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February 10, 2021

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

Subject: **Interim Remedial Measures (IRM)**
Separate Phase Liquid Recovery Status
Harbor At Hastings Site
1 River Street, Hastings-On-Hudson, New York
NYSDEC No. 3-60-022

Dear Ms. LaClair,

This letter presents the status report for the implementation of the *Harbor at Hastings Interim Remedial Measure Workplan - Separate Phase Liquid Recovery, Fluor Daniel GTI, December 1997* (IRM Workplan) as amended. The Interim Remedial Measure (IRM) activities are being performed to recover Light Non Aqueous Phase Liquids (LNAPL) from the water table for the above referenced site. This LNAPL Recovery Status Report was developed according to the provisions of the IRM Workplan and subsequent modifications presented to the New York State Department of Environmental Conservation (NYSDEC), in correspondence dated May 18, 1998.

The objective of this correspondence is to report the status of recovered LNAPL during the period between January 2020 and December 2020. To date, 30 previous LNAPL recovery status reports have been presented to the NYSDEC.

BACKGROUND

During the 1996 Remedial Investigation activities, two piezometers (TP-8 and TP-24) were installed that confirmed the presence of LNAPL in the area south of former Building 57 adjacent to the water tower.

As an IRM, a total of eighteen recovery wells (RW-1 through RW-18) were installed in 1998 adjacent to the water tower to monitor and recover LNAPL. Well locations are shown on **Figure 1**.

A storage-type passive recovery device and absorbent socks have historically been used to recover LNAPL from the recovery wells. Since November 2006, absorbent socks have been used exclusively to remove LNAPL from the recovery wells. Absorbent socks are hydrophobic-oleophilic and are suspended in the well at the product-water interface. Socks are replaced once the saturation limit appears to be met.

Between November 2006 and September 2010, site conditions permitting, LNAPL monitoring was completed on a weekly basis. A reduction in monitoring and recovery frequency to once per six weeks was approved by NYSDEC in September 2010 and then to quarterly in April 2013.

Since the recovery well network was installed, several locations (RW-1, RW-2, RW-6, and RW-18) near the Hudson River have become inaccessible due to erosion of the shoreline and have been removed from the program due to unsafe conditions.

RW-3 was decommissioned along with 45 other on-site monitoring wells as part of a monitoring well decommissioning effort conducted in October 2016. The decommissioning was approved by NYSDEC in an electronic mail dated September 23, 2016, and was reported to NYSDEC in the *Monitoring Well Abandonment Report* dated December 13, 2016. The monitoring wells were abandoned following the *NYSDEC CP-43 Groundwater Monitoring Well Decommissioning Policy*. Note, based on a review of monitoring records from the first quarter of 2009 to the present, LNAPL has not been detected in RW-3 (Four (4) monthly detections of LNAPL in RW-3 in 2011 were previously reported, but the measurements were later determined to have been collected from a nearby well).

OPERATION, MONITORING AND MAINTENANCE

Based on health and safety concerns and state lockdowns due to the COVID-19 pandemic, LNAPL gauging and recovery activities were postponed in April, May and June of 2020. As a result, an additional LNAPL event was conducted in August 2020 for a total of four events in 2020.

During this reporting period, the maximum thickness of LNAPL (**0.58 feet**) was recorded at RW-8 on January 13, 2020. Depth to LNAPL and water level measurements for this reporting period are summarized in **Table 1.**

Waste generated during LNAPL monitoring and recovery activities (used absorbent materials and used personal protective equipment [PPE]) is stored in drums located in the drum storage area. Waste in this area is labeled, managed, and disposed in compliance with local, state and federal regulations.

SUMMARY OF LNAPL RECOVERY

During this reporting period, approximately **3.84** gallons of LNAPL were recovered via the absorbent socks. The total volume of LNAPL recovered via the absorbent socks and storage-type passive recovery device (prior to its removal in January 2007) is approximately **423.18** gallons and **288** gallons, respectively. The total volume of LNAPL recovered through the end of this reporting period (December 2020) via both recovery methods, is estimated at **711.18** gallons. The combined total volume of LNAPL recovered from wells within the monitoring network during this reporting period is summarized in **Table 2.**

If you have any questions or comments regarding the information provided, please contact me.

Sincerely,

Paul G. Johnson, P.G.
Liability Manager
Atlantic Richfield Co., a BP Affiliated Company

ecc: Susan Edwards, New York State Department of Environmental Conservation
M. Gopal, Sovereign Consulting Inc.

Attachments: Figure 1 - Recovery Well Locations
Table 1 - Water Tower IRM Monitoring Log
Table 2 - Water Tower IRM Estimated LNAPL Volume Recovery Log

TAX MAP LOT LINE

PIPE

ROCKS

RW-01 RW-02 RW-06

RW-18

RW-11 RW-16

RW-07

TP-24

RW-03

WATER TOWER

FORMER BLDG #57

RW-17

RW-04

RW-08

RW-05

RW-09

RW-13

RW-14

RW-12

RW-10

RW-15

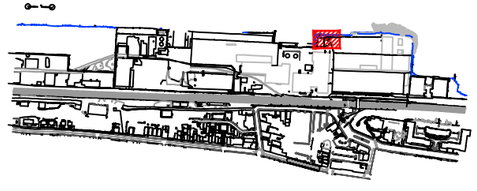
RW

LEGEND:

- PROPERTY LINE
- RAIL ROAD
- EXISTING STRUCTURES
- FORMER STRUCTURES
- FENCE
- RETAINING WALL
- MEAN LOW WATER
- MEAN HIGH WATER
- MONITORING WELL LOCATION
- HISTORIC PIEZOMETER
- DECOMMISSIONED MONITORING WELL (OCTOBER 2016)

NOTES:

1. BASE PLAN PROVIDED BY BOSWELL ENGINEERING DRAWING NO. 04-209-MW (01/27/2006).
2. HISTORICAL SURVEY INFORMATION PROVIDED BY PARSONS IN JULY 2005.
3. MEAN HIGH AND MEAN LOW WATER ARE EL. +2.2 AND EL. -2.0, BASED ON HISTORICAL SITE REPORTS. THE MEAN HIGH LINE IS ESTIMATED AT ELEVATION +2.2 FEET. MEAN LOW IS SHOWN AT ELEVATION -1.0 FEET, BUT IS UNDERSTOOD TO BE AT APPROXIMATELY ELEVATION -2.0 FEET.
4. RW-01, RW-02, RW-06 AND RW-18 ARE INACCESSIBLE DUE TO SHORELINE EROSION.



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SCALE IN FEET

Sovereign Consulting Inc.
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(609) 259-8200 Fax (609) 259-8288

Project No. File: Jan20_LNAPL_MWs.dwg Date: 01/08/2020

FIGURE 1
LNAPL
MONITORING WELL LOCATIONS

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

FILE: Pointmap: X:\SOVEREGN\HastingsOnHudson\Drawings\Jan2020\Jan20_LNAPL_MWs.dwg

Table 1
Harbor at Hastings Site
Water Tower IRM Monitoring Log
January 2020 to December 2020

Location	January 13, 2020 Monitoring Time: 12:05 PM High Tide 11:33 AM			2nd Quarter 2020 No Data: COVID-19 Work Stoppage			July 6, 2020 Monitoring Time: 9:10 AM Low Tide 5:59 AM High Tide 11:50 AM			August 3, 2020 Monitoring Time: 08:00 AM High Tide 9:53 AM			October 6, 2020 Monitoring Time: 2:30 PM High Tide 12:41 PM		
	DTW	DTP	PT	DTW	DTP	PT	DTW	DTP	PT	DTW	DTP	PT	DTW	DTP	PT
RW-1[2]	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA
RW-2[2]	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA
RW-3[3]	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA
RW-4	2.04	2.01	0.03	--	--	--	2.42	Sheen	0.00	2.04	ND	NA	2.18	ND	NA
RW-5	5.90	ND	NA	--	--	--	6.44	ND	NA	6.31	ND	NA	5.81	ND	NA
RW-6[2]	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA
RW-7	2.95	ND	NA	--	--	--	2.42	ND	NA	2.38	ND	NA	2.85	ND	NA
RW-8	6.25	5.67	**0.58**	--	--	--	6.06	5.81	0.25	6.28	5.77	0.51	5.79	5.60	0.19
RW-9	5.7	ND	NA	--	--	--	5.86	ND	NA	5.82	ND	NA	5.67	ND	NA
RW-10	5.36	ND	NA	--	--	--	5.33	ND	NA	5.32	ND	NA	5.17	ND	NA
RW-11	1.74	ND	NA	--	--	--	1.96	ND	NA	1.85	ND	NA	1.82	ND	NA
RW-12	2.51	ND	NA	--	--	--	2.71	ND	NA	2.41	ND	NA	2.55	ND	NA
RW-13	5.46	ND	NA	--	--	--	5.55	ND	NA	5.20	ND	NA	5.31	ND	NA
RW-14	1.9	ND	NA	--	--	--	3.14	ND	NA	2.30	ND	NA	2.45	ND	NA
RW-15	2.64	ND	NA	--	--	--	2.22	ND	NA	NG	NA	NA	2.45	ND	NA
RW-16	1.76	ND	NA	--	--	--	2.01	ND	NA	2.10	ND	NA	2.00	ND	NA
RW-17	6.04	ND	NA	--	--	--	6.03	ND	NA	5.94	ND	NA	5.77	ND	NA
RW-18[1]	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA	NG	NA	NA

NOTES:

-- = No LNAPL recovery in the 2nd Quarter of 2020 due to the COVID-19 Pandemic.

NA = Not applicable

ND = Not Detected

NG = Not gauged, well inaccessible

DTW = Depth to Water (Feet)

DTP = Depth to Product (Feet)

PT = Product thickness (Feet)

0.58 Maximum Thickness recorded

Note: Access to the LNAPL area can be limited during the winter months due to weather conditions (ice and snow). Access is assessed on a quarterly basis and LNAPL monitoring is conducted as permissible.

[1] : Removed from the monitoring program since April 3, 2002 due to inaccessibility

[2] : Removed from the monitoring program since August 28, 2009 due to inaccessibility

[3] : Decommissioned October 18, 2016 as parf of a larger monitoring well decommissioning effort approved by NYSDEC.

Tide information from Tarrytown, New York station.

Table 2
Harbor at Hastings Site
Water Tower IRM Estimated LNAPL Volume Recovery Log
January 2020 to December 2020

	13-Jan-20	2nd Quarter	6-Jul-20	3-Aug-20	6-Oct-20
Location	**Volume (gal)**	**Volume (gal)**	**Volume (gal)**	**Volume (gal)**	**Volume (gal)**
RW-1	NA	--	NA	NA	NA
RW-2	NA	--	NA	NA	NA
RW-3	NA	--	NA	NA	NA
RW-4	0.32	--	0.250	NA	NA
RW-5	NA	--	NA	0.292	NA
RW-6	NA	--	NA	NA	NA
RW-7	NA	--	NA	NA	NA
RW-8	0.42	--	0.437	0.353	0.376
RW-9	NA	--	NA	NA	NA
RW-10	NA	--	NA	NA	NA
RW-11	NA	--	NA	NA	NA
RW-12	NA	--	NA	NA	NA
RW-13	NA	--	NA	NA	NA
RW-14	NA	--	NA	NA	NA
RW-15	NA	--	NA	NA	NA
RW-16	0.38	--	NA	0.248	NA
RW-17	0.28	--	NA	0.175	0.295
RW-18	NA	--	NA	NA	NA

Total Volume 2020 (gal):	**3.84**

NOTES:

NA = Not applicable

-- = No LNAPL recovery in the 2nd Quarter of 2020 due to the COVID-19 Pandemic.

Note: Access to the LNAPL area can be limited during the winter months due to weather conditions (ice and snow). Access is assessed on a quarterly basis and LNAPL monitoring is conducted as permissible.