr-13	6.75	46.13	9.5	39.38			
14-May-13	6.87	45.06	9.67	38.19			
31-May-13	7.03	44.76	9.62	37.73			
17-Jun-13	6.43	44.98	10.02	38.55			

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
14th Street LZ	3203	12-Jul-12	10.49	53.94	11.65	43.45
		24-Jul-12	9.77	53.8	12.23	44.03
		15-Aug-12	9.63	53.72	12.36	44.09
		29-Aug-12	9.63	53.85	12.33	44.22
		14-Sep-12	9.64	53.61	12.38	43.97
		27-Sep-12	9.64	53.5	12.4	43.86
		15-Oct-12	9.43	53.38	12.59	43.95
		12-Nov-12	9.46	53.49	12.54	44.03
		28-Nov-12	9.83	53.21	12.33	43.38
		31-Dec-12	10.16	52.9	12.15	42.74
		15-Jan-13	9.59	53.04	12.55	43.45
		29-Jan-13	9.64	53.07	12.5	43.43
		14-Feb-13	9.83	52.93	12.39	43.1
		26-Feb-13	9.83	53.04	12.37	43.21
		26-Mar-13	9.17	52.86	12.91	43.69
		09-Apr-13	9.27	52.71	12.87	43.44
		23-Apr-13	8.7	54.13	12.97	45.43
		14-May-13	9.53	53.03	12.6	43.5
		31-May-13	9.57	53.03	12.57	43.46
		17-Jun-13	9.09	52.97	12.95	43.88

**Quarterly Report – Second Quarter 2013**  
**Baltimore City Property – Lower Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

Environmental activities have been completed on several properties owned by Baltimore City. There are two parcels located between the Northern edge of Boston St. and the southern property line of the Toone St. parcel both east and west of South Haven Street. A third is the remnant of Danville Avenue between South Haven Street and the railroad tracks. There are currently 4 lower zone wells located on Baltimore City property, which are referenced in the attached site map. These include wells 2910-2912 and 2915 located south of the Toone Street parcel and north of Boston Street. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

- Quarterly gauging of all wells.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Completion of MDE technical meeting per Consent Decree requirement.

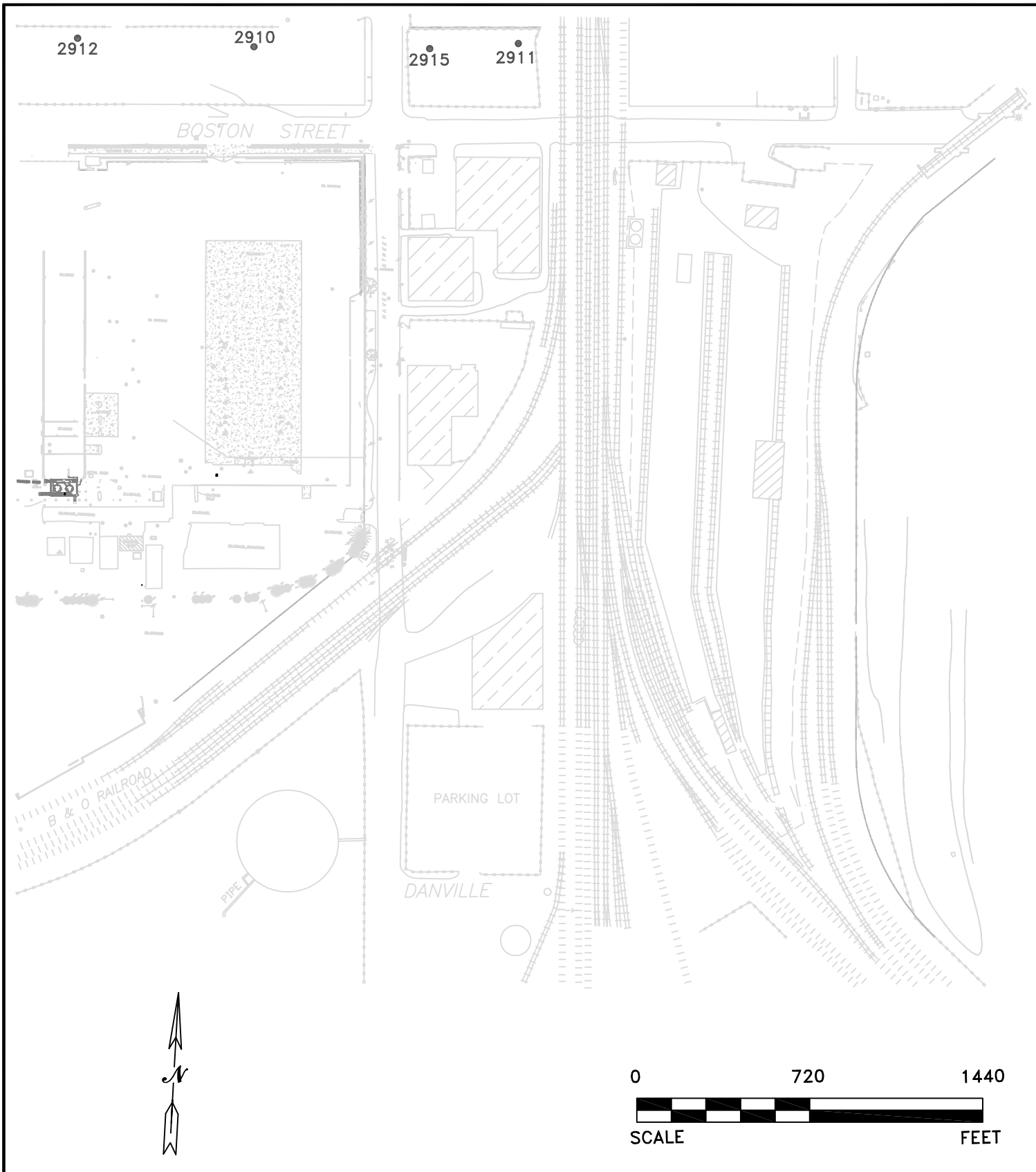
**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of all wells.
- Recovery testing of lower zone wells.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Submission of request for abandonment of wells 2910 and 2912 per existing Consent Decree LNAPL Recovery Optimization Procedures

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)
- Quarterly Summary Sheet – Lower Zone System Performance Optimization





LEGEND

2923

LOWER ZONE GROUNDWATER MONITORING WELL



EXISTING R.R. TRACKS

NOTE: WELL LOCATIONS ARE APPROXIMATE



TETRA TECH

SITE MAP

BALTIMORE CITY PROPERTY

BALTIMORE, MD 21224

# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### Baltimore City

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
2910	05/17/13	38.53	38.53	0.00	-0.40	-3.62	41.75	0.0	-3.22
2911	06/18/13	17.23	17.23	0.00	24.62	-9.00	50.85	0.0	-33.62
2912	06/28/12	24.87	24.87	0.00	13.69	-8.77	47.33	0.0	-22.46
2915	06/18/13	59.17	18.44	40.73	-18.36	0.00	40.81	0.0	18.36

\*\*- Consistent rate cannot be calculated due to difficulty in maintaining 1/2 GPH pumping rate  
 EST = Estimated Recovery rate

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Balto City LZ	2910	30-Jul-12	40.92	40.92	-2.79	0
		30-Jul-12	19.12	52.4	14.02	33.28
		05-Sep-12	18.29	52.4	14.73	34.11
		05-Sep-12	40.38	40.38	-2.25	0
		09-Nov-12	18.63	52.33	14.45	33.7
		09-Nov-12	40.14	40.14	-2.01	0
		11-Dec-12	18.4	52	14.69	33.6
		11-Dec-12	40.66	40.66	-2.53	0
		10-Jan-13	19.43	52.07	13.81	32.64
		10-Jan-13	39.83	39.83	-1.7	0
		11-Feb-13	38.35	38.35	-0.22	0
		11-Feb-13	18.72	51.75	14.46	33.03
		15-Mar-13	38.81	38.81	-0.68	0
		15-Mar-13	18.71	51.99	14.43	33.28
		15-Apr-13	18.26	52.14	14.79	33.88
		15-Apr-13	40.42	40.42	-2.29	0
		17-May-13	18.64	52.18	14.46	33.54
		17-May-13	38.53	38.53	-0.4	0
	2911	26-Sep-12	17.99	17.99	23.86	0
		07-Jan-13	18.37	18.37	23.48	0
		22-Mar-13	17.94	17.94	23.91	0
		18-Jun-13	17.23	17.23	24.62	0
	2915	26-Sep-12	18.64	59.67	16.02	41.03
		03-Jan-13	19.36	59.47	15.44	40.11
		22-Mar-13	18.68	59.51	16.01	40.83
		18-Jun-13	18.44	59.17	16.26	40.73

**Quarterly Report – Second Quarter 2013**  
**Canton Railroad Property – Lower Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

The Canton Railroad property is located at 4201 Boston Street, west of the ExxonMobil 14<sup>th</sup> Street parcel. There are currently 3 lower zone wells located on the parcel, which are referenced in the attached site map. Total LNAPL recovered from the property during the quarter was approximately 5,676 gallons. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

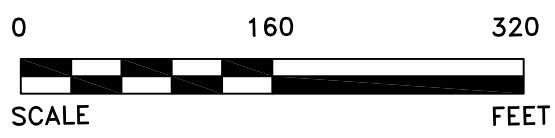
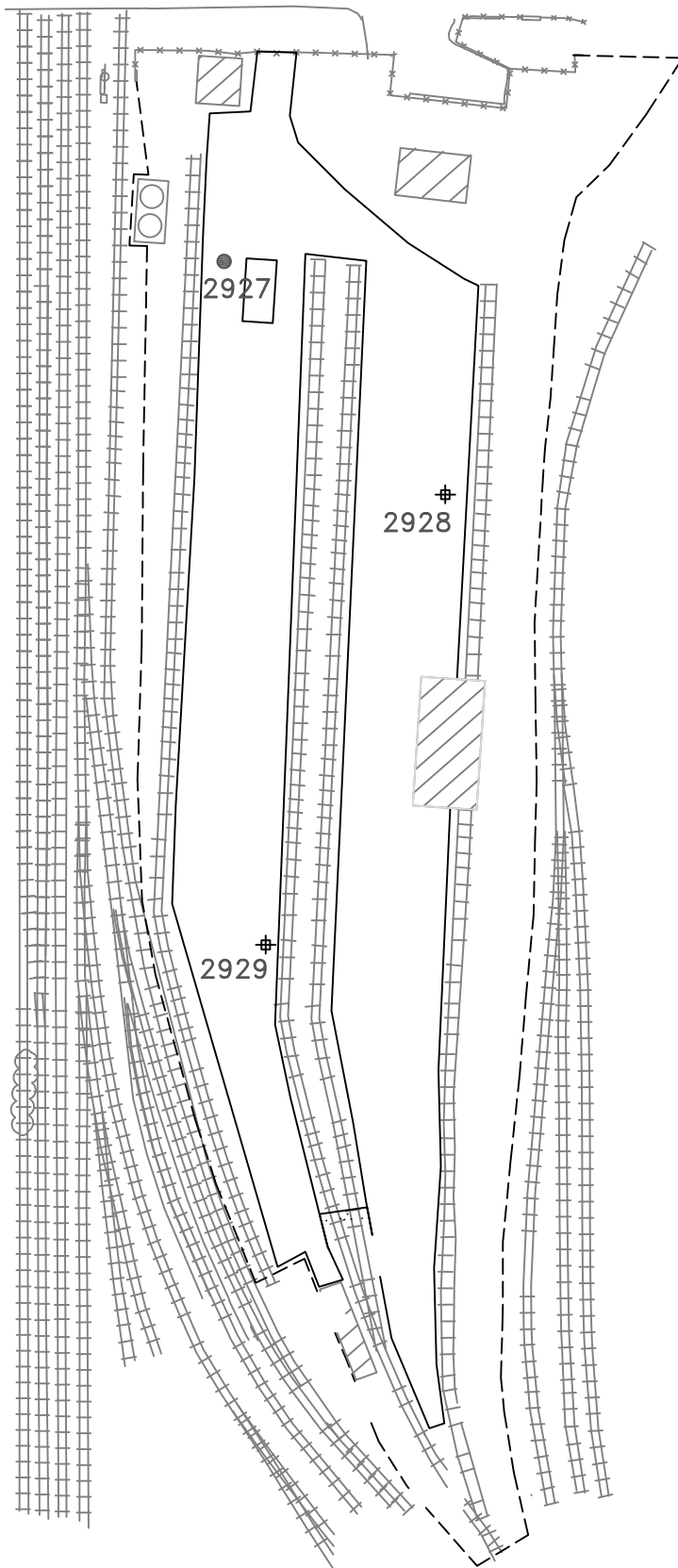
- Quarterly gauging of all wells.
- Operation of the Canton Trade/Canton Railroad/14<sup>th</sup> Street Lower Zone recovery system.
- Recovery performance optimization.
- Completion of MDE technical meeting per Consent Decree requirement.

**Activities Scheduled for Completion During Q3, 2013:**







- Quarterly gauging of all wells.
- Operation of the Canton Trade/Canton Railroad/14<sup>th</sup> Street Lower Zone recovery system.
- Recovery performance optimization.
- Submission of request for abandonment of wells 3904, 3906 and 3907 per existing Consent Decree LNAPL Recovery Optimization Procedures

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)
- Quarterly Summary Sheet – Lower Zone System Performance Optimization



LEGEND

-  LOWER ZONE LNAPL RECOVERY WELLS
-  2916 DEEP GROUNDWATER MONITORING WELLS
-  EXISTING BUILDINGS
-  EXISTING R.R. TRACKS
-  ASPHALT PAVEMENT
-  FENCE LINE

NOTE: WELL LOCATIONS ARE APPROXIMATE



SITE MAP

CANTON R.R. PROPERTY – LOWER ZONE  
4201 BOSTON STREET  
BALTIMORE, MD 21224

# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### Canton Railroad Property

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
2927	06/18/13	19.89	16.49	3.40	7.80	-28.69	56.38	0.0	-36.49
2928	06/17/13	45.85	5.18	40.67	-18.69	-10.34	37.50	1.1	8.35
2929	06/17/13	49.68	4.44	45.24	-21.89	-20.71	48.50	0.5	1.18

\*\*- Consistent rate cannot be calculated due to difficulty in maintaining 1/2 GPH pumping rate  
 EST = Estimated Recovery rate

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness	
Canton R.R. LZ	2927	24-Apr-12	16.98	19.85	10.71	2.87	
		24-May-12	17.19	20.15	10.5	2.96	
		20-Jun-12	17.06	20.08	10.63	3.02	
		25-Jul-12	17.11	20.19	10.58	3.08	
		23-Aug-12	16.97	20.11	10.72	3.14	
		25-Sep-12	16.63	20.75	11.06	4.12	
		24-Oct-12	16.76	20.04	10.93	3.28	
		29-Nov-12	16.96	20.24	10.73	3.28	
		19-Dec-12	16.66	19.96	11.03	3.3	
		28-Mar-13	16.85	20.24	10.84	3.39	
		2928	12-Apr-12	6.05	48.77	11.7	42.72
			26-Apr-12	5.66	48.73	12.01	43.07
			11-May-12	6.24	48.18	11.68	41.94
29-May-12	5.69		48.19	12.1	42.5		
11-Jun-12	6.06		48.01	11.86	41.95		
28-Jun-12	5.97		48	11.93	42.03		
13-Jul-12	6.51		47.86	11.54	41.35		
24-Jul-12	5.81		46.88	12.3	41.07		
14-Aug-12	5.71		47.02	12.35	41.31		
28-Aug-12	11.77		20.85	13.39	9.08		
30-Aug-12	6.54		41.98	12.81	35.44		
13-Sep-12	5.87		47.02	12.22	41.15		
28-Sep-12	5.4		47.32	12.52	41.92		
11-Oct-12	5.73		47.22	12.29	41.49		
26-Oct-12	5.78		47.13	12.27	41.35		
12-Nov-12	5.63		47.2	12.37	41.57		
28-Nov-12	5.77		47.36	12.22	41.59		
02-Jan-13	5.68		47.83	12.19	42.15		
14-Jan-13	5.83		47.07	12.24	41.24		
30-Jan-13	5.44		47.03	12.55	41.59		
13-Feb-13	5.56		46.78	12.52	41.22		
27-Feb-13	5.41		46.67	12.66	41.26		
2929	27-Mar-13		5.83	46.21	12.43	40.38	
	12-Apr-12		6.09	49.5	12.15	43.41	
	26-Apr-12		5.7	49.34	12.49	43.64	
	11-May-12		6.07	48.8	12.32	42.73	
	29-May-12		5.44	49.45	12.67	44.01	
	11-Jun-12	5.79	49.94	12.29	44.15		
	28-Jun-12	5.67	49.94	12.38	44.27		
	13-Jul-12	6.14	49.97	12.01	43.83		
	24-Jul-12	5.25	50.02	12.69	44.77		
	14-Aug-12	5.09	49.9	12.84	44.81		
	28-Aug-12	4.74	50.07	13.08	45.33		
	13-Sep-12	5.22	49.85	12.75	44.63		
	28-Sep-12	4.84	49.94	13.03	45.1		
	11-Oct-12	5.16	49.82	12.8	44.66		
	26-Oct-12	5.23	49.74	12.77	44.51		
	12-Nov-12	4.97	49.69	12.98	44.72		
	28-Nov-12	5.06	50.01	12.84	44.95		
02-Jan-13	5.44	49.34	12.69	43.9			
14-Jan-13	5.27	49.24	12.85	43.97			
30-Jan-13	4.78	49.67	13.13	44.89			
20-Feb-13	5.27	49.66	12.75	44.39			

<b>Area</b>	<b>Well No</b>	<b>Guage Date</b>	<b>Depth to Product</b>	<b>Depth to Water</b>	<b>Potentiometric Elevation</b>	<b>Apparent Thickness</b>
Canton R.R. LZ	2929	27-Feb-13	5.62	49.5	12.52	43.88
		27-Mar-13	4.97	49.52	13.02	44.55



**Quarterly Report - Second Quarter 2013**  
**Canton Trade Center Property – Lower Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

The Canton Trade Center property is located north of Boston Street and north of the 14th Street ExxonMobil parcel. Baltimore Quality Assurance owns the western portion of the property and Overflo Public Warehouse owns the eastern portion of the property. There are currently 8 lower zone wells. The system recovers LNAPL using skimming-only pumps. Total LNAPL recovered from the property during the quarter was approximately 13,579 gallons. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

- Quarterly gauging of all wells.
- Operation of the Canton Trade/Canton Railroad/14<sup>th</sup> Street Lower Zone recovery system.
- Recovery testing of wells using MPRT systems and recovery system.
- Recovery performance optimization.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.
- Completion of MDE technical meeting per Consent Decree requirement.

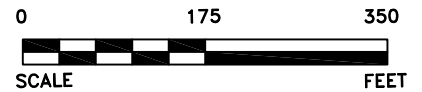
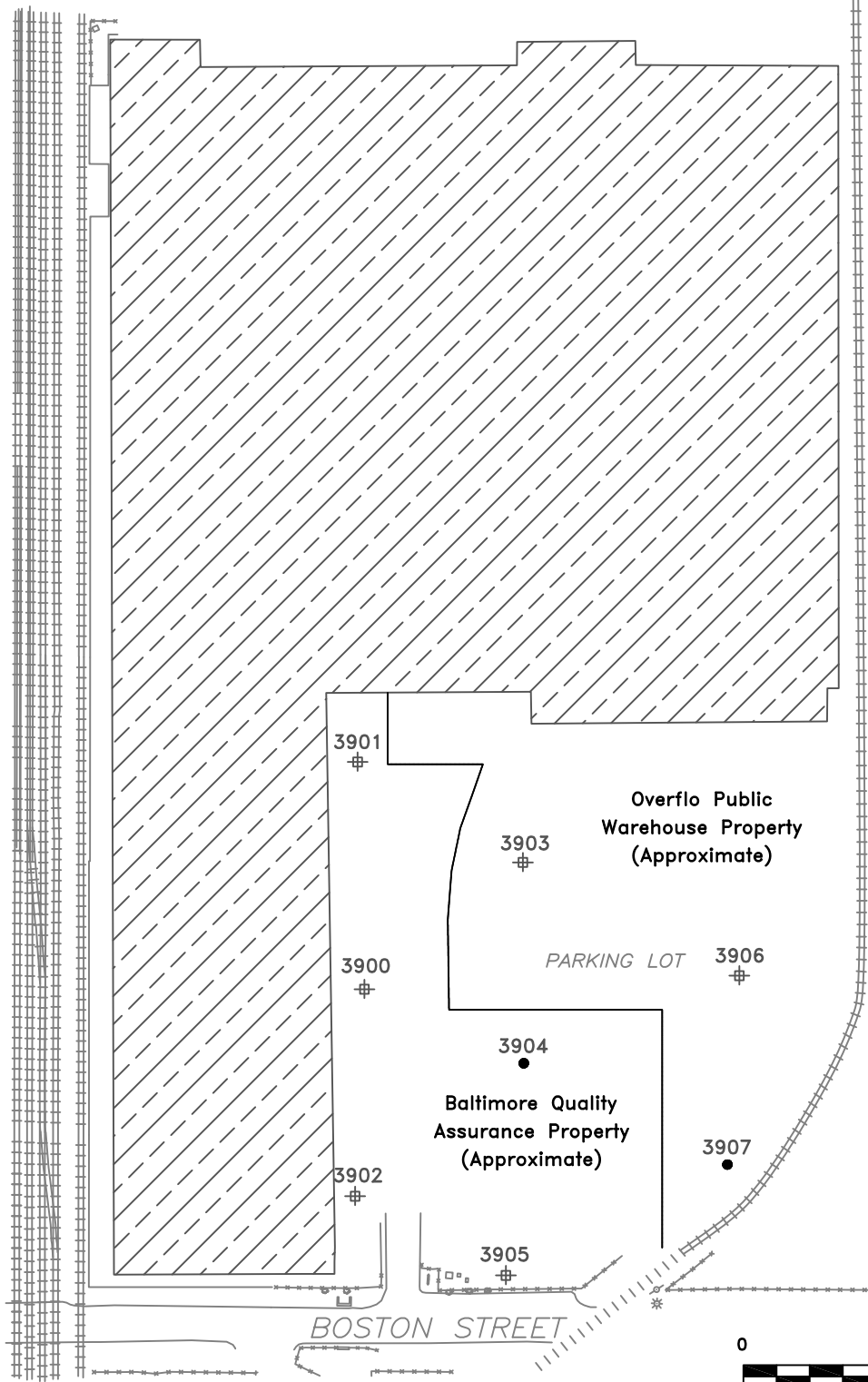
**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of all wells.
- Operation of the Canton Trade/Canton Railroad/14<sup>th</sup> Street Lower Zone recovery system.
- Recovery testing of wells using MPRT systems and recovery system.
- Recovery performance optimization.
- Residual recovery of LNAPL in wells which LNAPL thickness cannot be maintained at 0.5 gph.

**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)
- Quarterly Summary Sheet – Lower Zone System Performance Optimization

O'DONNELL STREET




LEGEND

⊕ LOWER ZONE LNAPL RECOVERY WELLS

● LOWER ZONE GROUNDWATER MONITORING WELLS

 EXISTING BUILDING

 EXISTING R.R. TRACKS

NOTE: WELL LOCATIONS ARE APPROXIMATE



SITE MAP

CANTON TRADE CENTER PROPERTY  
BALTIMORE, MD 21224

# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### Canton Trade Center Property

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
3900	06/17/13	38.96	5.57	33.39	-15.03	-12.11	36.04	2.0	2.92
3901	06/17/13	37.91	6.40	31.51	-12.54	-8.86	34.23	0.5	3.68
3902	06/17/13	35.94	5.28	30.66	-13.18	-9.94	32.71	3.1	3.23
3903	06/04/13	13.01	13.01	0.00	11.77	-21.27	46.04	0.5	-33.03
3904	07/25/12	14.38	14.35	0.03	10.52	-32.86	57.75	0.0	-43.37
3905	06/17/13	37.63	4.02	33.61	-15.50	-14.20	36.33	0.6	1.30
3906	03/13/12	14.46	14.46	0.00	11.16	-26.09	51.71	0.0	-37.25
3907	07/23/12	13.89	13.82	0.07	10.20	-32.52	56.60	0.0	-42.71

\*\*- Consistent rate cannot be calculated due to difficulty in maintaining 1/2 GPH pumping rate  
 EST = Estimated Recovery rate

## Former ExxonMobil Baltimore Terminal Gauging Data

Area	Well No	Gauge Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Canton Trade LZ	3900	13-Jul-12	6.91	39.37	9.91	32.46
		24-Jul-12	6.12	39.42	10.52	33.3
		14-Aug-12	6.22	39.01	10.53	32.79
		29-Aug-12	5.97	38.7	10.79	32.73
		13-Sep-12	5.98	40.38	10.41	34.4
		28-Sep-12	5.32	40.93	10.81	35.61
		11-Oct-12	5.68	40.84	10.55	35.16
		26-Oct-12	5.67	40.72	10.58	35.05
		12-Nov-12	5.18	40.83	10.94	35.65
		28-Nov-12	5.07	44.53	10.22	39.46
		14-Jan-13	5.53	41.21	10.58	35.68
		30-Jan-13	5.07	41.13	10.96	36.06
		13-Feb-13	5.23	41.04	10.86	35.81
		27-Feb-13	5.11	41.03	10.95	35.92
		27-Mar-13	5.51	40.98	10.65	35.47
		10-Apr-13	4.95	42.12	10.84	37.17
		23-Apr-13	5.83	39.51	10.72	33.68
		14-May-13	5.94	39.22	10.7	33.28
	31-May-13	6.14	38.87	10.62	32.73	
	17-Jun-13	5.57	38.96	11.05	33.39	
	3901	13-Jul-12	8.23	35.58	10.72	27.35
		24-Jul-12	7.7	34.86	11.29	27.16
		14-Aug-12	9.44	27.95	11.58	18.51
		16-Aug-12	7.82	34.39	11.31	26.57
		28-Aug-12	6.55	38.14	11.4	31.59
		13-Sep-12	7.46	36.33	11.13	28.87
		28-Sep-12	7.14	35.51	11.57	28.37
		01-Oct-12	7.44	35.36	11.37	27.92
		26-Oct-12	7.52	34.95	11.41	27.43
		12-Nov-12	6.35	39.36	11.27	33.01
		28-Nov-12	5.97	41.73	11	35.76
		02-Jan-13	6.66	39.41	11.02	32.75
		14-Jan-13	6.51	39.32	11.15	32.81
		30-Jan-13	6.08	39.49	11.44	33.41
		13-Feb-13	6.03	40.43	11.26	34.4
		27-Feb-13	5.89	40.03	11.46	34.14
		27-Mar-13	6.86	37.15	11.4	30.29
		10-Apr-13	6.4	38.04	11.54	31.64
		23-Apr-13	5.82	42.17	11.01	36.35
		14-May-13	6.44	39.22	11.23	32.78
		31-May-13	6.76	38.5	11.16	31.74
		17-Jun-13	6.4	37.91	11.57	31.51
3902		13-Jul-12	6.18	37.57	9.21	31.39
		24-Jul-12	5.43	37.59	9.78	32.16
	14-Aug-12	5.54	37.53	9.71	31.99	
	28-Aug-12	5.14	37.4	10.04	32.26	
	13-Sep-12	5.7	37.34	9.63	31.64	
	28-Sep-12	5.07	37.51	10.07	32.44	
	11-Oct-12	5.43	37.35	9.83	31.92	
	26-Oct-12	5.41	37.32	9.86	31.91	
	12-Nov-12	5.33	37.21	9.94	31.88	
	28-Nov-12	5.57	37.18	9.77	31.61	
	02-Jan-13	5.72	37.07	9.68	31.35	

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Canton Trade Lz	3902	14-Jan-13	5.63	36.93	9.78	31.3
		30-Jan-13	5.06	36.94	10.21	31.88
		13-Feb-13	5.32	37.19	9.96	31.87
		27-Feb-13	4.92	37.22	10.25	32.3
		27-Mar-13	5.48	36.4	10.02	30.92
		10-Apr-13	5.26	38.24	9.75	32.98
		23-Apr-13	5.63	36.14	9.97	30.51
		14-May-13	5.57	36.06	10.03	30.49
		31-May-13	5.64	36.03	9.98	30.39
		17-Jun-13	5.28	35.94	10.28	30.66
	3903	03-Jul-12	5.07	49.54	9.25	44.47
		05-Jul-12	5.5	47.52	9.4	42.02
		06-Jul-12	5.7	47.32	9.29	41.62
		09-Jul-12	5.81	46.73	9.35	40.92
		10-Jul-12	5.83	46.64	9.35	40.81
		13-Jul-12	6.18	46.06	9.22	39.88
		17-Jul-12	6.84	41.92	9.69	35.08
		17-Aug-12	4.45	49.61	9.71	45.16
		20-Aug-12	4.97	47.52	9.81	42.55
		21-Aug-12	5.14	47.46	9.69	42.32
		22-Aug-12	5.2	47.37	9.67	42.17
		23-Aug-12	5.28	47.15	9.66	41.87
		24-Aug-12	5.33	46.93	9.67	41.6
		27-Aug-12	5.21	46.62	9.83	41.41
		28-Aug-12	5.03	46.49	10	41.46
		30-Aug-12	6.54	41.98	9.91	35.44
		31-Aug-12	5.32	45.97	9.9	40.65
		28-Sep-12	4.3	49.6	9.83	45.3
		01-Oct-12	4.43	49.31	9.8	44.88
		08-Oct-12	4.53	49.72	9.63	45.19
		09-Oct-12	4.86	47.94	9.79	43.08
		10-Oct-12	4.54	48.02	10.02	43.48
		11-Oct-12	4.91	48.05	9.73	43.14
		12-Oct-12	4.85	48	9.78	43.15
		15-Oct-12	4.49	47.53	10.17	43.04
		16-Oct-12	4.8	47.43	9.96	42.63
		18-Oct-12	4.84	47.25	9.97	42.41
		19-Oct-12	4.59	47.09	10.2	42.5
		26-Oct-12	4.86	48.07	9.76	43.21
		26-Nov-12	4.27	49.72	9.82	45.45
		27-Nov-12	4.75	48.18	9.82	43.43
		28-Nov-12	4.92	48.13	9.7	43.21
		29-Nov-12	4.87	48.42	9.67	43.55
		30-Nov-12	4.89	48.1	9.73	43.21
		03-Dec-12	4.66	48.35	9.85	43.69
		07-Dec-12	4.69	47.83	9.95	43.14
		17-Dec-12	4.6	47.26	10.15	42.66
		02-Jan-13	5.32	47.18	9.62	41.86
		04-Jan-13	7.35	47.58	7.97	40.23
		07-Jan-13	7.58	46.59	8.03	39.01
		08-Jan-13	5.88	45.55	9.57	39.67
		07-Feb-13	4.9	49.53	9.39	44.63
		08-Feb-13	4.71	47.9	9.92	43.19
		11-Feb-13	4.95	47.51	9.82	42.56
		13-Feb-13	5.66	48.02	9.16	42.36
		15-Feb-13	4.85	48.01	9.78	43.16

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Canton Trade L2	3903	18-Feb-13	7.24	48.05	7.94	40.81
		19-Feb-13	4.9	48.31	9.67	43.41
		20-Feb-13	5.06	47.82	9.67	42.76
		21-Feb-13	5.46	47.1	9.53	41.64
		22-Feb-13	5.77	46.85	9.35	41.08
		25-Feb-13	5.3	47.21	9.63	41.91
		26-Feb-13	5.32	47.11	9.63	41.79
		27-Feb-13	4.8	46.51	10.17	41.71
		28-Feb-13	5.04	45.57	10.21	40.53
		27-Mar-13	4.27	49.38	9.9	45.11
		28-Mar-13	4.81	47.65	9.9	42.84
		29-Mar-13	5	47.51	9.79	42.51
		02-Apr-13	4.99	46.9	9.94	41.91
		04-Apr-13	5.21	47.22	9.69	42.01
		05-Apr-13	4.75	47.19	10.05	42.44
		08-Apr-13	4.79	47.09	10.04	42.3
		10-Apr-13	4.78	46.84	10.11	42.06
		11-Apr-13	4.71	47.12	10.1	42.41
		15-Apr-13	5.92	43.4	10.05	37.48
		19-Apr-13	7.12	36.96	10.64	29.84
		22-Apr-13	5.11	48.11	9.56	43
		23-Apr-13	4.94	47.51	9.83	42.57
		25-Apr-13	4.9	47.17	9.94	42.27
		26-Apr-13	5.48	45.82	9.82	40.34
		29-Apr-13	4.49	48.48	9.95	43.99
		01-May-13	5	47.31	9.83	42.31
		03-May-13	6.61	40.91	10.1	34.3
		06-May-13	10.4	24.88	10.97	14.48
		07-May-13	10.09	25.4	11.09	15.31
		14-May-13	9.21	29.52	10.79	20.31
		15-May-13	9.09	29.05	10.99	19.96
		16-May-13	10.82	22.03	11.32	11.21
		17-May-13	11.03	21.85	11.2	10.82
		20-May-13	11.1	22.21	11.06	11.11
		22-May-13	10.84	22.84	11.12	12
		24-May-13	11.64	19.01	11.4	7.37
		28-May-13	11.11	24.12	10.61	13.01
		31-May-13	11.15	22.21	11.03	11.06
		04-Jun-13	13.01	13.01	11.77	0
	3904	25-Jul-12	14.35	14.38	10.55	0.03
	3905	13-Jul-12	5.02	38.88	9.15	33.86
		24-Jul-12	4.23	38.94	9.74	34.71
		14-Aug-12	4.24	38.93	9.74	34.69
		28-Aug-12	3.91	39.02	9.97	35.11
		13-Sep-12	4.44	38.63	9.66	34.19
		28-Sep-12	4.24	37.52	10.07	33.28
		11-Oct-12	4.34	37.96	9.89	33.62
		26-Oct-12	4.14	38.99	9.8	34.85
		12-Nov-12	4.14	38.64	9.88	34.5
		28-Nov-12	4.34	38.63	9.73	34.29
		02-Jan-13	4.54	38.56	9.6	34.02
		14-Jan-13	4.33	38.51	9.77	34.18
		30-Jan-13	3.94	38.46	10.08	34.52
		13-Feb-13	4.08	38.53	9.96	34.45
		27-Mar-13	4.11	38.39	9.97	34.28

Area	Well No	Guage Date	Depth to Product	Depth to Water	Potentiometric Elevation	Apparent Thickness
Canton Trade L2	3905	10-Apr-13	3.93	38.32	10.12	34.39
		23-Apr-13	4.23	38.14	9.93	33.91
		14-May-13	4.31	37.91	9.93	33.6
		31-May-13	4.4	37.79	9.88	33.39
		17-Jun-13	4.02	37.63	10.21	33.61
	3907	23-Jul-12	13.82	13.89	10.25	0.07

**Quarterly Report – Second Quarter 2013**  
**Warner Graham Property – Lower Zone**  
**ExxonMobil Baltimore Terminal**  
**Baltimore, Maryland 21224**

The Warner Graham parcel is located south of the former ExxonMobil Baltimore Terminal, west of South Haven Street. Monitoring well 2920 is the only well currently located on the parcel. There was no LNAPL recovery from the parcel during the quarter due to lack of recoverable LNAPL thickness in the well. Environmental activities completed during the past quarter and those planned for the following quarter are listed below.

**Activities Completed During Q2, 2013:**

- Quarterly gauging of well 2920.
- Completion of MDE technical meeting per Consent Decree requirement.

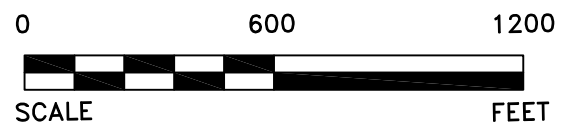
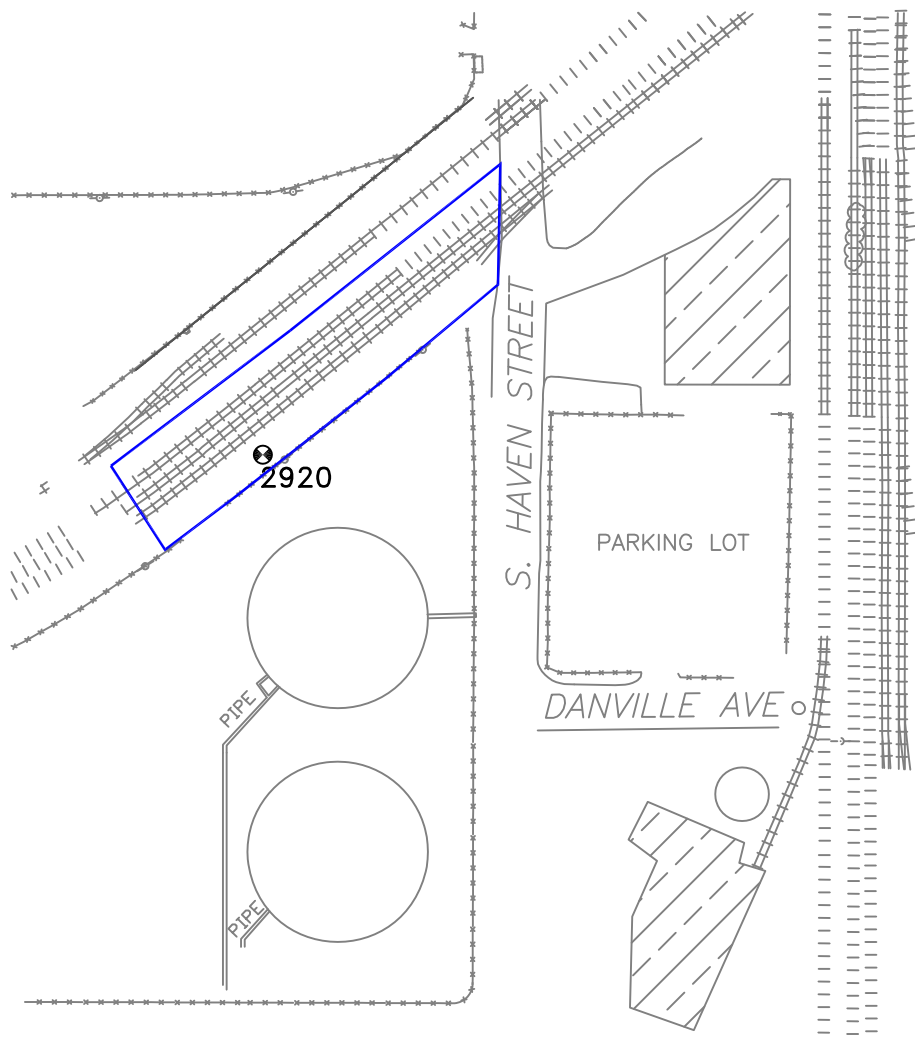
**Activities Scheduled for Completion During Q3, 2013:**

- Quarterly gauging of well 2920.
- Submission of request for abandonment of wells 2920 per existing Consent Decree LNAPL Recovery Optimization Procedures




**Attachments**

- Site Map
- Summary of Monitoring Well Gauging Data (Second Quarter 2012 – Second Quarter 2013)





LEGEND

-  DEEP GROUNDWATER MONITORING WELLS
-  EXISTING R.R. TRACKS
-  WARNER GRAHAM PROPERTY BOUNDARY

NOTE: WELL LOCATIONS ARE APPROXIMATE



SITE MAP  
WARNER GRAHAM PROPERTY  
BALTIMORE, MD 21224

# Quarterly Summary Sheet

## Lower Zone System Performance Optimization

### Warner Graham Property

Well Number	Date	Oil/Water Interface (DTW)	Depth to Product (DTP)	Product Thickness (Ft)	Oil/Water Interface (MSL)	A/P Contact (MSL)	A/P Contact (FTBTOC)	Recovery Rate (GPH)	Recovery Zone Thickness (Ft)
2920	06/18/13	15.56	15.05	0.51	10.00	-30.17	55.73	0.0	-40.17

\*\*- Consistent rate cannot be calculated due to difficulty in maintaining 1/2 GPH pumping rate  
 EST = Estimated Recovery rate

## Former ExxonMobil Baltimore Terminal Gauging Data

<b>Area</b>	<b>Well No</b>	<b>Gauge Date</b>	<b>Depth to Product</b>	<b>Depth to Water</b>	<b>Potentiometric Elevation</b>	<b>Apparent Thickness</b>
Warner Graham	2920	26-Sep-12	15.24	15.73	10.24	0.49
		07-Jan-13	15.83	16.33	9.65	0.50
		28-Mar-13	15.35	15.79	10.14	0.44
		18-Jun-13	15.05	15.56	10.43	0.51

## **APPENDIX I**

**TABLE 1  
SUMMARY OF SYSTEM PERFORMANCE DATA  
SECOND QUARTER 2013 AND CUMULATIVE TOTALS**

Terminal Area	Recovery Well Number	CURRENT QUARTER Product Recovered (Gallons)	CUMULATIVE TOTAL Product Recovered (Gallons)
Dock Area			
	TOTALS	0	5,466
Main Terminal Area			
	Hi Vac System	0	21,187
	UZ MPRT	0	9,012
	Spill Buddy/Bailing	0	9,845
	TOTALS	0	40,044
Toone Street			
	Spill Buddy	0	30,788
	TOTALS	0	30,788
14th Street West Area			
	Frac Discharge	---	
	Trench Sys	0	229
	Bailing	0	726
	TOTALS	0	955
Baltimore City Property (2)			
	Spill Buddy/Bailing	2	244
	TOTALS	2	244
Canton Railroad Property (2)			
	Spill Buddy/Bailing	0	146
	TOTALS	0	146
Canton Trade Property (2)			
	Spill Buddy/Bailing	0	42
	TOTALS	0	42
Lower Zone (1)			
	LZ MTA/Toone Sys (3)	51,800	3,700,570
	LZ CT/14th Sys (3)	44,000	1,103,577
	LZA Satellite Sys	0	287,390
	MPRT #1	0	239,971
	MPRT #2	0	220,821
	MPRT #3	0	131,697
	MPRT #4	0	113,561
	MPRT #5	0	141,928
	2920 (Warner Graham)	0	177
	TOTALS	95,800	5,939,692
<b>QUARTERLY TOTAL</b>		<b>95,802</b>	
<b>GRAND TOTAL (Includes Former Recovery Systems)</b>			<b>6,231,961</b>

(1) LNAPL recovered via continuously operating skimmer-only pumps.

(2) Cumulative totals for off-site properties include data from Q4 2005 through present only.

(3) Parcel amounts are approximated based on a percentage of total product recovered.








**Recovery Equipment Status**

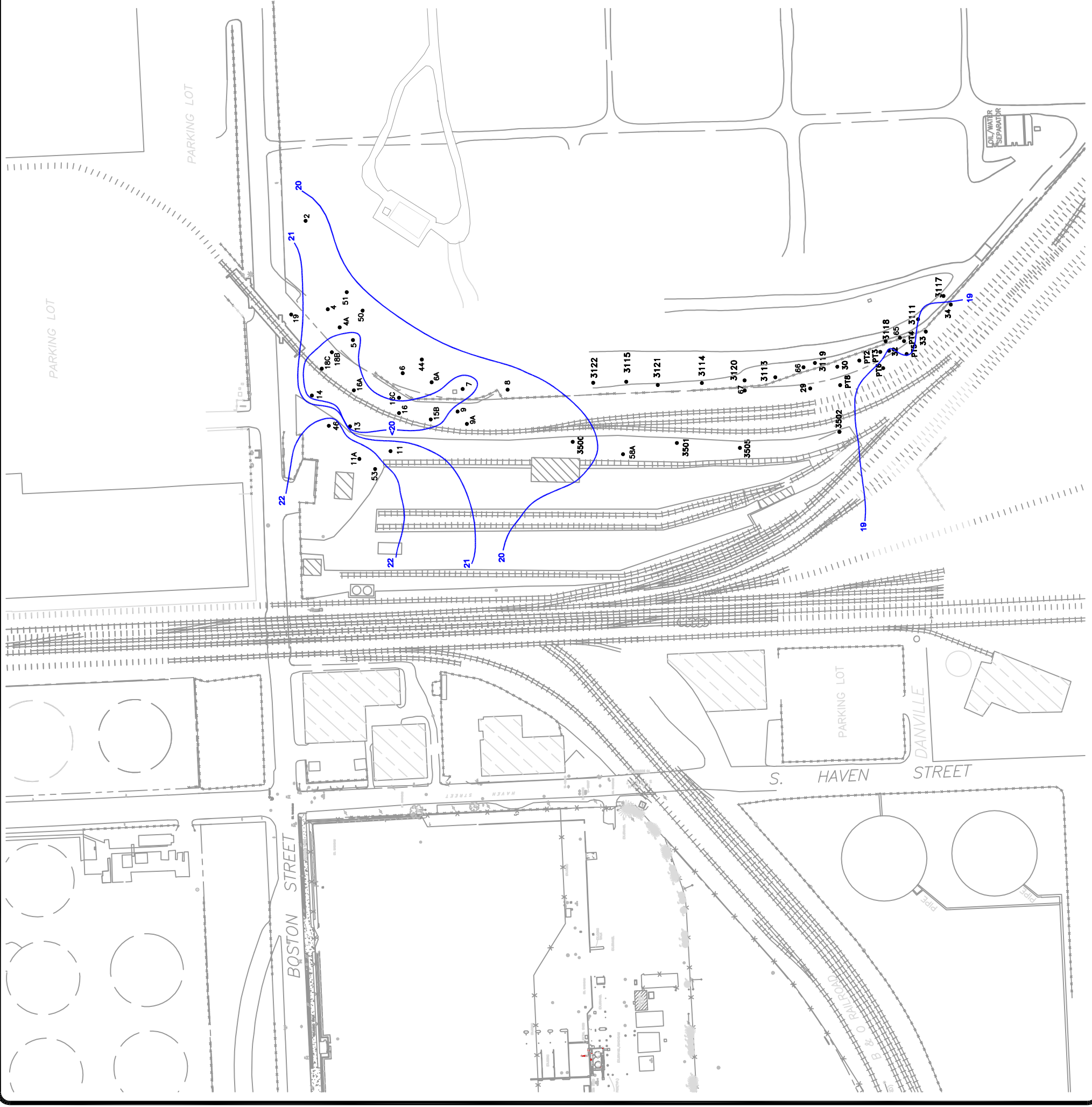
Lower Zone:

The LZ Toone/MTA system remains in normal operation. The LZ CT/14th System was started in November 2008 and has been in normal operation since startup. There was no recovery from well 2920 due to insufficient LNAPL.

## APPENDIX II

LEGEND:

-  FENCE LINE
-  RAILROAD TRACKS
-  OFFSITE BUILDING
-  EXISTING ABOVE GROUND STORAGE TANK
-  DEMOLISHED ABOVE GROUND STORAGE TANK
-  UPPER ZONE MONITORING WELLS
-  POTENTIOMETRIC GROUNDWATER SURFACE ELEVATION ISOPACH CONTOUR (FEET MSL)










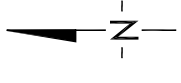
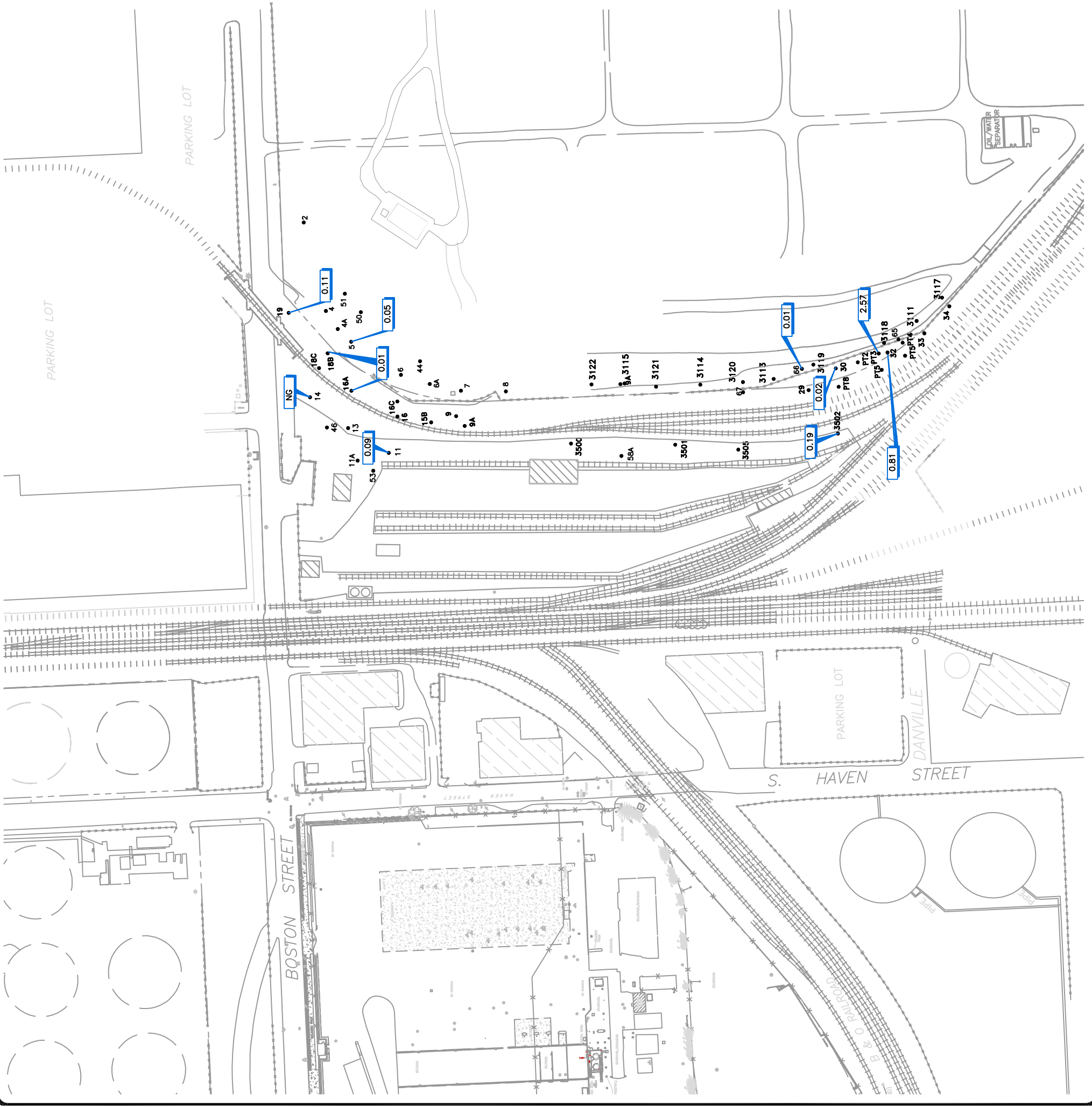
TITLE: POTENTIOMETRIC GROUNDWATER SURFACE ELEVATION CONTOUR MAP – UPPER ZONE AREA (JUNE 2013)


LOCATION: ExxonMobil Refining and Supply Company  
Baltimore Terminal – Baltimore, Maryland

<b>TETRA TECH</b>	CHECKED	DM	FIGURE:	1
	DRAFTED	SC		
	FILE	2013QTRLY1		
	DATE	7-16-13		

LEGEND:

-  FENCE LINE
-  RAILROAD TRACKS
-  OFFSITE BUILDING
-  EXISTING ABOVE GROUND STORAGE TANK
-  DEMOLISHED ABOVE GROUND STORAGE TANK
-  UPPER ZONE MONITORING WELLS
-  LNAPL THICKNESS IN MONITORING WELL (FEET)











<b>TITLE:</b> APPARENT LNAPL THICKNESS IN MONITORING WELL UPPER ZONE AREA (JUNE 2013)									
<b>LOCATION:</b> ExxonMobil Refining and Supply Company Baltimore Terminal - Baltimore, Maryland									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">CHECKED</td> <td style="font-size: 8px;">DM</td> </tr> <tr> <td style="font-size: 8px;">DRAFTED</td> <td style="font-size: 8px;">SC</td> </tr> <tr> <td style="font-size: 8px;">FILE</td> <td style="font-size: 8px;">2013QTRLY2</td> </tr> <tr> <td style="font-size: 8px;">DATE</td> <td style="font-size: 8px;">7-22-13</td> </tr> </table>	CHECKED	DM	DRAFTED	SC	FILE	2013QTRLY2	DATE	7-22-13
CHECKED	DM								
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FILE	2013QTRLY2								
DATE	7-22-13								
<b>FIGURE:</b> 2									



## APPENDIX III

LEGEND:

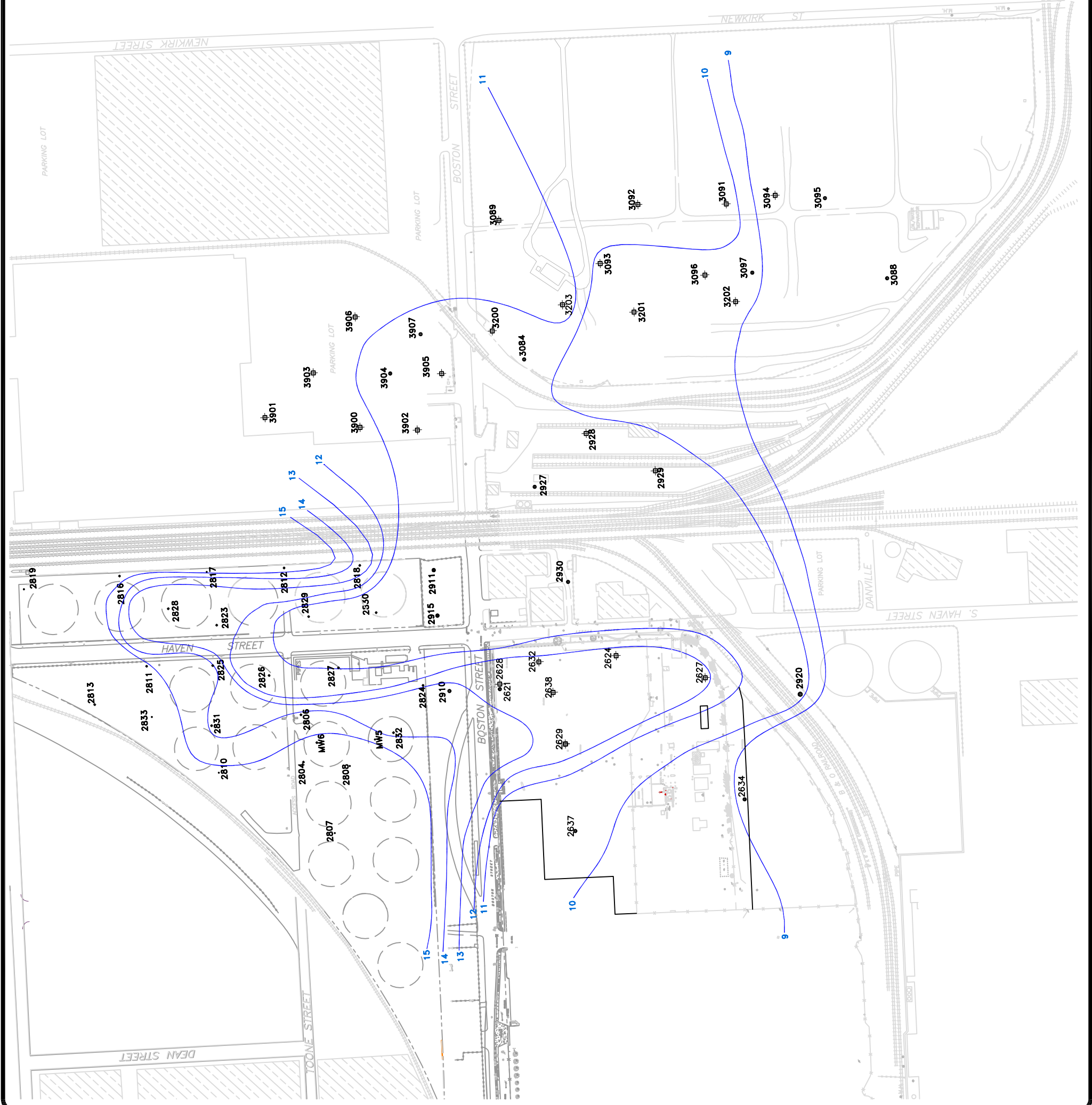
-  FENCE LINE
-  RAILROAD TRACKS
-  OFFSITE BUILDING
-  EXISTING ABOVE GROUND STORAGE TANK
-  DEMOLISHED ABOVE GROUND STORAGE TANK
-  2801
-  3089
-  POTENTIOMETRIC GROUNDWATER SURFACE ELEVATION ISOPACH CONTOUR (FEET MSL)

NOTES:

WELL 2628 IS DIRECTLY SCREENED AT SELECTED INTERVALS

THE FOLLOWING WELLS ARE PART OF THE MTA/TOONE STREET REMEDIATION SYSTEM:  
 2624, 2627, 2628, 2629, 2632, 2638, 2804, 2806, 2811, 2812, 2813, 2816, 2818, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, AND MW-6.

THE FOLLOWING WELLS ARE PART OF THE CANTON TRADE/14TH STREET REMEDIATION SYSTEM:  
 2928, 2929, 3089, 3091, 3092, 3093, 3094, 3096, 3200, 3201, 3202, 3203, 3900, 3901, 3902, 3903, AND 3905.



TITLE: POTENTIOMETRIC GROUNDWATER SURFACE ELEVATION CONTOUR MAP – LOWER ZONE AREA (JUNE 2013)

LOCATION: ExxonMobil Refining and Supply Company  
 Baltimore Terminal – Baltimore, Maryland

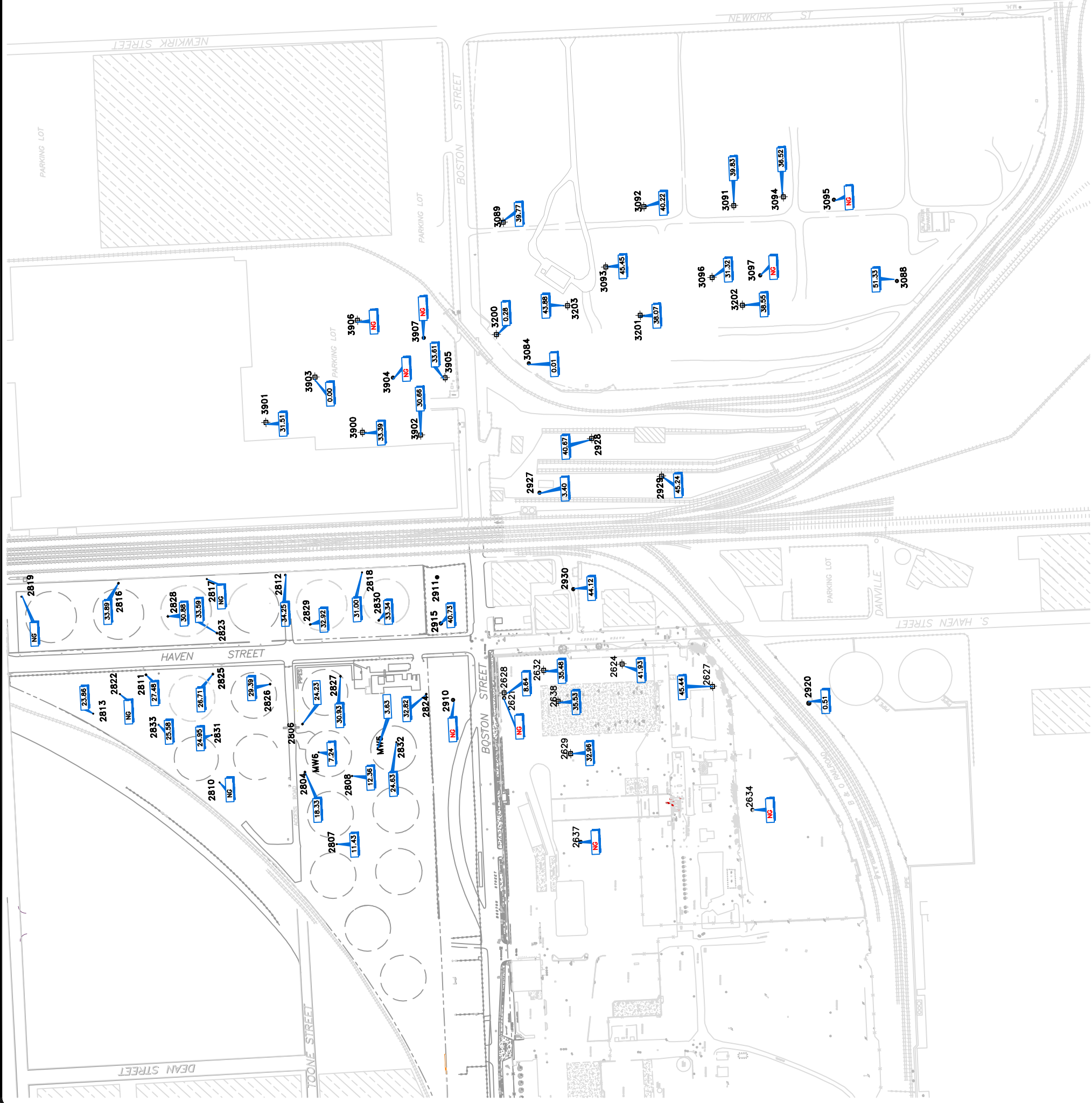
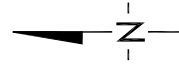


CHECKED	DM	FIGURE:
DRAFTED	SC	3
FILE	2013QTRLY3	
DATE	7-16-13	

LEGEND:

- ✕-✕-✕-✕-✕ FENCE LINE
- ▨ RAILROAD TRACKS
- ▭ OFFSITE BUILDING
- EXISTING ABOVE GROUND STORAGE TANK
- DEMOLISHED ABOVE GROUND STORAGE TANK
- 2801
- 3089
- LNAPL THICKNESS IN MONITORING WELL (FEET)

NOTES:  
WELL 2628 IS DIRECTLY SCREENED AT SELECTED INTERVALS  
THE FOLLOWING WELLS ARE PART OF THE MTA/TOONE STREET REMEDIATION SYSTEM: 2624, 2627, 2628, 2629, 2632, 2636, 2804, 2806, 2811, 2812, 2813, 2816, 2818, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, AND MW-6.  
THE FOLLOWING WELLS ARE PART OF THE CANTON TRADE/14TH STREET REMEDIATION SYSTEM: 2928, 2929, 3089, 3091, 3092, 3093, 3094, 3096, 3200, 3201, 3202, 3203, 3900, 3901, 3902, 3903, AND 3905.



TITLE: LNAPL THICKNESS IN MONITORING WELL LOWER ZONE AREA (JUNE 2013)

LOCATION: ExxonMobil Refining and Supply Company Baltimore Terminal - Baltimore, Maryland



TETRA TECH

CHECKED	DM	FIGURE:
DRAFTED	SC	4
FILE	2013QTRLY4	
DATE	7-22-2013	