Kennedy Jenks

14 June 2022

Ms. Sandra Treccani
Site Manager
Washington State Department Ecology
4601 North Monroe Street
Spokane, Washington 99205

Subject: Cap Integrity Monitoring
BNSF Railway Company, Hillyard Dross Cap
Spokane, Washington
KJ 2296114*00

Dear Ms. Treccani:

This letter provides the results of compliance monitoring activities conducted during 2022 at the BNSF Railway Company (BNSF) Hillyard Dross Cap site (Site), located at the southwestern intersection of Wellesley Avenue and Ferrall Street in Spokane, Washington. The Site is also referred to as the Aluminum Recycling Corporation Site in the Washington State Department of Ecology (Ecology) Consent Decree No. 01202037-9 (Ecology 2001).

The dross encapsulation cell (cap) and associated stormwater system were constructed between 2001 and 2003. The dross cap consists of a low permeability, 40-millimeter-thick, high-density polyethylene (HDPE) geomembrane placed over the graded and prepared dross and soil surface. The geomembrane is overlain by 18 to 30 inches of rounded gravel that acts as a drain to shed water off the geomembrane. A woven, permeable HDPE geotextile fabric is placed above the gravel and covered with approximately 18 inches of topsoil. The topsoil was hydroseeded upon installation.

Stormwater from the dross cap is directed to a channel along the perimeter of the cap, which drains either directly to the stormwater retention pond or to a sump located in the western portion of the Site. Stormwater that drains to the sump is pumped to the retention pond. Secondary overflow from the retention pond is routed to an onsite drywell.

Operation and maintenance (O&M) activities in 2022 consisted of annual remedial component system checks performed consistent with the approved O&M Plan. The annual inspection was completed on 29 April 2022 and included assessment of the following: (1) the dross cap; (2) the stormwater conveyance, evaporation, and disposal system; and (3) other physical facilities such as access roads, setbacks, fencing, electrical system, and groundwater monitoring wells.

No erosion or settlement of the dross cap was observed during 2022. Grasses and forbs were abundant on and surrounding the dross encapsulation cell during the growing season and were dormant during dry months, as is normal.

Stormwater conveyance, evaporation, and disposal system components were monitored in April 2022.

The evaporation pond that collects Site stormwater is located directly northeast of the dross encapsulation cell. Water level elevations measured in the pond are referenced to the North American Vertical Datum of 1988. Post-construction evaporation pond water level elevations are presented in Attachment A. The evaporation pond was not observed to be discharging to the overflow sump and drywell during April 2022.

Based on the field activities performed on 29 April 2022, the following conditions were noted:

- Fence posts in the northeastern corner of the fence surrounding the dross cap were leaning, but the fence panels were stable and not in need of repair.
- A hole had been cut in the fence surrounding the dross cap; repairs will be performed.
- A small hole had been dug under the fence surrounding the dross cap; repairs will be performed.
- The locking mechanism securing the monument of monitoring well MW-6 was found to be damaged during site inspections; repairs will be performed. Other monitoring wells were observed to be in good condition.
- Two monitoring wells (MW-3, MW-4) were in the work area of an ongoing Washington State Department of Transportation (WSDOT) project. The MW-4 monument was converted to a traffic-rated flush mounted monument by WSDOT, and MW-3 was decommissioned and replaced with a new monitoring well located outside of the work area.
- A low area in the berm surrounding the stormwater retention pond was observed; more gravel will be added to the area.

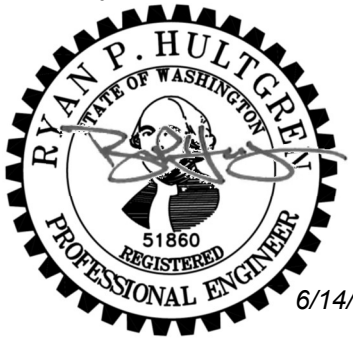
Other physical features such as access roads and setbacks appeared to be in good condition in April 2022.

Site photograph logs from the field inspection have been included as Attachment B.

Please contact us at (253) 835-6432 if you have questions or concerns about the cap integrity monitoring.

Very truly yours,

Kennedy/Jenks Consultants, Inc.




*6/14/2022*

Ryan Hultgren, P.E.
Principal Engineer

cc: Shane DeGross, BNSF Railway Company

Attachments:
Attachment A – Summary of Evaporation Pond Water Levels
Attachment B – Site Photographs

# Attachment A

Summary of Evaporation Pond Water Levels

# Table A: Summary of Evaporation Pond Water Levels

Kennedy Jenks

| Date Measured | Water Level Elevation[a] (feet) |
|---|---|
| 8/26/2003 | 2,035.85 |
| 9/25/2003 | 2,035.64 |
| 10/30/2003 | 2,035.50 |
| 11/26/2003 | 2,035.60 |
| 12/22/2003 | 2,036.64 |
| 1/28/2004 | 2,038.77 |
| 02/20/04[b] | 2,039.18 |
| 3/16/2004 | 2,039.08 |
| 4/19/2004 | 2,038.64 |
| 5/20/2004 | 2,038.10 |
| 6/16/2004 | 2,038.81 |
| 7/26/2004 | 2,037.98 |
| 8/23/2004 | 2,037.73 |
| 9/13/2004 | 2,037.48 |
| 10/15/2004 | 2,037.52 |
| 11/8/2004 | 2,037.48 |
| 12/15/2004 | 2,038.52 |
| 01/28/05[b] | 2,039.12 |
| 2/16/2005 | 2,039.06 |
| 3/10/2005 | 2,039.00 |
| 4/20/2005 | 2,039.02 |
| 5/14/2005 | 2,038.93 |
| 6/9/2005 | 2,039.02 |
| 7/14/2005 | 2,038.77 |
| 8/15/2005 | 2,037.77 |
| 9/27/2005 | 2,036.85 |
| 10/21/2005 | 2,037.85 |
| 11/3/2006 | 2,038.02 |
| 12/16/2006 | 2,037.85 |
| 01/17/06[b] | 2,039.10 |
| 02/03/06[b] | 2,039.10 |
| 03/17/06[b] | 2,039.10 |
| 04/14/06[b] | 2,039.10 |
| 05/03/06[b] | 2,039.10 |
| 6/7/2006 | 2,038.18 |
| 7/6/2006 | 2,038.85 |
| 8/31/2006 | 2,038.85 |
| 9/13/2006 | 2,038.77 |
| 10/30/2006 | NM |
| 11/13/2006 | 2,038.89 |
| 12/4/2006 | 2,038.93 |
| 01/04/07[b] | 2,039.14 |
| 02/02/07[c] | NM |

# Table A: Summary of Evaporation Pond Water Levels

Kennedy Jenks

| Date Measured | Water Level Elevation[a] (feet) |
|---|---|
| 03/06/07[b] | 2,039.10 |
| 4/7/2007 | 2,036.87 |
| 5/3/2007 | 2,036.90 |
| 6/1/2007 | 2,038.94 |
| 07/03/07[c] | NM |
| 8/1/2007 | 2,037.70 |
| 9/7/2007 | 2,037.07 |
| 10/9/2007 | 2,037.17 |
| 11/19/2007 | 2,037.24 |
| 12/20/2007 | 2,038.64 |
| 1/29/2008 | 2,039.39 |
| 2/6/2008 | 2,039.31 |
| 3/17/2008 | 2,039.39 |
| 04/04/08[b] | 2,039.41 |
| 5/1/2008 | 2,039.27 |
| 6/16/2008 | 2,039.03 |
| 7/4/2008 | 2,038.69 |
| 8/5/2008 | 2,037.99 |
| 9/10/2008 | 2,037.59 |
| 10/7/2008 | 2,037.38 |
| 11/11/2008 | 2,037.56 |
| 12/5/2008 | 2,037.59 |
| 01/09/09[b] | 2,039.57 |
| 02/22/09[b] | 2,039.49 |
| 03/10/09[b] | 2,039.55 |
| 04/09/09 | 2,039.39 |
| 5/4/2009 | 2,039.21 |
| 6/5/2009 | 2,038.79 |
| 7/10/2009 | 2,038.28 |
| 8/13/2009 | 2,037.69 |
| 9/8/2009 | 2,037.34 |
| 10/5/2009 | 2,036.65 |
| 11/12/2009 | 2,037.54 |
| 12/7/2009 | 2,037.75 |
| 01/19/10[b] | 2,039.48 |
| 02/17/10[b] | 2,039.49 |
| 03/08/10[b] | 2,039.41 |
| 4/22/2010 | 2,039.32 |
| 5/12/2010 | 2,039.21 |
| 6/4/2010 | 2,039.30 |
| 7/30/2010 | 2,038.88 |
| 8/20/2010 | 2,038.47 |
| 9/9/2010 | 2,038.18 |

## Table A: Summary of Evaporation Pond Water Levels

Kennedy Jenks

| Date Measured | Water Level Elevation[a] (feet) |
|---|---|
| 10/11/2010 | 2,038.07 |
| 11/10/2010 | 2,038.42 |
| 12/10/10[b] | 2,039.59 |
| 01/20/11[b] | 2,039.49 |
| 02/17/11[b] | 2,039.48 |
| 03/21/11[b] | 2,039.49 |
| 04/09/11[b] | 2,039.45 |
| 5/11/2011 | 2,039.39 |
| 06/10/11[b] | 2,039.49 |
| 7/8/2011 | 2,039.09 |
| 8/8/2011 | 2,038.39 |
| 9/21/2011 | 2,037.39 |
| 10/12/2011 | 2,037.90 |
| 11/17/2011 | 2,037.89 |
| 12/9/2012 | 2,037.99 |
| 1/11/2012 | 2,038.29 |
| 02/16/12[b] | 2,039.49 |
| 03/14/12[b] | 2,039.49 |
| 04/07/12[b] | 2,039.49 |
| 05/15/12[b] | 2,039.37 |
| 6/12/2012 | 2,039.18 |
| 7/12/2012 | 2,038.79 |
| 8/22/2012 | 2,039.09 |
| 9/14/2012 | 2,037.51 |
| 10/22/2012 | 2,037.09 |
| November 2012[b][d] | NA |
| 12/12/12[b] | 2,039.37 |
| 01/15/13[b] | 2,039.27 |
| 10/24/2013 | 2,038.09 |
| 11/19/2013 | 2,038.09 |
| 12/18/2013 | 2,038.15 |
| 1/29/2014 | 2038.69 |
| 2/26/2014[b] | 2,039.29 |
| 3/28/2014 [b] | 2,039.23 |
| 4/23/2014 | 2,039.13 |
| 5/28/2014 | 2,038.84 |
| 6/17/2014 | 2,038.61 |
| 7/28/2014 | 2,038.12 |
| 8/21/2014 | 2,037.39 |
| 9/17/2014 | 2,038.39 |
| 10/24/2014 | 2,038.31 |
| 11/25/2014 | 2,037.52 |
| 12/11/2014 | 2,038.39 |

## Table A: Summary of Evaporation Pond Water Levels

Kennedy Jenks

| Date Measured | Water Level Elevation[(a)] (feet) |
|---|---|
| 1/29/2015 | 2,039.39 |
| 2/20/2015 | 2,039.36 |
| 3/31/2015 | 2,039.39 |
| 4/24/2015 | 2,039.20 |
| 5/22/2015 | 2,038.89 |
| 6/25/2015 | 2,038.30 |
| 7/14/2015 | 2,037.94 |
| 8/10/2015 | 2,037.44 |
| 9/30/2015 | 2,036.84 |
| 10/28/2015 | 2,036.69 |
| 11/23/2015 | 2,036.78 |
| 12/18/2015 | 2,037.99 |
| 1/26/2016 | 2,039.41 |
| 2/25/2016 | 2,039.37 |
| 3/21/2016 | 2,039.44 |
| 4/22/2016 | 2,039.22 |
| 5/27/2016 | 2,039.01 |
| 6/28/2016 | 2,038.49 |
| 7/19/2016 | 2,038.09 |
| 8/18/2016 | 2,037.59 |
| 9/23/2016 | 2,037.04 |
| 10/21/2016 | 2,037.95 |
| 11/14/2016 | 2,039.39 |
| 12/22/2016 | 2,039.45 |
| 1/31/2017 | 2,039.47 |
| 2/27/2017 | 2,039.53 |
| 3/16/2017 | 2,039.49 |
| 4/19/2017 | 2,039.53 |
| 5/17/2017 | 2,039.43 |
| 6/15/2017 | 2,038.95 |
| 6/27/2018 | 2,038.59 |
| 4/23/2019 | 2,039.48 |
| 4/29/2020 | 2,039.19 |
| 4/6/2021 | 2,039.39 |
| 4/29/2022 | 2039.19 |

Notes:

(a) Pond water surface elevation relative to NAVD 88. Water level elevation corresponds to the event gauge reading at the pond plus a base elevation of 2,036.59 feet mean sea level (MSL).

(b) Water within the pond was discharging to overflow sump.

(c) Not measured because the pond's staff gauge shifted position, requiring maintenance during subsequent operation and maintenance (O&M) visit.

(d) Water level was within normal range for the time of year. However, a precise water level is not available

NM = not measured.

NA = not available.

# Attachment B

Site Photographs

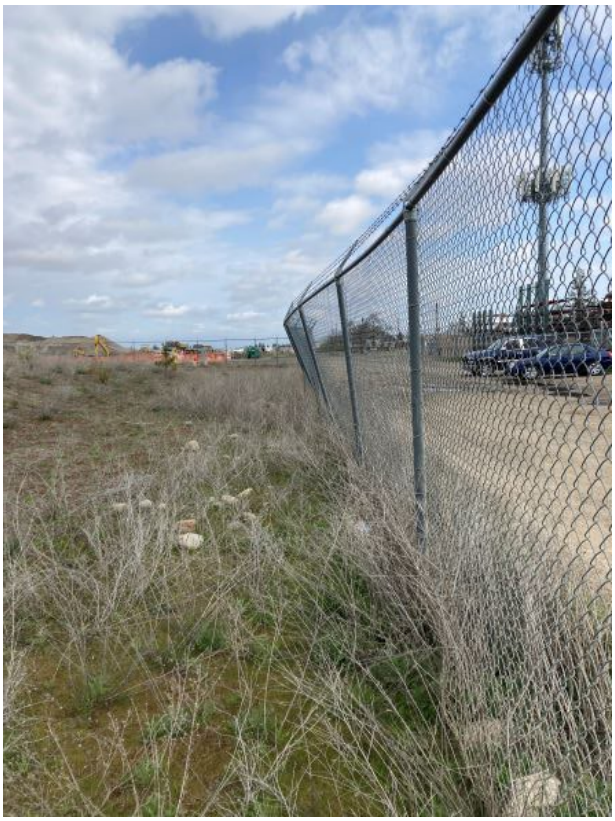


**Photo #1:** Leaning posts of fence enclosing the dross cap.

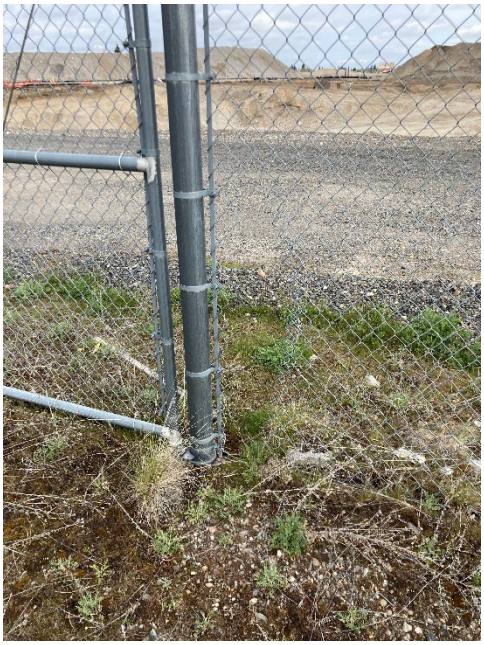


**Photo #2**: Hole in fence enclosing the dross cap.

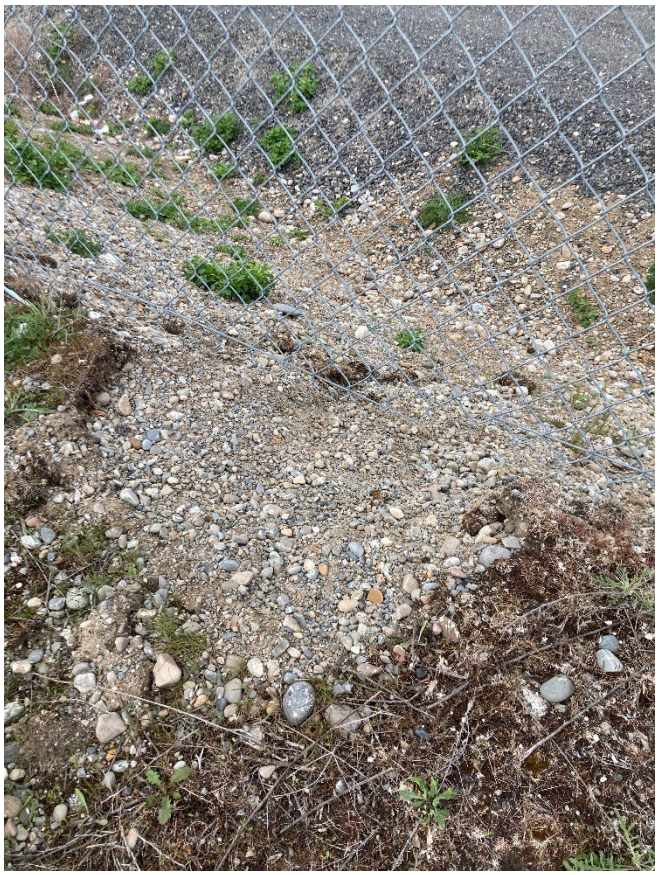


**Photo #3**: Hole under fence enclosing the dross cap.

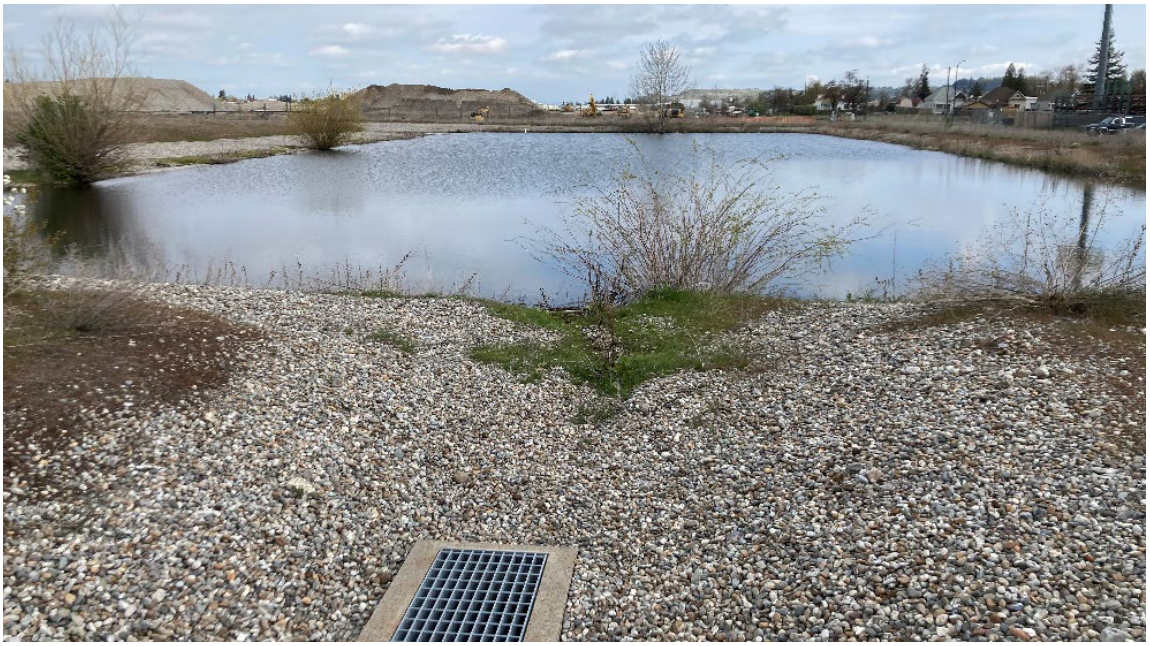


**Photo #4**: Stormwater retention pond and overflow sump.

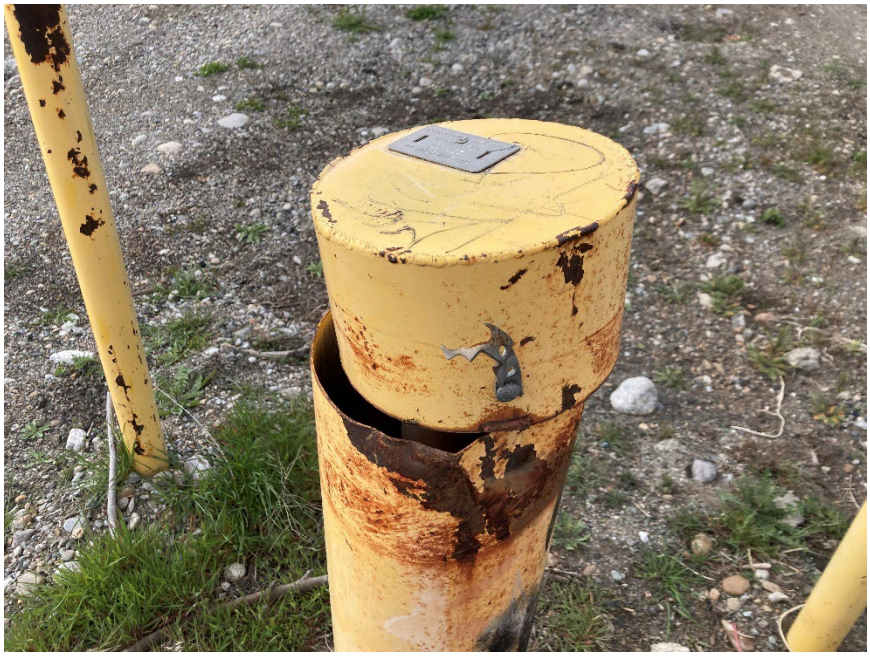


**Photo #5**: Damage to locking mechanism of monitoring well MW-6.

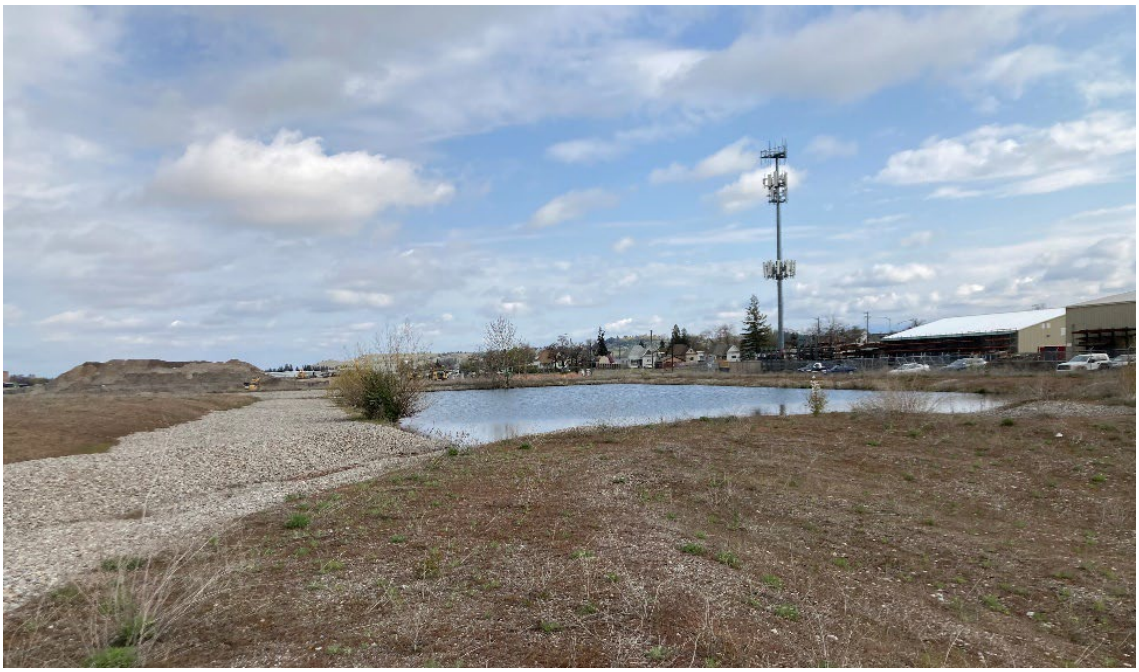


**Photo #6**: Stormwater retention pond and inlet channel.

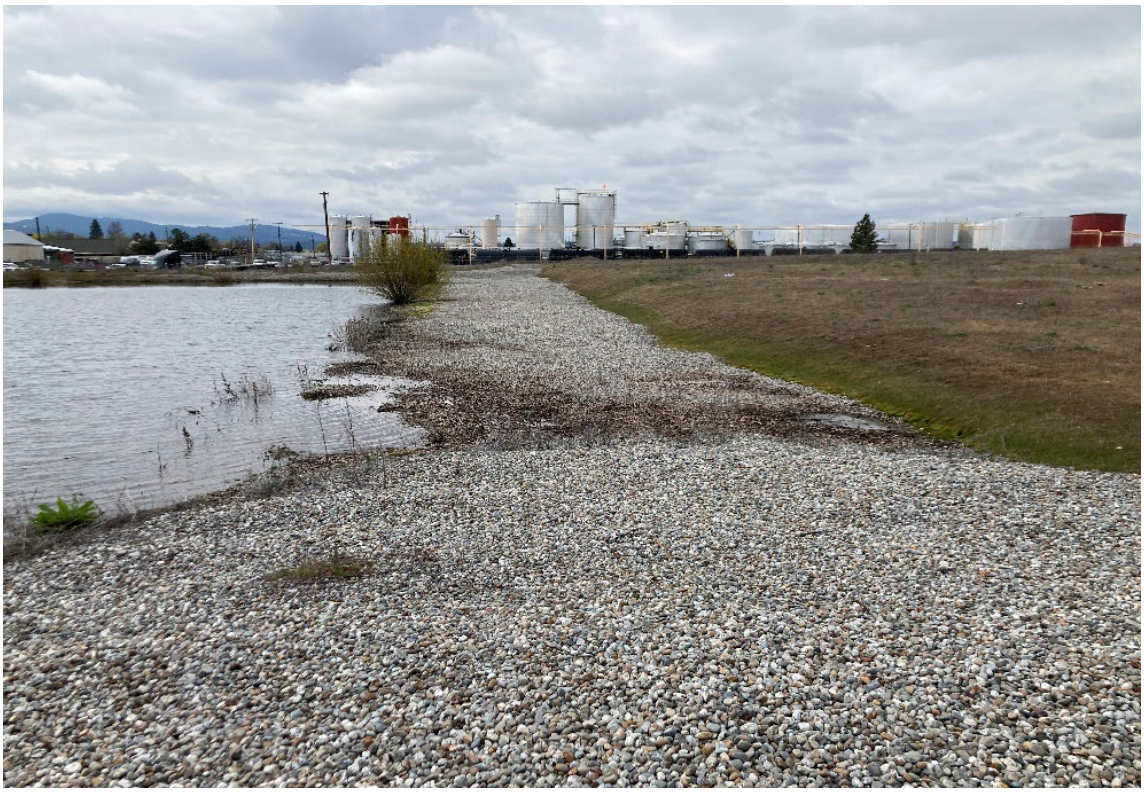


**Photo #7**: Low area in berm surrounding stormwater pond.

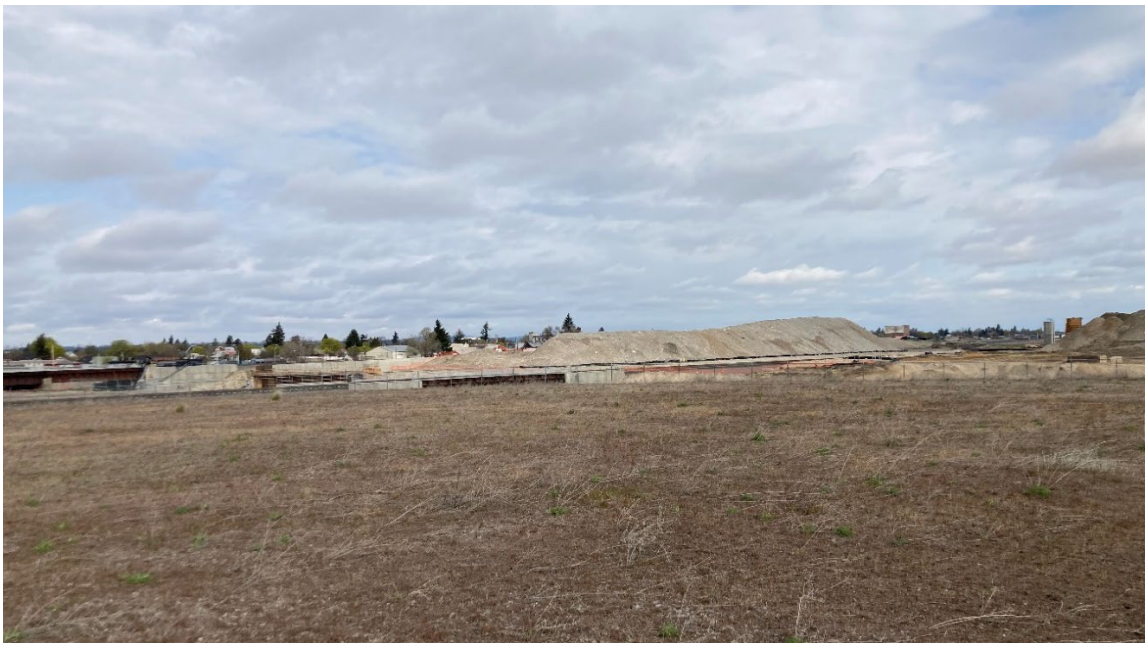


**Photo #8**: Ongoing WSDOT work adjacent to the Site.

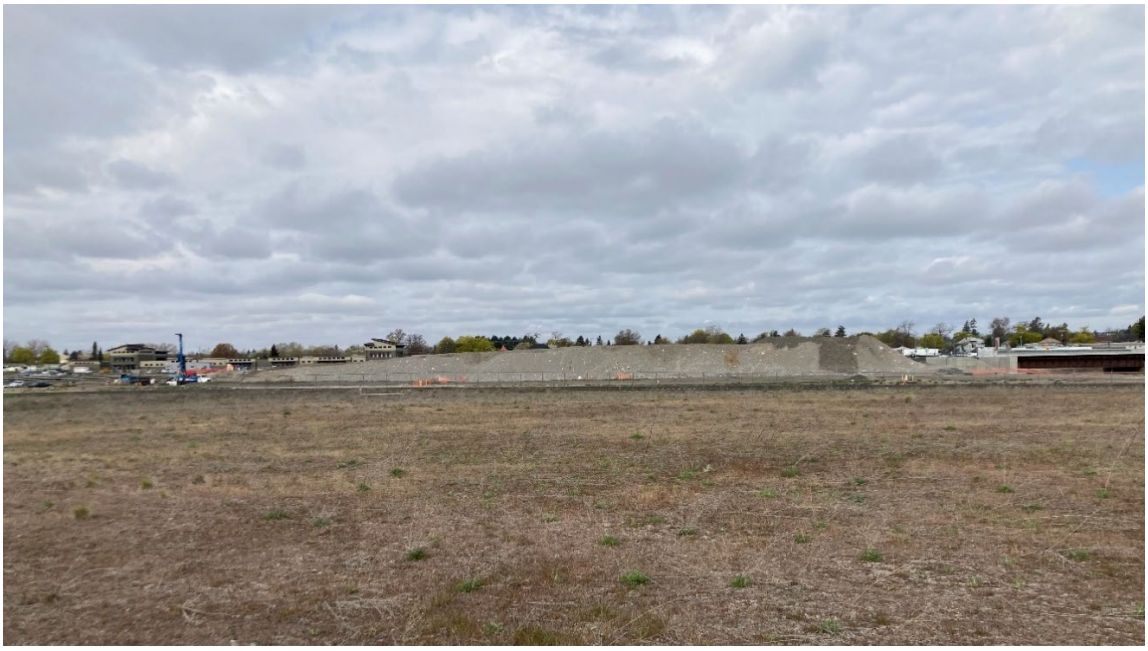


**Photo #9**: Ongoing WSDOT work adjacent to the Site.