November 15, 2022 Project No. 19119232

Ms. Maureen Hatfield
Texas Commission on Environmental Quality
MC-127
VCP-CA Section, Team 1, Remediation Division
P.O. Box 13087
Austin, Texas 78711-3087

Re: **MONTHLY STATUS UPDATE – ENGLEWOOD INTERMODAL YARD – NAPL COLLECTION SYSTEM/CONCRETE CAP REPAIRS**
UNION PACIFIC RAILROAD HOUSTON WOOD PRESERVING WORKS FACILITY
4910 LIBERTY ROAD FACILITY, HOUSTON, TEXAS
POST-CLOSURE CARE PERMIT NO. HW-50343; INDUSTRIAL SWR NO. 31547

Dear Ms. Hatfield:

Golder Associates USA Inc. (Golder), a member of WSP, on behalf of Union Pacific Railroad Company (UPRR), is pleased to provide this monthly status update for October 2022 for inspections conducted at the Englewood Intermodal Yard concrete cap area within the UPRR Houston Wood Preserving Works Facility (the Site). Monthly status updates were requested by the Texas Commission on Environmental Quality (TCEQ) in a letter dated March 20, 2018.

A non-aqueous phase liquid (NAPL) Collection System was installed in the Englewood Intermodal Yard in January 2019 to address the tar-like substance seeps within parking stalls B100 to B109 (for container trailers). The following is a summary of the observations from the weekly inspections of the NAPL Collection System and Englewood Intermodal Yard concrete pavement near the collection system for October 2022 (photographs from the weekly inspections are provided in Attachment A):

- Water levels in NAPL Collection System Sump 1 (B099/B100 stalls), Sump 2 (B103/B104 stalls), and Sump 3 (B107/B108 stalls) were measured at 8 inches, 33 inches and 33 inches, respectively during the inspection on October 5, 2022. Water levels remained near those levels until the sumps were pumped out on October 19, 2022. UPRR remediation contractor OMI Environmental Solutions (OMI) removed approximately 4,700 gallons of water from the sumps for disposal at Delta Water Processing in Houston, TX. Immediately following the pump down event, freeboard levels in Sumps 1, 2, and 3 were measured at 48 inches, 48 inches and 48 inches respectively (Photo Nos. 20-23). By the October 26, 2022 inspection, the water level in Sump 1 had increased to 6 inches from the top of the sump (Photo No. 29) and the water level in Sumps 2 and 3 had increased slightly to 46 inches and 45 inches, respectively (Photo Nos. 30 and 31) from the top of the sumps. The water in the sumps was observed as being brown in color. A sheen was observed in Sumps 1 and 3 on October 5, 2022 (Photo Nos. 6 and 8) and October 12, 2022 (Photo Nos. 14 and 16). Following the pump down on

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October 19, 2022, a sheen was observed on the recharge water in Sumps 1 and 2 (Photo Nos. 20, 21, and 22). A sheen was visible in Sump 3 on October 26, 2022 (Photo No. 31). No odors were reported during the October inspections.

- The NAPL Collection System sumps (Sumps 1, 2, and 3) have continued to be checked weekly for DNAPL using an interface probe. No measurable NAPL has been detected within the sumps using the interface probe through October 2022. Even though no measurable DNAPL was noted, a dipper tool has continued to be used to further evaluate the presence of and recover DNAPL, if present, from the bottom of each of the sumps during the weekly inspections. No DNAPL was observed or encountered using the dipper tool during the weekly inspections in October. Less than 0.1 gallons (approx.) of DNAPL was recovered from Sump 3 during the pump down event on October 19, 2022 (Photo No. 24). A small amount of DNAPL was observed in Sump 1 during the pump down but was not able to be recovered (Photo No. 20). A notation on the presence of NAPL in each sump, tabulation of depth and thickness of NAPL if detected, and a tabulation of total mass of NAPL recovered from each sump is provided on the enclosed Table 1.

  An accumulation of NAPL on the bottom of the inflow protector in Sump 1 was observed during the inspection on September 14, 2022. The material was removed, and the inflow protector was monitoring during subsequent inspections for additional NAPL accumulation. No additional accumulation was observed through October 26, 2022.

- A small tar-like material seep was observed on the southern edge of the NAPL Collection System in cracks in the cement along the joint of Stall B107 during two of the four inspections in October (October 5th and 12th) (Photo No. 5). This seep was first observed during the July 6, 2022 weekly inspection.

- As detailed in the July 2022 Monthly Status Update, a tar-like material seep was observed next to Track 802 that is located approximately 280 feet northwest of the NAPL Collection System. The tar-like material seep is located along on the northern side of the track at the edge of the railroad ballast (Photo No. 9), and was observed during two of the four inspections in October (October 5th and 12th). During the September 28, 2022 inspection, an additional tar-like material seep was observed within the concrete road area (RD-14) about 45 feet north of Track 802 and east of the existing Track 802 seep location. A small amount of tar-like material was observed at RD-14 in two of the four inspections in October (October 5th and 12th) (Photo No. 10).

- For areas outside the NAPL Collection System, a small amount of tar-like material was observed on the concrete or asphalt surface at the following locations during the October 2022 weekly inspections:

Seep Observations Outside the NAPL Collection System Area	
Stall Number	**Observation Date(s)**
A011	October 5th, 12th, 19th, and 26th (Photo Nos. 1 and 17)
A022	October 5th, 12th, and 26th (Photo No. 2)
B056	October 12th and 26th (Photo Nos. 11 and 25)
B057	October 12th and 26th (Photo Nos. 12 and 26)

Seep Observations Outside the NAPL Collection System Area	
Stall Number	**Observation Date(s)**
B096	October 5th, 12th, 19th, and 26th (Photo Nos. 18 and 27)
B101	October 5th, 12th, and 19th (Photo Nos. 3 and 19)
B102 (Joint)	October 5th, 12th, and 19th (Photo No. 13)
Track 802	October 5th and 12th (Photo Nos. 9)
RD-14 (road north of Track 802)	October 5th and 12th (Photo No. 10)

- Tar-like material observed during the weekly inspection events was removed and recovered using a hand tool to scrape up the material. During October, the number of tar-like material seeps observed and total amount of material removed during the weekly inspections decreased compared to the September 2022 weekly inspections. Less than 0.5 gallons of tar-like material was recovered for the month and placed in a drum for disposal. The drum is staged at the Container Storage Area (CSA).

  During September 2021, track marks from a container transport vehicle running over the seep in stall B102 were observed and barricades were set up surrounding the seep location to prevent further tracking. The barricades are checked and reset, as needed, during the weekly inspections. UPRR remediation contractor US Ecology pressure washed the tar-like material tracking in October 2021. No new track marks were observed around stall B102 during the October 2022 weekly inspections.

- After the pressure washing event conducted on June 28, 2022, no new brown staining/residue or seep water was observed during the weekly inspections through October 2022. UPRR will continue to have a remediation contractor pressure wash and/or collect the water in the areas where the brown staining and seeps are observed, as needed.

- Golder, on behalf of UPRR, submitted to the TCEQ the Englewood IM Yard Test Pit Evaluation Report dated June 2, 2021 summarizing the findings from the test pits installed in July 2020, including weekly inspections since the installation. As discussed in the Test Pit Report, the test pit inspections were to continue through the warmer months (through September 2021). UPRR will prepare a Test Pit Evaluation Report Addendum summarizing the test pit inspections from June through November 2021. During inspections in June and July 2021 the concrete patches covering test pits in stalls A010, A021, B013, B057, B096, and B108 were observed to be damaged. UPRR contractor US Ecology removed the damaged test pit concrete on October 22, 2021 and completed installation of new rebar and concrete on October 25, 2021. The new concrete patches continue to be monitored during the weekly inspections.

  During the inspection on September 28, 2022, a small amount of tar like material was observed in stall B096 adjacent to the test pit patch for the first time since the test pit installation. Tar like material was recovered from B096 near the historical seep location, along the concrete joint at the front of the stall during all four inspections in October (Photo Nos. 18 and 27). Through October 2022, no NAPL seeps have been observed at the six other test pit locations (stalls A010, A021, A098, B013, B057, and B108). The seep observed in stalls B057

(Photo Nos. 12 and 26) during the October inspections is located in cracks in the asphalt pavement and not at the test pit location.

- A follow-up video camera survey of the stormwater sewer lines in the central area of the Englewood IM Yard was conducted on August 26, 2021 to evaluate the stormwater line near the test pit locations. Details of the follow-up video survey will be provided in the Test Pit Evaluation Report Addendum.
- The TCEQ issued a comment letter dated January 26, 2022 titled "*Comments on Interim Groundwater Monitoring Report (July 2020), dated April 30, 2021 Englewood Intermodal Yard (EIY) Test Pit Evaluation Report, dated June 2, 2021, Corrective Action Monitoring Report, 2021 First Semi-Annual Event, dated July 9, 2021*". In the comment letter, the TCEQ requested UPRR prepare an Interim Measures Work Plan (Work Plan) to address the NAPL seeps in the Englewood Intermodal Yard. The TCEQ requested that the Work Plan include a schedule and plan for implementation of additional interim measures to permanently address the NAPL seeps in the Englewood Intermodal Yard. UPRR is in the process of preparing the requested Work Plan.

Weekly site inspections of the NAPL Collection System and Englewood Intermodal Yard concrete pavement near the collection system will continue to be conducted.

If you have any questions or need additional information, please feel free to call us at (512) 671-3434 or Mr. Kevin Peterburs of UPRR at (414) 267-4164.

Sincerely,

Golder Associates USA Inc.

Sarah Balke, G.I.T
Consultant, Geologist

Eric C. Matzner, P.G.
Director, Hydrogeologist

CC: Mr. Kevin Peterburs, UPRR – Milwaukee, WI
Ms. Alma Jefferson, Waste Section Manager, TCEQ Region 12, Houston

Attachment Table 1 – NAPL Measurements – NAPL Collection System
Attachment A – Weekly Inspection Photolog
Attachment B – Waste Disposal Manifests

TABLE

TABLE 1
NAPL Measurements - NAPL Collection System - Englewood Intermodal Yard
UPRR Houston, tx - Wood Preserving Works

Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
8/14/2019	2.5	28	29	Not measurable	
8/21/2019	0	27.5	26.5	Not measurable	
8/28/2019	44.5	47.9	45	Not measurable	Water from sumps pumped out
9/4/2019	19	42	41.5	Not measurable	
9/13/2019	0	39.5	38	Not measurable	
9/20/2019	0	3	2.5	Not measurable	
9/25/2019	0	42	42.5	Not measurable	Water from sumps pumped out
10/2/2019	2.5	42.5	42	Not measurable	Sheen visible in B107/B108 sump, less than 0.1 gal of DNAPL recovered
10/9/2019	3	42	41.5	Not measurable	Sheen visible in B107/B108 sump, less than 0.1 gal of DNAPL recovered
10/16/2019	0	39.5	39	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
10/24/2019	3	35	25	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
10/29/2019	0	24	23	Not measurable	Water from sumps pumped out
10/30/2019	0	40	39	Not measurable	Slight sheen visible in B107/B108 sump
11/6/2019	9	39	38.5	Not measurable	
11/13/2019	7	30	29	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
11/19/2019	4	26	25.5	Not measurable	
11/27/2019	0	25	23	Not measurable	
12/3/2019	2	25.5	25	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
12/11/2019	1.5	17	16.54	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
12/17/2019	5	19.5	17.5	Not measurable	
12/23/2019	10	21	20.5	Not measurable	
1/7/2020	9	13	12.5	Not measurable	
1/8/2020	9	13	12.5	Not measurable	Water from sumps pumped out
1/17/2020	0	32	31.5	Not measurable	
1/21/2020	2.5	26.5	26	Not measurable	
1/28/2020	0	0	0	Not measurable	
2/4/2020	2	11	10.5	Not measurable	
2/12/2020	0	0	0	Not measurable	
2/18/2020	1.5	11.5	10.25	Not measurable	Water from sumps pumped out on 2/20/2020
2/27/2020	2	42	36	Not measurable	
3/6/2020	1	36	36	Not measurable	
3/11/2020	2	36	35.5	Not measurable	
3/18/2020	0	35.5	35	Not measurable	
3/27/2020	0	29	28	Not measurable	
4/3/2020	1.5	29	28.5	Not measurable	
4/8/2020	0	23	22	Not measurable	
4/15/2020	0.5	23	22	Not measurable	
4/21/2020	0	21	21	Not measurable	
4/28/2020	0	23	22	Not measurable	
5/4/2020	-	-	-	Not Measured	Measurements were not taken; the inspector was unable to open the sumps
5/12/2020	0	20	19	Not measurable	
5/19/2020	0	15.75	14.25	Not measurable	Sump 1 pumped down (May 22nd)
5/27/2020	0	14	13	Not measurable	
6/1/2020	0	7	5	Not measurable	
6/10/2020	0	10	9	Not measurable	
6/17/2020	1	12	11	Not measurable	
6/25/2020	0	0	0	Not measurable	
6/30/2020	0	0	0	Not measured	
7/1/2020	48	46	47	Not measurable	Sumps 1, 2, & 3 pumped down
7/8/2020	34	24.5	24	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
7/15/2020	32	29.5	29	Not measurable	Sheen visible in B99/B100 sump & B107/B108 sump, less than 0.1 gal of DNAPL recovered B107/B108 sump
7/23/2020	0	23	22.5	Not measured	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
7/31/2020	0	11	10	Not measurable	
8/5/2020	0	7	5	Not measurable	
8/13/2020	1	11	10	Not measurable	
8/19/2020	0	7	6	Not measurable	
8/26/2020	0	10	9	Not measurable	
9/2/2020	43	37	38	Not measurable	Sumps 1, 2, & 3 pumped down (September 1); Sheen visible in B99/B100 sump & B107/B108 sump

TABLE 1
NAPL Measurements - NAPL Collection System - Englewood Intermodal Yard
UPRR Houston, tx - Wood Preserving Works

Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
9/9/2020	28	37	36	Not measurable	Sheen visible in B107/B108 sump
9/15/2020	1	35	33	Not measurable	
9/23/2020	0	0	0	Not measurable	
9/30/2020	1	10	9	Not measurable	
10/8/2020	4	12	11.5	Not measurable	
10/15/2020	0	11	10.5	Not measurable	Less than 0.1 gal of DNAPL recovered B107/B108 sump
10/21/2020	1	10.5	9.25	Not measurable	
10/28/2020	0	11	10	Not measurable	
11/4/2020	9	13	12	Not measurable	
11/11/2020	0.5	12	11	Not measurable	
11/18/2020	3.5	13	12	Not measurable	
11/24/2020	7	14	13.5	Not measurable	
11/30/2020	2	7	6	Not measurable	
12/10/2020	5	10.5	10	Not measurable	
12/18/2020	4	10	9	Not measurable	
12/23/2020	1	9	7.5	Not measurable	
12/31/2020	0	4	3.5	Not measurable	
1/6/2021	4	10.5	9	Not measurable	
1/15/2021	43	39	37.5	Not measurable	Sumps 1, 2, & 3 pumped down
1/22/2021	0	34	33	Not measurable	Sheen visible in B107/B108 sump
1/29/2021	2	31	30	Not measurable	Sheen visible in B107/B108 sump
2/4/2021	4	30	29.5	Not measurable	Sheen visible in B099/B100 sump
2/10/2021	0	27	25.5	Not measurable	
2/17/2021	0	0	0	Not measurable	
2/24/2021	2	10	9.5	Not measurable	
3/2/2021	0	0	0	Not measurable	
3/10/2021	0	10	9.75	Not measurable	
3/17/2021	0	2	1	Not measurable	
3/24/2021	0	3.5	2	Not measurable	
3/31/2021	0	6.5	7	Not measurable	
4/8/2021	0	7.5	7	Not measurable	
4/14/2021	0	6.5	6	Not measurable	Less than 0.1 gal of DNAPL recovered B107/B108 sump; Sheen visible in B103/104 and B107/B108 sumps
4/21/2021	0.5	9	8.5	Not measurable	
4/28/2021	0	8.5	8	Not measurable	
5/5/2021	0	7.5	7	Not measurable	
5/12/2021	0	8	7.5	Not measurable	
5/19/2021	0	0	0	Not measurable	
5/26/2021	0	2	0.5	Not measurable	
5/27/2021	41	32	26	Not measurable	Sumps 1,2, & 3 pumped down
6/2/2021	0	40	38	Not measurable	Sheen visible in B107/108 sump
6/9/2021	0	30	28.5	Not measurable	
6/16/2021	0	24	25	Not measurable	
6/23/2021	0	12	13	Not measurable	
6/30/2021	0	3	1	Not measurable	
7/7/2021	0	0	0	Not measurable	
7/14/2021	0	0	0	Not measurable	Sumps 1,2, & 3 pumped down (July 15)
7/21/2021	0	39	37	Not measurable	
7/29/2021	0	37	35.5	Not measurable	
8/4/2021	0	36	34	Not measurable	Sheen visible in B103/104 and B107/B108 sumps
8/11/2021	0	33	32	Not Measured	Depth to DNAPL measurements were not taken; the interface probe was not functioning properly
8/18/2021	0	25	23	Not measurable	
8/25/2021	0	20	22	Not measurable	
9/1/2021	0	20	17	Not measurable	
9/8/2021	3	14	11	Not measurable	
9/15/2021	0	3	4	Not measurable	Sumps 1,2, & 3 pumped down (September 17)
9/22/2021	31.5	46	46	Not measurable	Sheen visible in B107/B108 sump
9/29/2021	0	29	30.75	Not measurable	Sheen visible in B103/104 and B107/B108 sumps
10/7/2021	6	18	17.5	Not measurable	
10/13/2021	3.6	10.56	9.72	Not measurable	Sheen visible in B103/104 and B107/B108 sumps; brown discoloration and slight odor noted B099/B100 sump
10/20/2021	0	13.94	12.6	Not measurable	Sumps 1,2, & 3 pumped down (October 21)
10/27/2021	0	22	21	Not measurable	Sheen visible in B099/B100 sump
11/3/2021	10	20	21	Not measurable	
11/10/2021	12	16	15	Not measurable	
11/17/2021	8	16	15	Not measurable	
11/24/2021	7	14	13	Not measurable	

TABLE 1
NAPL Measurements - NAPL Collection System - Englewood Intermodal Yard
UPRR Houston, tx - Wood Preserving Works

Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
12/1/2021	7	15	14	Not measurable	
12/8/2021	6	12.5	12	Not measurable	
12/15/2021	7	15	15	Not measurable	
12/22/2021	-	-	-	Not Measured	Partial site inspection conducted 12/22/21; Sump measurements were not taken
12/29/2021	0	11.5	11	Not measurable	
1/5/2022	8.75	13.5	12.25	Not measurable	
1/12/2022	6	12	12	Not measurable	
1/19/2022	13.5	17	16	Not measurable	Sheen visible in B099/B100 sump
1/27/2022	3	9	9	Not measurable	
2/2/2022	-	-	-	Not Measured	Measurements were not taken; the inspector was unable to open the sumps
2/9/2022	9	15	15	Not measurable	
2/16/2022	8.5	17	16	Not measurable	
2/23/2022	5.5	14	13.5	Not measurable	
3/2/2022	5.5	15	14	Not measurable	
3/9/2022	4.5	7	6	Not measurable	
3/16/2022	48	36	45	Not measurable	Sumps 1,2, & 3 pumped down during inspection; less than 0.5 gal of DNAPL recovered B107/B108 sump
3/23/2022	6	29	28	Not measurable	
3/30/2022	5.5	28	28	Not measurable	
4/6/2022	3.5	19	18	Not measurable	
4/13/2022	4.5	18	15	Not measurable	Sheen visible in B099/B100 sump
4/20/2022	5	18	18	Not measurable	Sheen visible in B099/B100 sump
4/27/2022	4.5	12	8.5	Not measurable	
5/4/2022	48	42	45	Not measurable	Sumps 1,2, & 3 pumped down during inspection; Sheen visible in B099/B100 sump
5/11/2022	16	44.5	44	Not measurable	Sheen visible in B099/B100, B103/104, and B107/B108 sumps
5/18/2022	6.5	45	45	Not measurable	
5/25/2022	0	25	24	Not measurable	
6/1/2022	5.5	24	24	Not measurable	
6/8/2022	5	22	22	Not measurable	Sheen visible in B099/B100 and B103/104 sumps
6/15/2022	5	25	24	Not measurable	
6/22/2022	4.5	24	21	Not measurable	
6/29/2022	6	21	21	Not measurable	
7/6/2022	5.5	13	13	Not measurable	
7/13/2022	5	15	14	Not measurable	Sheen visible in B099/B100 sump
7/20/2022	51.5	38	43.5	Not measurable	Sumps 1,2, & 3 pumped down during inspection; less than 0.1 gal of DNAPL recovered B099/B100 sump
7/27/2022	4	42	40	Not measurable	
8/3/2022	5	39	39	Not measurable	
8/10/2022	5.5	38	38	Not measurable	Sheen visible in B107/B108 sump
8/17/2022	5.5	25.5	25	Not measurable	
8/24/2022	0	0.5	0	Not measurable	Inspector unable to open B099/B100 and B107/B108 sumps as there was standing water on top of the sumps due to ongoing rain event
8/31/2022	52	52	48	Not measurable	Sumps 1,2, & 3 pumped down during inspection; sheen visible in B103/B104 sump
9/7/2022	3	37	37	Not measurable	
9/14/2022	1	34	31	Not measurable	Sheen visible in B099/B100 sump
9/21/2022	2.2	31.5	27.5	Not measurable	Sheen visible in B107/B108 sump
9/28/2022	3	30	31	Not measurable	Sheen visible in B099/B100 and B107/B108 sumps
10/5/2022	8	33	33	Not measurable	Sheen visible in B099/B100 and B107/B108 sumps
10/12/2022	7	32	32	Not measurable	Sheen visible in B099/B100 and B107/B108 sumps
10/19/2022	48	48	48	Not measurable	Sumps 1,2, & 3 pumped down during inspection; less than 0.1 gal of DNAPL recovered from B107/108 sump; small amount of DNAPL visible but not recoverable in B099/B100 sump; sheen visible in B099/B100 and B103/B104 sumps on recharge water after pumpdown
10/26/2022	6	46	45	Not measurable	Sheen visible in B107/B108 sump

Note:
Freeboard in sumps is measured as depth to water from top rim of sump, measured in inches

ATTACHMENT A

Weekly Inspection Photolog

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
1	10/05/2022

Description:

Stall A011, a small amount of tar-like material at a crack in the asphalt pavement, material was removed.

Lat: 29.785392,
Long: -95.318655

Photo No.	Inspection Date:
2	10/05/2022

Description:

Stall A022, a small amount of tar-like material at a crack in the asphalt pavement, material was removed.

Lat: 29.785392,
Long: -95.318655

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
3	10/05/2022

Description:

Stall B101, very small amount of tar-like material at a crack in the asphalt pavement, material was removed.

Lat: 29.784275
Long: - 95.320813

Photo No.	Inspection Date:
4	10/05/2022

Description:

Stall B105, no tar-like material observed, looking northwest.

Lat: 29.784236,
Long: -95.320939

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
5	10/05/2022

Description:

Stall B107, a small amount of tar-like material at concrete joint along the southern edge of the excavated area, material was removed.

Lat: 29.784156
Long: -95.320953

Photo No.	Inspection Date:
6	10/05/2022

Description:

Sump 1 (B099/B100), 8 inches of freeboard in sump, sheen observed on the water surface, no odor noted.

Lat: 29.7844000
Long: - 95.3205861

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
7	10/05/2022

Description:

Sump 2 (B103/B104), 33 inches of freeboard. No sheen or odor noted.

Lat: 29.7842861
Long: - 95.3208611

Photo No.	Inspection Date:
8	10/05/2022

Description:

Sump 3 (B107/B108), 33 inches of freeboard in sump, sheen observed on the water surface, no odor noted.

Lat: 29.784172
Long: -95.320998

Client Name: Union Pacific Railroad	Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 19119232

Photo No. 9	Inspection Date: 10/12/2022

Description:

North side of Track 802 where a small amount of tar-like material seep observed near track, material was removed.

Lat: 29.784947

Long: -95.321214

Photo No. 10	Inspection Date: 10/12/2022

Description:

Seep location observed within the concrete road area (RD-14) north of Track 802 (East of existing Track 802 seep location), very small amount of tar-like material observed along a concrete joint, material was removed.

Lat: 29.78505

Long: -95.32124

Client Name: Union Pacific Railroad	Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 19119232

Photo No. 11	Inspection Date: 10/12/2022

Description:

Stall B056, a small amount of tar-like material at a crack in the asphalt pavement, material was removed.

Lat: 29.7847472
Long: - 95.3195417

Photo No. 12	Inspection Date: 10/12/2022

Description:

Stall B057, very small amount of tar-like material at historical seep location in asphalt cracks, no seeps observed where nearby test pit was conducted (July 2020), material was removed.

Lat: 29.7847472
Long: - 95.3195417

Client Name: Union Pacific Railroad	Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 19119232

Photo No. 13	Inspection Date: 10/12/2022

Description:

Stall B102, small amount of tar-like material observed within concrete joint, residual staining on concrete surface noted.

Lat: 29.7842203
Long: - 95.320827

Photo No. 14	Inspection Date: 10/12/2022

Description:

Sump 1 (B099/B100), 1 inch of freeboard in sump. Sheen observed on the water surface. No odor noted.

Lat: 29.7844000
Long: - 95.3205861

Client Name: Union Pacific Railroad	Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 19119232

Photo No. 15	Inspection Date: 10/12/2022

Description:

Sump 1 (B099/B100), no notable NAPL accumulation noted on the bottom of the inflow protector after the material was removed during the 09/14/2022 inspection.

Lat: 29.7844000
Long: - 95.3205861

Photo No. 16	Inspection Date: 10/12/2022

Description:

Sump 3 (B107/B108), 32 inches of freeboard in sump. No sheen or odor noted.

Lat: 29.784172
Long: -95.320998

Client Name: Union Pacific Railroad	Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 19119232

Photo No. 17	Inspection Date: 10/19/2022

Description:

Stall A011, a small amount of tar-like material at a crack in the asphalt pavement, material was removed.

Lat: 29.785392,
Long: -95.318655

Photo No. 18	Inspection Date: 10/19/2022

Description:

Stall B096, small amount of tar-like material observed near historical seep location along concrete joint adjacent to July 2020 test pit.

Lat: 29.7842528
Long: - 95.3206250

Client Name: Union Pacific Railroad	Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 19119232

Photo No. 19	Inspection Date: 10/19/2022

Description:

Stall B101, very small amount of tar-like material at a crack in the asphalt pavement (center of the photo), material was removed, looking north.

Lat: 29.784275
Long: - 95.320813

Photo No. 20	Inspection Date: 10/19/2022

Description:

Sump 1 (B099/B100), 48 inches of freeboard in sump after pumpdown, sheen observed on recharge water in sump, no odor noted, small amount of DNAPL was observed but not recoverable.

Lat: 29.7844000
Long: - 95.3205861

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
21	10/19/2022

Description:

Sump 2 (B103/B104), empty immediately following pumpdown, no DNAPL observed.

Lat: 29.7842861
Long: - 95.3208611

Photo No.	Inspection Date:
22	10/19/2022

Description:

Sump 2 (B103/B104), 48 inches of freeboard in sump after pumpdown. Sheen observed on recharge water, no odor noted.

Lat: 29.7842861
Long: - 95.3208611

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
23	10/19/2022

Description:

Sump 3 (B107/B108), during pumpdown, water flowing into the sump as it is being pumped out, 48 inches of freeboard in sump after pumpdown. Small amount of DNAPL (approx. 0.1 gal) recovered from sump. No sheen or odor noted.

Lat: 29.784172
Long: -95.320998

Photo No.	Inspection Date:
24	10/19/2022

Description:

Sump 3 (B107/B108), small amount of DNAPL (approx. 0.1 gal) recovered from sump.

Lat: 29.784172
Long: -95.320998

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
25	10/26/2022

Description:

Stall B056, a very small amount of tar-like material at a crack in the asphalt pavement at western stall boundary, material was removed, looking north.

Lat: 29.7847472
Long: - 95.3195417

Photo No.	Inspection Date:
26	10/26/2022

Description:

Stall B057, very small amount of tar-like material at historical seep location in asphalt cracks along western stall boundary, no seeps observed where nearby test pit was conducted (July 2020), material was removed, looking northwest.

Lat: 29.7847472
Long: - 95.3195417

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
27	10/26/2022

Description:

Stall B096, very small amount of tar-like material observed near historical seep location along concrete joint adjacent to July 2020 test pit, material was removed.

Lat: 29.7842528
Long: - 95.3206250

Photo No.	Inspection Date:
28	10/26/2022

Description:

Stall B102, no tar-like material seep observed within joint, residual staining on concrete surface noted, looking northwest.

Lat: 29.7842203
Long: - 95.320827

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
29	10/26/2022

Description:

Sump 1 (B099/B100), 6 inches of freeboard in sump. No sheen or odor noted.

Lat: 29.7844000
Long: - 95.3205861

Photo No.	Inspection Date:
30	10/26/2022

Description:

Sump 2 (B103/B104), 46 inches of freeboard. No sheen or odor noted.

Lat: 29.7842861
Long: - 95.3208611

WSP GOLDER

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	19119232

Photo No.	Inspection Date:
31	10/26/2022

Description:

Sump 3 (B107/B108), 31 inches of freeboard in sump. Sheen noted on the water surface. No odor noted.

Lat: 29.784172
Long: -95.320998

Photo No.	Inspection Date:
32	10/26/2022

Description:

Stalls B100-B110, view of NAPL collection system, looking west.

Lat: 29.784258
Long: -95.320785