Atlantic Richfield Company

Paul G. Johnson
Liability Manager

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August 3, 2022

Jessica LaClair
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

RE: Monthly Progress Report, July 2022
Former Anaconda Plant (a.k.a. Harbor at Hastings Site) Site No. 3-60-022
Hastings-On-Hudson, New York

Dear Ms. LaClair:

Enclosed is the July 2022 Monthly Progress Report for the Former Anaconda Plant (a.k.a. Harbor at Hastings Site), New York State Department of Environmental Conservation (NYSDEC) Site No. 3-60-022, Hastings-on-Hudson, New York. This progress report has been prepared in accordance with Section XI of the AMENDED ORDER ON CONSENT and ADMINISTRATIVE SETTLEMENT between Atlantic Richfield Company and NYSDEC, dated November 6, 2013. The time period covered is July 1, 2022, through July 31, 2022.

If you have any questions or comments on this submittal, please feel free to contact me at 630-731-4463.

Sincerely,

Paul G. Johnson
Liability Manager

Enclosure

cc: Village Manager Mary Beth Murphy, Hastings-On-Hudson
Mark Chertok, Hastings-On-Hudson
Karl Coplan, Pace/Riverkeeper
File

ecc: David Harrington, Director, Bureau D, NYSDEC DER
Jacquelyn Nealon, New York State Department of Health
Charlotte Bethoney, New York State Department of Health
Phoebe Gittlelson, NYSDEC, Office of General Counsel
Mayor Nicola Armacost, Hastings-On-Hudson
Trustee Morgan Fleisig, Hastings-On-Hudson
Village Manager Mary Beth Murphy, Hastings-On-Hudson
Nat Federici, P.E., Westchester County Department of Environmental Facilities
Rachel Noe, Westchester County
Jim Lucari, BP
Michael Daneker, Arnold & Porter
Martha Gopal, Sovereign Consulting Inc.

FORMER ANACONDA WIRE AND CABLE PLANT SITE
(a.k.a. HARBOR AT HASTINGS SITE) OU1
NYSDEC SITE 360022
MONTHLY PROGRESS REPORT 206

PREPARED BY: **Atlantic Richfield Company**
Paul Johnson

REPORTING PERIOD: **July 1, 2022 through July 31, 2022**

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1. PROGRESS MADE THIS REPORTING PERIOD:

- As agreed with NYSDEC, DNAPL gauging and recovery were not performed in July 2022 due to expected excessive heat throughout the month.
- Progress continued on these on-going design-related activities:
  - *Turbidity Control and Water Quality Monitoring Plan Matrix* and narrative summary. NYSDEC provided comments in late April; final draft in progress.
  - Development of shoreline concepts
  - Wetland design, including wave barrier
  - Old Marina / Kinnally Cove stability evaluation for dredging
  - Design team has engaged West Chester County Department of Environmental Facilities regarding underground utilities.
  - SPDES Permit Equivalent Application
  - Community Air Monitoring Plan
  - Community Environmental Response Plan
  - Other design elements
  - Biological Assessment / Not Likely to Adversely Affect Documentation and Essential Fish Habitat Reports (NMFS)
  - Nationwide Permit 38 Pre-Construction Notification
  - TSCA Risk-Based Disposal Action Application from USEPA; NYSDEC and USEPA TSCA met March 30th, 2022; USEPA TSCA requested revisions in email dated June 27th, 2022. Followup call with NYSDEC and USEPA TSCA held July 11th, 2022; revisions to application in progress and scheduling future calls to review and respond to revisions.

2. UNANTICIPATED PROBLEM AREAS AND RECOMMENDED SOLUTIONS

- None this reporting period.

3. PROBLEMS RESOLVED

- None this reporting period.

4. DELIVERABLES SUBMITTED / RECEIVED

- July 4th, 2022, Atlantic Richfield to NYSDEC: *Hastings June 2022 Monthly Progress Report*.

5. UPCOMING EVENTS / ACTIVITIES PLANNED

- Scheduling of subsequent gauging and recovery events will be dependent on the developing COVID-19 situation and AR will continue to communicate with NYSDEC regarding schedule. The tentative schedule is outlined below.
- The next three DNAPL gauging and recovery events are tentatively scheduled to occur the weeks of August 1st, 2022, September 6th, 2022, and October 3rd, 2022.
- Continue the Water Tower LNAPL IRM activities, as allowable, in accordance with the IRM Work Plan (Fluor Daniel GTI, December 1997), Fluor Daniel GTI correspondence to the NYSDEC dated May 18, 1998 and Atlantic Richfield correspondence with the NYSDEC on September 2, 2010. The upcoming LNAPL IRM event is tentatively scheduled to occur the week of August 1st, 2022 in accordance with the schedule modification request, from monthly to quarterly, sent by Atlantic Richfield to NYSDEC on June 4, 2012, and the approval letter received from NYSDEC dated April 2, 2013.

6. KEY STAFFING

- Sovereign Consulting Inc.
- Parsons Environment and Infrastructure Group, Inc. (OM&M and Security)

7. PERCENTAGE COMPLETE

- DNAPL gauging and recovery – ongoing
- LNAPL IRM – ongoing

8. DATA

- Final data not generated during this reporting period.

9. CITIZEN PARTICIPATION ACTIVITIES

- None this reporting period.

LIST OF ACRONYMS

Acronym	*Description*
NYSDEC	New York State Department of Environmental Conservation
LNAPL	Light Non-Aqueous Phase Liquid
DNAPL	Dense Non-Aqueous Phase Liquid
OU	Operable Unit
IRM	Interim Remedial Measure
O&M	Operations and Maintenance

LIST OF REFERENCES

FLUOR Daniel GTI, 1997. *Draft Interim Remedial Measure Work Plan – Separate Phase Liquid Recovery.* December.

TABLE II
SUMMARY OF DNAPL MEASUREMENTS
NYSDEC #3-60-022
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
MW-12	Cumulative 10/9/2006 - 7/29/2010	-	-	-	5.0	-	-	-
	TOTAL VOLUME RECOVERED TO DATE FROM MW-12 (GALLONS)				***5.0***			
HAOW-12A	Cumulative 3/2/2009 - 12/7/2020	-	-	-	49.7	-	DMT[4]	-
	1/4/2021	42.7	0.9	-	-	28	DMT[4]	-
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	42.6	1.0	-	-	56	DMT[4]	-
	4/5/2021	42.4	1.2	-	-	35	DMT[4]	-
	5/3/2021	42.6	1.0	-	-	28	DMT[4]	-
	6/7/2021	42.6	1.0	-	-	35	DMT[4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	42.6	1.0	-	-	70	DMT[4]	-
	9/7/2021	42.9	0.7	-	-	22	DMT[4]	-
	10/11/2021	42.8	0.8	-	-	34	DMT[4]	-
	11/1/2021	43.2	0.4	-	-	21	DMT[4]	-
	12/6/2021	43.1	0.5	-	-	35	DMT[4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/7/2022	43.0	0.6	-	-	63	DMT[4]	-
	3/7/2022	43.2	0.4	-	-	28	DMT[4]	-
	4/4/2022	43.1	0.5	-	-	28	DMT[4]	-
	5/2/2022	43.2	0.4	-	-	28	DMT[4]	-
	6/7/2022	43.2	0.4	-	-	36	DMT[4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HAOW-12A (GALLONS)				***49.7***			
HARW-1	Cumulative 9/29/2010 - 12/7/2020	-	-	-	0.0	-	-	-
	1/4/2021	No product detected	0.0	-	-	28	DMT[4]	-
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	No product detected	0.0	-	-	56	DMT[4]	-
	4/5/2021	No product detected	0.0	-	-	35	DMT[4]	-
	5/3/2021	No product detected	0.0	-	-	28	DMT[4]	-
	6/7/2021	No product detected	0.0	-	-	35	DMT[4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	No product detected	0.0	-	-	70	DMT[4]	-
	9/7/2021	No product detected	0.0	-	-	22	DMT[4]	-
	10/11/2021	No product detected	0.0	-	-	34	DMT[4]	-
	11/1/2021	No product detected	0.0	-	-	21	DMT[4]	-
	12/6/2021	No product detected	0.0	-	-	35	DMT[4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/7/2022	No product detected	0.0	-	-	63	DMT[4]	-
	3/7/2022	No product detected	0.0	-	-	28	DMT[4]	-
	4/4/2022	No product detected	0.0	-	-	28	DMT[4]	-
	5/2/2022	No product detected	0.0	-	-	28	DMT[4]	-
	6/7/2022	No product detected	0.0	-	-	36	DMT[4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-1 (GALLONS)				***0.0***			

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HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
HARW-2	Cumulative 9/29/2010 - 12/7/2020	-	-	-	862.6	-	-	-
	1/4/2021	38.0	2.0	0.08	5	28	DMT [4]	double diaphragm pump
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	39.0	1.0	-	-	56	DMT [4]	double diaphragm pump
	4/5/2021	38.3	1.8	-	-	35	DMT [4]	-
	5/3/2021	37.3	2.7	0.08	6.7	28	DMT [4]	double diaphragm pump
	6/7/2021	39.2	0.8	-	-	35	DMT [4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	38.3	1.8	-	-	70	DMT [4]	-
	9/7/2021	37.5	2.5	0.33	5.7	22	DMT [4]	double diaphragm pump
	10/11/2021	39.0	1.0	-	-	34	DMT [4]	-
	11/1/2021	38.8	1.3	-	-	21	DMT [4]	-
	12/6/2021	38.5	1.5	-	-	35	DMT [4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/8/2022	37.8	2.3	0.33	5	64	DMT [4]	double diaphragm pump
	3/7/2022	39.0	1.0	-	-	27	DMT [4]	-
	4/4/2022	38.3	1.8	-	-	28	DMT [4]	-
	5/3/2022	38.0	2.0	0.08	5	29	DMT [4]	double diaphragm pump
	6/7/2022	39.3	0.8	-	-	35	DMT [4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-2 (GALLONS)				***890.0***			
HARW-3	Cumulative 10/14/2010 - 12/7/2020	-	-	-	28.6	-	-	-
	1/4/2021	38.5	0.5	-	-	28	DMT [4]	-
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	38.5	0.5	-	-	56	DMT [4]	-
	4/5/2021	38.3	0.8	-	-	35	DMT [4]	-
	5/3/2021	38.5	0.5	-	-	28	DMT [4]	-
	6/7/2021	38.4	0.6	-	-	35	DMT [4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	38.4	0.6	-	-	70	DMT [4]	-
	9/7/2021	38.5	0.5	-	-	22	DMT [4]	-
	10/11/2021	38.3	0.7	-	-	34	DMT [4]	-
	11/1/2021	38.4	0.6	-	-	21	DMT [4]	-
	12/6/2021	38.3	0.8	-	-	35	DMT [4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/7/2022	38.4	0.6	-	-	63	DMT [4]	-
	3/7/2022	38.4	0.6	-	-	28	DMT [4]	-
	4/4/2022	38.5	0.5	-	-	28	DMT [4]	-
	5/2/2022	38.8	0.2	-	-	28	DMT [4]	-
	6/7/2022	38.4	0.6	-	-	36	DMT [4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-3 (GALLONS)				***28.6***			

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HARW-4	Cumulative 10/14/2010 - 12/7/2020	-	-	-	219.0	-	-	-
	1/4/2021	38.1	0.9	-	-	28	DMT [4]	-
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	37.8	1.2	-	-	56	DMT [4]	-
	4/5/2021	38.0	1.0	-	-	35	DMT [4]	-
	5/3/2021	37.8	1.2	-	-	28	DMT [4]	-
	6/7/2021	38.0	1.0	-	-	35	DMT [4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	37.8	1.2	-	-	70	DMT [4]	-
	9/7/2021	38.0	1.0	-	-	22	DMT [4]	-
	10/11/2021	37.8	1.2	-	-	34	DMT [4]	-
	11/1/2021	37.6	1.4	-	-	21	DMT [4]	-
	12/6/2021	37.4	1.6	-	-	35	DMT [4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/7/2022	38.2	0.8	-	-	63	DMT [4]	-
	3/7/2022	37.6	1.4	-	-	28	DMT [4]	-
	4/4/2022	37.5	1.5	-	-	28	DMT [4]	-
	5/2/2022	37.8	1.3	-	-	28	DMT [4]	-
	6/7/2022	37.3	1.8	-	-	36	DMT [4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-4 (GALLONS)				***219.0***			
HARW-5	Cumulative 7/18/2011 - 12/7/2020	-	-	-	1191.5	-	-	-
	1/4/2021	38.3	2.0	0.08	5.0	28	DMT [4]	double diaphragm pump
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	36.7	3.6	0.31	9.4	56	DMT [4]	double diaphragm pump
	4/5/2021	37.1	3.2	0.04	8.2	35	DMT [4]	double diaphragm pump
	5/3/2021	38.7	1.6	-	-	28	DMT [4]	-
	6/7/2021	35.9	4.4	0.00	11.5	35	DMT [4]	double diaphragm pump
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	35.8	4.5	0.00	11.7	70	DMT [4]	double diaphragm pump
	9/7/2021	38.8	1.5	-	-	22	DMT [4]	-
	10/11/2021	36.5	3.8	0.17	9.6	34	DMT [4]	double diaphragm pump
	11/1/2021	38.3	2.0	0.00	5.2	21	DMT [4]	double diaphragm pump
	12/6/2021	38.3	2.0	0.08	5.0	35	DMT [4]	double diaphragm pump
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/8/2022	37.3	3.0	0.17	7.4	64	DMT [4]	double diaphragm pump
	3/7/2022	38.6	1.8	-	-	27	DMT [4]	double diaphragm pump
	4/4/2022	36.8	3.5	0.08	8.9	28	DMT [4]	double diaphragm pump
	5/2/2022	38.7	1.6	-	-	28	DMT [4]	-
	6/7/2022	36.7	3.6	0.17	8.9	36	DMT [4]	double diaphragm pump
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-5 (GALLONS)				***1282.3***			

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1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
HARW-6	Cumulative 7/19/2011 - 12/7/2020	-	-	-	0.0	-	-	-
	1/4/2021	40.1	0.7	-	-	28	DMT [4]	-
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	40.1	0.7	-	-	56	DMT [4]	-
	4/5/2021	40.1	0.8	-	-	35	DMT [4]	-
	5/3/2021	40.6	0.2	-	-	28	DMT [4]	-
	6/7/2021	40.6	0.3	-	-	35	DMT [4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	40.3	0.5	-	-	70	DMT [4]	-
	9/7/2021	40.5	0.3	-	-	22	DMT [4]	-
	10/11/2021	40.3	0.5	-	-	34	DMT [4]	-
	11/1/2021	40.2	0.6	-	-	21	DMT [4]	-
	12/6/2021	40.3	0.5	-	-	35	DMT [4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/7/2022	40.2	0.6	-	-	63	DMT [4]	-
	3/7/2022	40.2	0.6	-	-	28	DMT [4]	-
	4/4/2022	40.1	0.7	-	-	28	DMT [4]	-
	5/2/2022	40.1	0.7	-	-	28	DMT [4]	-
	6/7/2022	40.6	0.3	-	-	36	DMT [4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-6 (GALLONS)				***0.0***			
HARW-7	Cumulative 7/18/2011 - 12/7/2020	-	-	-	582.0	-	-	-
	1/4/2021	40.8	1.2	-	-	28	DMT [4]	-
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	40.0	2.0	0.0	5.2	56	DMT [4]	double diaphragm pump
	4/5/2021	41.3	0.8	-	-	35	DMT [4]	-
	5/3/2021	41.2	0.8	-	-	28	DMT [4]	-
	6/7/2021	40.8	1.3	-	-	35	DMT [4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	39.5	2.5	0.2	6.1	70	DMT [4]	double diaphragm pump
	9/7/2021	41.8	0.3	-	-	22	DMT [4]	-
	10/11/2021	41.5	0.5	-	-	34	DMT [4]	-
	11/1/2021	41.1	0.9	-	-	21	DMT [4]	-
	12/6/2021	40.6	1.4	-	-	35	DMT [4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/7/2022	40.2	1.8	-	-	63	DMT [4]	-
	3/7/2022	39.6	2.4	0.1	6.1	28	DMT [4]	double diaphragm pump
	4/4/2022	41.7	0.3	-	-	28	DMT [4]	-
	5/2/2022	41.4	0.6	-	-	28	DMT [4]	-
	6/7/2022	40.9	1.1	-	-	36	DMT [4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-7 (GALLONS)				***599.4***			

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NYSDEC #3-60-022
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
HARW-8	Cumulative 7/19/2011 - 12/7/2020	-	-	-	36.1	-	-	-
	1/4/2021	41.8	1.2	-	-	28	DMT [4]	-
	2/1/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	3/1/2021	41.8	1.3	-	-	56	DMT [4]	-
	4/5/2021	41.4	1.6	-	-	35	DMT [4]	-
	5/3/2021	41.0	2.0	0.0	5.2	28	DMT [4]	double diaphragm pump
	6/7/2021	42.8	0.2	-	-	35	DMT [4]	-
	7/5/2021	DNAPL pumping not completed due to adverse weather conditions					-	-
	8/16/2021	42.5	0.5	-	-	70	DMT [4]	-
	9/7/2021	42.5	0.5	-	-	22	DMT [4]	-
	10/11/2021	42.3	0.7	-	-	34	DMT [4]	-
	11/1/2021	42.2	0.8	-	-	21	DMT [4]	-
	12/6/2021	42.2	0.8	-	-	35	DMT [4]	-
	1/3/2022	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	2/7/2022	42.2	0.8	-	-	63	DMT [4]	-
	3/7/2022	41.9	1.1	-	-	28	DMT [4]	-
	4/4/2022	41.8	1.3	-	-	28	DMT [4]	-
	5/2/2022	41.7	1.3	-	-	28	DMT [4]	-
	6/7/2022	41.7	1.3	-	-	36	DMT [4]	-
	7/4/2022	DNAPL pumping not completed due to adverse weather conditions					-	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-8 (GALLONS)				***41.3***			

TOTAL VOLUME RECOVERED TO DATE FROM ALL WELLS (GALLONS) ***3115.3***

Notes:

MW-12
Depth to Top of Screen: 33 ft
Depth to Bottom: 36 ft

HARW-1
Depth to Top of Screen: 24 ft
Depth to Bottom: 42 ft

HARW-5
Angle from Vertical: 23.5º
Vertical Depth to Top of Screen: 27 ft
Vertical Depth to Bottom: 40.3 ft

HAOW-12A
Depth to Top of Screen: 28.6 ft
Depth to Bottom: 43.6 ft

HARW-2
Depth to Top of Screen: 26 ft
Depth to Bottom: 40 ft

HARW-6
Angle from Vertical: 14º
Vertical Depth to Top of Screen: 26.7 ft
Vertical Depth to Bottom: 40.8 ft

HARW-3
Angle from Vertical: 16.5º
Vertical Depth to Top of Screen: 25.4 ft
Vertical Depth to Bottom: 39 ft

HARW-7
Depth to Top of Screen: 27.5 ft
Depth to Bottom: 42 ft

HARW-4
Angle from Vertical: 24.5º
Vertical Depth to Top of Screen: 28.7 ft
Vertical Depth to Bottom: 41 ft

HARW-8
Depth to Top of Screen: 28.5 ft
Depth to Bottom: 43 ft

For historical reference to past DNAPL measurement events prior to January 2017, please refer to the January 2018 monthly report submitted to NYSDEC on 5 February 2018.

DMT = DNAPL Measurement Tool, consisting of a copper tubing handle, a spacer section to prevent the probe from contacting the sides of the well riser, and an all-thread rod probe to extend into the DNAPL.

[1] Reserved

[2] Reserved

[3] Volume of product recovered by downwell pump is estimated by approximating the volume discharged to the drum and additional product in tubing and on pump.
Volume of product recovered by bailer is estimated using the bailer volume and number of times bailed.
Volume of product recovered by double diaphragm and positive displacement piston pumps are estimated by approximating the volume discharged to the drum or by using the pre- and post-pumping apparent height of product and the well dimensions (8" diameter well).

[4] All depth and thickness values for HARW-3, HARW-4 HARW-5 and HARW-6 are provided as vertical equivalents of the field measurements based on the angle of the installed well.