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DEPARTMENT OF ECOLOGY
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March 17, 2021

Scott MacDonald
BNSF Railway Co.
605 Puyallup Avenue
Tacoma, WA 98421
scott.macdonald@BNSF.com

Re: Opinion on a Cleanup at the following Site:

- **Site Name:** BNSF Winlock
- **Site Address:** 908 NW Kerron Street, Winlock, Lewis County, WA 98596-9405
- **Facility/Site ID:** 3151688
- **Cleanup Site ID:** 2247
- **VCP Project ID:** SW0775

Dear Scott MacDonald:

On July 13, 2020, the Washington State Department of Ecology (Ecology) received your request for an opinion on the proposed independent cleanup of the BNSF Winlock (Site). On October 12, 2020, your submittal,¹ including upload of electronic data, was complete and ready for our review. This letter provides our opinion. We are providing this opinion under the authority of the [Model Toxics Control Act \(MTCA\)](#),² [chapter 70A.305 Revised Code of Washington \(RCW\)](#).³

Issue Presented and Opinion

Ecology has determined that no further remedial action is likely necessary to clean up contamination at the Site. This letter is a no further action likely, pending satisfaction of the requests in this letter. We provide our opinion as to the remaining steps to achieve a no further action (NFA) for the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, chapter 70A.305 RCW, and its implementing regulations, Washington Administrative Code ([WAC](#)) [chapter 173-340](#)⁴ (collectively “substantive requirements of MTCA”). The analysis is provided below.

¹ As your data uploaded to EIM was accepted on Saturday, October 10, 2020, the effective date for submittal completion is the next business day, which for Ecology was Monday, October 12, 2020.

² <https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html>

³ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305>

⁴ <https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340>

To Concur with a No Further Action Request

In order for Ecology to concur⁵ with the requested No Further Action (NFA) determination for the Site, Ecology requests confirmatory soil sampling at the locations described in further detail in section 4 of the text.

Please also clarify if you have current plans to build at the Property. Ecology requests information related to future property use should that use trigger any requirements under WAC 173-340-360(2)(d), WAC 173-340-440, or require a vapor intrusion evaluation for a proposed building.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Petroleum hydrocarbons and related contaminants into the soil and groundwater.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

The Property is Lewis County tax parcel 039140000000. Currently, the Lewis County Assessor's website provides a street address of 908 NW Kerron Street. However, past use of 908 NW Kerron Avenue also refers to the Property. For purposes of this opinion letter, both addresses are acceptable. The Site also appears to include a portion the NW Kerron Street right-of-way.

A parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure B**.

Ecology requests available electronic copies (e.g., portable document format [PDF]) of any reports submitted prior to Farallon's *Tank Closure Report*, dated March 11, 2010.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. Information on obtaining those records can be found on [Ecology's public records requests web page](#).⁶ Some site documents may be available on [Ecology's Cleanup Site Search web page](#).⁷

⁵ WAC 173-340-515.

⁶ <https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>

⁷ <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=2247>

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that no further remedial action will likely necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A**.

Cleanup Action Summary and Cleanup Activities since Last Opinion Letter

In March 2008, remaining Site infrastructure was removed, including four aboveground storage tanks (ASTs), three at 13,000-gallon capacity and one at 25,000-gallon capacity; one 1,700-gallon underground storage tank (UST), one 7,000-gallon UST, the overhead fuel racks, the pumphouse, above ground piping connecting the ASTs and USTs to the pump house, and the warehouse and truck repair bay.

The UST volumes vary in Farallon's 2010 Tank Closure Report, but the 1,700-gallon and 7,000-gallon estimates most closely match the reported measurements of each UST. Additionally, the 1,700-gallon and 7,000-gallon measurements were reported to Ecology on the UST closure and site assessment notice form, and are thus used as the correct volume estimate for each UST.

In 2010, approximately 330 cubic yards of petroleum contaminated soil was removed and disposed of at Waste Management's Hillsboro Landfill, a permitted disposal facility. To address the remaining groundwater contamination, compliance monitoring with monitored natural attenuation parameters was selected. Though contaminated soils were likely excavated to the extent practicable, given conflicts with utilities and to prevent undermining NW Kerron Street, contaminated soil remained in place.

In 2014, Farallon completed a physical inspection of the stormwater system and drainage ditch in the northern portion of the Site. This inspection did not include any sampling.

Groundwater data, including monitored natural attenuation (MNA) parameters and periodically total organic carbon (TOC) have been collected since the 2008 excavation until February 2020. Frequency of groundwater monitoring varied over the nearly 12-year timeframe, but sampling frequency has been quarterly since August 2018. Groundwater data suggests that concentrations in soil have also likely degraded, but confirmatory soil sampling is necessary to verify current concentrations of Site hazardous substances at locations of historical residual soil impacts.

Site Delineation Determination

Ecology's opinion letter dated August 12, 2013, requested additional delineation to the west and northwest of monitoring wells MW-1 and MW-3. As the Site groundwater flow direction has been historically to the west, MW-5 had been placed on the west side of NW Kerron Street as the downgradient monitoring well.

Concentrations of Site hazardous substances in groundwater at MW-1 achieved compliance with Site cleanup levels in late 2015, so no additional delineation was completed to the northwest. In 2014, monitoring wells MW-6 and MW-7 were installed to delineate concentrations in groundwater to the west of monitoring wells MW-2 and MW-3. Based on the additional data collected, Ecology determines that the Site is adequately characterized and delineated to meet the requirements of WAC 173-340-350(7).

Past Technical Assistance

In accordance with WAC 173-340-515(5), Ecology provided technical assistance for the SW0775 Voluntary Cleanup Project (VCP) via email on March 13, 2018,⁸ and September 25, 2019. These emails are attached as **Enclosure C**. The March 13, 2018, technical assistance email identified a larger scope of data gaps while the September 19, 2019, email focused on addressing specific questions regarding groundwater monitoring. The September 19, 2019, email did not provide technical assistance describing all steps necessary to obtain an NFA determination. Neither email was intended by Ecology to be the equivalent of a complete opinion for the Site, as evidenced by the request in the March 2018 email to submit an opinion request.

In reviewing these emails for this letter, Ecology recognizes it may have been better to require an opinion request and issue a formal opinion on agency letterhead rather than providing informal technical assistance by email. Technical assistance by email is not equivalent to the thorough review and guidance provided by an opinion letter. Moving forward, Ecology will be pleased to evaluate how work plans, work completed, or technical questions meet the substantive requirements of MTCA if an opinion is requested.

Comments in this letter supersede previous statements, if in conflict with statements found in the emails. Any outstanding items for this cleanup are addressed in this opinion letter. We apologize for any confusion and look forward to providing technical assistance in accordance with Ecology's typical review and response process.

⁸ Tim Mullin, Ecology, to Scott MacDonald, BNSF, RE: SW0286 and SW0775 update, March 13, 2018.

Stormwater Line Evaluation

In its August 12, 2013, opinion, Ecology requested an evaluation of the stormwater conveyance that runs along the east side of NW Kerron Street. The stormwater conveyance crosses beneath the rail line via culvert and runs along the north margin of the property as an open drainage ditch. The drainage ditch discharges to a catch basin located at the northwest corner of the Site. Stormwater flows from the catch basin south along NW Kerron Street via pipe of unknown construction. A secondary source of stormwater enters the Site stormwater conveyance via a catch basin near MW-7. The secondary source delivers stormwater from a catch basin on the west side of NW Kerron Street. The final discharge point of the stormwater conveyance is not provided.

Ecology's concern is if residual contaminated soil or groundwater was entering the stormwater line, then the stormwater conveyance along the northern Property boundary, or potentially even surface water, could be impacted by contaminated stormwater. Site groundwater is near the surface during the wet season, which may cause groundwater to contact residual contaminated soil.

This contaminated groundwater could enter the stormwater line if that line is cracked, loose, damaged, or otherwise internally accessible to outside contaminant flow into the pipe. Contaminated stormwater in the line could then enter the stormwater conveyance along the northern Property boundary. Though historical evaluation looked at the integrity of the stormwater line, there was no sampling data from or adjacent to the stormwater conveyance to determine if any impacts were present.

Based on current groundwater data, stormwater in the stormwater line itself is likely not being contaminated by groundwater entering the stormwater line during a seasonal maximum.

No further evaluation of the stormwater line is necessary at this time. However, if confirmatory soil sampling shows that residual soil in the immediate vicinity of the stormwater pipe exceeded MTCA Method A cleanup levels, then additional evaluation may be necessary. Ecology does recommend limited sampling adjacent to the stormwater conveyance along the northern Property boundary to confirm that Site runoff did not impact this area.

Diesel and Heavy Oil in Groundwater

To date, concentrations of diesel and heavy oil in groundwater has been compared separately to the diesel and heavy oil MTCA Method A cleanup levels. Generally, compliance for diesel and heavy oil in groundwater can be thought of the sum of these values compared to a single 500 micrograms per Liter ($\mu\text{g/L}$) cleanup level.⁹

⁹ Ecology Publication No. 04-09-086, *Implementation Memorandum #4 Determining Compliance with MTCA Method A Cleanup Levels for Diesel and Heavy Oil*, June 2004.

Chromatograms provided as part of the laboratory analytical reports show that separate cleanup levels for diesel and heavy oil in groundwater are more likely than not appropriate for the Site. In a Site-specific determination, Ecology concurs with the proposed groundwater cleanup levels for this Site of 500 µg/L for diesel and 500 µg/L for heavy oil.

Air/Vapor Intrusion Evaluation

Site hazardous substances concentrations in groundwater are generally in compliance with MTCA Method A cleanup levels, and nearby buildings are more than 30 feet from the Site.¹⁰ Site hazardous substance concentrations for petroleum cleanups in compliance with the MTCA Method A cleanup levels are generally protective of the vapor intrusion pathway.¹¹ Unless concentrations of Site hazardous substance concentrations in soil exceed the MTCA Method A cleanup levels and are within 30 feet of a building, the air/vapor intrusion pathway is more likely than not incomplete for the Site. Though outside the vapor intrusion exclusion zone, based on satellite photographs, the warehouse adjacent to monitoring well MW-5 has been removed as of July 2018.

If a building were constructed on the Property, and contaminated soils remained in place, then the air/vapor intrusion pathway would likely require additional evaluation.

Terrestrial Ecological Evaluation (TEE)

You propose an exclusion from further TEE per WAC 173-340-7402(2)(a)(ii). Specifically requesting an exclusion from further TEE at the Site using the simplified TEE process available per Table 749-1.¹² Ecology concurs with your proposed exclusion. No further TEE is necessary at the Site.

Silica Gel Cleanup Used for Diesel and Heavy Oil in Groundwater

Ecology does not typically support the use of silica gel cleanup for analyzing petroleum concentrations in groundwater using the Northwest Total Petroleum Hydrocarbons as Diesel Extended (NWTPH-Dx) method.¹³ However, based on the TOC and methane concentrations in groundwater sampled from upgradient monitoring well MW-4 in January and April 2019, some organic material appears to be present and decomposing in the subsurface at the Site.

¹⁰ Minimum exclusion distance per p. 3 from Ecology Publication No. 17-09-043, *Implementation Memorandum No. 18, Petroleum Vapor Intrusion (PVI): Updated Screening Levels, and Assessing PVI Threats to Future Buildings*, January 10, 2018.

¹⁰ WAC 173-340-900.

¹¹ Ecology Publication No. 17-09-043, *Implementation Memorandum No. 18, Petroleum Vapor Intrusion (PVI): Updated Screening Levels, and Assessing PVI Threats to Future Buildings*, January 10, 2018.

¹² WAC 173-340-900.

¹³ p. 99 in Ecology Publication No. 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*, revised June 2016.

Monitoring well MW-4 is upgradient of the Site, and Site hazardous substances have not been detected in MW-4 to date. In groundwater sampled from MW-4, TOC was only about 33-46% of the TOC in groundwater collected from a historically contaminated well (such as MW-3). In all monitoring wells, which historically contained petroleum hydrocarbon concentrations, TOC concentrations in groundwater were greater than at MW-4.

For at least the four past consecutive quarterly groundwater sampling events, diesel and heavy oil have not been detected in groundwater when silica gel cleanup has been used as part of the NWTPH-Dx analysis. The issue with relying on silica gel cleanup results at the Site is that the silica gel cleanup likely removes both the organic and the petroleum hydrocarbon breakdown products at each well, and not just the percentage of the diesel and heavy oil hydrocarbons attributable to the organic portion of the NWTPH-Dx result without silica gel cleanup.

To further complicate matters, diesel and heavy oil were not detected in groundwater sampled at MW-2 in January and April 2019, when analyzed by NWTPH-Dx without silica gel cleanup. The TOC concentration in groundwater sampled from MW-2 during both events was greater than the “natural background” contribution of organic compounds based on TOC concentrations in groundwater sampled from MW-4.

Based on a preponderance of the evidence, in a Site-specific decision, Ecology supports¹⁴ deduction of half of the Manchester Laboratory reporting limit for NWTPH-Dx analysis of Diesel #2 of 150 µg/L, from the diesel results of MW-3. Manchester Laboratory’s 150 µg/L reporting limit for NWTPH-Dx is less than the reporting limit for the February 20, 2020, sampling event reporting limit at 200 µg/L for MW-4, so subtracting half the lesser reporting limit should be sufficiently conservative. Based on the location of MW-4, concentrations of diesel in this well are likely representative of background. After subtracting 75 µg/L from the duplicate result for diesel in groundwater at MW-3 (February 2020 groundwater monitoring event), the diesel concentration of the duplicate sample is less than the MTCA Method A cleanup level.

In conclusion, there is likely some organic compound contribution to groundwater at the Site which is being captured as concentrations of diesel and heavy oil. There are certainly diesel and heavy oil contributions in Site groundwater which are attributed to the historical Site operations. The case for using silica gel cleanup for NWTPH-Dx in groundwater is inconclusive, and appears to remove TOC related to both natural organic and petroleum release sources. In the next section, Ecology makes a professional judgement about the need for further compliance groundwater monitoring at the Site.

¹⁴ Draft Ecology guidance, *Silica Gel Cleanup for Petroleum Analysis*. Site-specific professional judgement.

Groundwater Monitoring Results

Site hazardous substances concentrations at Site monitoring wells are less than cleanup levels for at least four consecutive quarters, which is a generally acceptable to Ecology in order to demonstrate compliance at petroleum cleanup sites. Groundwater flow direction has been approximately to the west. The Site is within the 10 year travel time frame of a City of Winlock's municipal supply well. As groundwater flow direction at the Site is to the west and the supply well is about 0.35 miles to the southeast, Site contamination is unlikely to represent (or have represented) a risk to that supply well.

The concentration of diesel in groundwater sampled at monitoring well MW-3, using the more conservative duplicate sample concentration in February 2020 of 503 µg/L, still exceeds the cleanup level. MTCA does not allow for composite sampling or averaging of analytical results to demonstrate compliance for groundwater samples. When silica gel cleanup was ran on the groundwater samples collected from MW-3, no petroleum hydrocarbons were detected. The concentration of diesel in groundwater sampled from MW-3 in January 2019 was 519 µg/L.

Excluding the duplicate result at MW-3 in February 2020, there are four consecutive quarterly groundwater monitoring events in compliance with cleanup levels. Based on the demonstrated TOC present in all Site monitoring wells, subtracting the likely organic component in groundwater at MW-3, silica gel cleanup for the NWTPH-Dx analysis resulted in no detections of diesel or heavy oil at MW-3.

Ecology concurs¹⁵ that some organic contribution is occurring in groundwater at MW-3. The contribution is enough to account for the duplicate exceedance of diesel in groundwater at MW-3 for the February 2020 sampling event. There is sufficient evidence, in a Site-specific determination, to determine that it is more likely than not that diesel in groundwater concentrations at MW-3 are currently in compliance with the proposed cleanup level.

Electronic Site Data

Electronic Site data uploaded into Ecology's Environmental Information Management (EIM) database appear to be complete. As additional data are collected, please upload those data in accordance with Ecology's Toxics Cleanup Program Policy 840.¹⁶

¹⁵ Professional judgement per WAC 173-340-360(2).

¹⁶ <https://fortress.wa.gov/ecy/publications/SummaryPages/1609050.html>

2. Establishment of Cleanup Standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA. You proposed MTCA Method A cleanup levels at standard points of compliance for the Site. The pathways for some media (surface water, sediment, and ecological receptors) are incomplete. The air pathway is incomplete based on current land use. Ecology concurs with your proposals.

Cleanup Standards: Under MTCA, cleanup standards consist of three primary components; (a) points of compliance,¹⁷ (b) cleanup levels,¹⁸ and (c) applicable state and federal laws.¹⁹

(a) Points of Compliance. Standard points of compliance have been proposed for the Site. Ecology concurs with the use of standard points of compliance at the Site. For clarity, Ecology provides the following table of standard points of compliance to which apply at your Site and to which we concur:

Media	Points of Compliance
Soil-Direct Contact	Based on human exposure via direct contact, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface. ²⁰ Pending confirmatory soil sampling results.
Soil- Protection of Groundwater	Based on the protection of groundwater, the standard point of compliance is throughout the Site. ²¹ Pending confirmatory soil sampling results.
Groundwater	Based on the protection of groundwater quality, the standard point of compliance is throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site. ²² Met based on current groundwater monitoring results.

(b) Cleanup Levels. Cleanup levels are the concentrations of a hazardous substance in soil, water, air (including soil gas), surface water, or sediment that are determined to be protective of human health and the environment. At this Site, MTCA Method A unrestricted cleanup screening levels are proposed²³ and have been used to evaluate petroleum contamination and related contaminants.

¹⁷ WAC 173-340-200 "Point of Compliance."

¹⁸ WAC 173-340-200 "Cleanup level."

¹⁹ WAC 173-340-200 "Applicable state and federal laws," WAC 173-340-700(3)(c).

²⁰ WAC 173-340-740 (6)(d).

²¹ WAC 173-340-747.

²² WAC 173-340-720(8)(b).

²³ See first proposal in section 3.2 of Farallon's *Tank Closure Report*, March 11, 2010.

Other contaminants (e.g., total lead, cPAHs, and PCBs) required for evaluation by Table 830-1 were screened out because concentrations in samples collected early in the project were less than the applicable screening levels.

Ecology concurs that MTCA Method A cleanup levels are appropriate for the Site to evaluate concentrations of Site hazardous substances in Site media. A summary table is presented below. Naphthalene is presented in this table for completeness of the record, but when using Method A cleanup levels at a Site, is included as part of the TPH fraction.²⁴

Hazardous Substance	MTCA Cleanup Level ²⁵	Soil Cleanup Level (mg/kg) ²⁶	Groundwater Cleanup Level (µg/L) ²⁷
TPH as gasoline	A/A	30	800
TPH as diesel	A/A	2,000	500
TPH as heavy oil	A/A	2,000	500
Benzene	A/A	0.03	5
Toluene	A/A	7	1,000
Ethylbenzene	A/A	6	700
Total Xylenes	A/A	9	1000
Naphthalene	A/A	5	160
cPAHs (Benzo[a]pyrene)	A/A	0.1	0.1

3. Selection of Cleanup Action.

Site cleanup consisted of excavation, which included removal of the former fueling facility infrastructure and 330 cubic yards (with off-Site disposal at a permitted facility) of contaminated soil. Excavation areas included a test pit advanced beneath former AST #2, monitored natural attenuation was selected to complete the groundwater cleanup.²⁸ This cleanup action was performed as an independent interim action.

4. Cleanup.

Groundwater data show that Site hazardous substances meet cleanup standards for groundwater at a standard point of compliance. Where Site hazardous substances exceeded cleanup levels in soil which was left in place, confirmatory sampling is necessary to demonstrate that Site hazardous substances in soil also meet cleanup standards.

²⁴ WAC 173-340-900, Table 830-1, footnote 14(a).

²⁵ More stringent of protective of human health or ecological receptors applies.

²⁶ mg/kg = milligrams per kilogram.

²⁷ µg/L = micrograms per Liter.

²⁸ Farallon's *Groundwater Monitoring Status Report*, December 2010, May 4, 2011.

When contaminated groundwater was present after the excavation had been completed, this shows that contaminated soils remained in place, where Site hazardous substance concentrations in those soils were sufficient to cause an exceedance of groundwater cleanup levels.

Ecology requests information related to future property use should that use trigger any requirements under WAC 173-340-360(2)(d), WAC 173-340-410, or require a vapor intrusion evaluation for a proposed building.

Ecology requests confirmatory soil sampling at the locations listed below to verify that cleanup standards are met for soil. Borings, test pits, or a combination thereof, are sufficient to confirm current soil conditions. Ecology recommends sampling for gasoline, diesel, heavy oil, and benzene, toluene, ethylbenzene, and xylene (BTEX). We recommend completing the confirmatory soil sampling investigation at a time of seasonal minimum for the groundwater table. Please carefully note the depth of each historical contaminated soil sample location.

The requested confirmatory soil sampling locations are:

- At least one confirmatory soil sampling location within the footprint of three of the four former ASTs. One test pit was advanced beneath what appears to be former AST #2.
- At least one confirmatory soil sampling location beneath the former pumphouse and each of the former piping runs²⁹ leaving the former pumphouse.³⁰
- Excavation extent sampling locations EX1-NSD1, EX1-NSD3, EX1-WSD2, and WX1-WSD4. Confirmatory soil sampling at these locations will need to be as close as is feasible to these historical excavation extent locations. However, the excavation was filled with quarry spalls,³¹ so sampling techniques and locations may need to be adjusted.
- Boring B9.
- Two shallow soil locations along the southern edge of stormwater conveyance along the northern portion of Property (between the former aboveground lines and pumphouse and the stormwater conveyance). This is in order to confirm that Site runoff did not impact the stormwater conveyance.

²⁹ Figure 2 in Farallon's *Tank Closure Report*, March 11, 2010.

³⁰ Investigation of the above ground piping runs and the pumphouse was requested in Ecology's opinion letter dated July 5, 2006.

³¹ P. 4-6 in Farallon's *Tank Closure Report*, March 11, 2010.

If Site hazardous substances concentrations in soil exceed the cleanup levels, please provide updated figures and cross-sections showing the extent of the contamination.

Alternately, you could re-evaluate residual contaminated soils with a feasibility study (FS) with disproportionate costs analysis (DCA) (FS/DCA). If soils containing any Site hazardous substances locations are inaccessible or impractical to remove because of utilities or other infrastructure, discuss this in the FS/DCA.

At this Site, if needed, a DCA could compare one or two permanent alternatives against a non-permanent alternative using institutional controls memorialized by an environmental covenant and supported by long term groundwater and cap monitoring plans. Examples might be excavation with utility removal and Property restoration, chemical injection, and the institutional controls with long term monitoring alternative.

However, please note that if Site hazardous substance concentrations in soil, near former boring location B9, exceed any cleanup level(s), the delineation point for soil is monitoring well MW-5, which is on the parcel to the west. There is no soil data between B9 and the centerline of Northwest Kerron Street, which would be necessary to determine if contaminated soils are limited to the Property or if they extend onto the parcel to the west.

If contaminated soils extend onto the parcel to the west, that parcel would also be subject to institutional controls and an environmental covenant if that was the proposed cleanup alternative. The owner for that parcel would have to agree in writing to include their parcel under any institutional controls and environmental covenant in order for Ecology to make a no further action determination in this scenario.

If any residual contaminant concentrations remain in soil in excess of Site cleanup levels but are inaccessible for additional cleanup, and institutional controls memorialized via an environmental covenant are appropriate for the Site, long term groundwater monitoring would be required to meet WAC 173-340-410. Long term groundwater monitoring would also be necessary because of the shallow Site groundwater and because residual contaminated soil would likely be in contact with that groundwater.

Limitations of the Opinion

1. Opinion Does Not Settle Liability with the State.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70A.305.040(4).

2. Opinion Does Not Constitute a Determination of Substantial Equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. See RCW 70A.305.080 and WAC 173-340-545.

3. State is Immune from Liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. See RCW 70A.305.170(6).

Contact Information

Thank you for choosing to clean up the Site under the VCP. After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our [Voluntary Cleanup Program web site](#).³² If you have any questions about this opinion, please contact me at (360) 407-6265 or tim.mullin@ecy.wa.gov.

Sincerely,



Tim Mullin, LHG
Toxics Cleanup Program
Southwest Regional Office

TCM/tam

Enclosures (3): A – Site Description
 B – Document List
 C – Email Correspondence

cc by email: Brad Helland, TRC bhelland@trccompanies.com
 Doug Kunkel, TRC dkunkel@trccompanies.com
 Keith Woodburne, TRC kwoodburne@trccompanies.com
 Nicholas Acklam, Ecology, nicholas.acklam@ecy.wa.gov
 Ecology Site File

³² <https://www.ecy.wa.gov/vcp>

Enclosure A

Site Description

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Site Description

The Site is located at 908 Northwest Kerron Street, Winlock, Lewis County, Washington. The Property is Lewis County tax parcel 039140000000. Current land use is a vacant gravel lot periodically used to park construction vehicles.

Historical structures included a warehouse, overhead fuel racks, truck repair bay, and four ASTs (three 13,000-gallon capacity and one 25,000-gallon capacity). The Property was first developed in 1925 as a bulk fuel facility. The Property had been used as a bulk fuel storage plant from approximately 1925-1970 by Shell Oil (who leased the Property from BNSF in 1925), and then Cummings Oil Company had operated the facility from 1970-1976.

The ASTs were removed in March 2008. In July 2008, two underground storage tanks, of 1,700-gallon capacity and 7,000-gallon capacity, were removed from the Site, along with all other Site infrastructure. The maximum depth of excavation was eight feet below ground surface (bgs).

Approximately 330 cubic yards of contaminated soil were disposed of at Waste Management's Hillsboro Landfill, a permitted facility located in Hillsboro, Oregon. A total of 2,000 gallons of wastewater and 400 gallons of sludge were removed from the ASTs and USTs prior to decommissioning and disposed of by MarVac at their Seattle, Washington facility. The Property has been vacant since the excavation.

The Site is located in an area of outwash deposits, which consist of sands, silts, and gravels, with some trace clay. Observed Site lithology is silty sands underlain by gravels, which are in turn underlain by sand and silts. Some woody debris and organic matter are present. The maximum depth explored at the Site is 12 feet bgs. The nearest surface water is the uncontained drainage ditch on the northern portion of the Property. Olequa Creek, located 0.14 miles to the west of the Site, is the nearest natural surface water body.

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Enclosure B

Document List

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Document List

1. TRC Companies, Inc. (TRC), *Request for No Further Action Determination*, June 29, 2020.
2. TRC, *2018-19 Annual Groundwater Monitoring Report*, August 29, 2019.
3. TRC, *2018 Second Semi-Annual Groundwater Monitoring Report*, May 2, 2019.
4. TRC, *2018 First Semi-Annual Groundwater Monitoring Report*, August 30, 2018.
5. TRC, *2017 Second Semi-Annual Groundwater Monitoring Report*, January 1, 2018.
6. TRC, *2017 First Semi-Annual Groundwater Monitoring Report*, August 1, 2017.
7. TRC, *Annual 2016 Groundwater Monitoring Status Report*, February 9, 2017.
8. TRC, *Submittal of Annual 2014 Groundwater Monitoring and Supplemental Subsurface Investigation Report*, January 20, 2015.
9. TRC, *Submittal of Supplemental Subsurface Investigation Work Plan*, June 27, 2014.
10. TRC, *Annual 2013 Groundwater Monitoring Report*, January 7, 2014.
11. Ecology, RE: *Opinion on Proposed Cleanup*, August 12, 2013.
12. Farallon, *Groundwater Monitoring Status Report March 2011*, August 19, 2011.
13. Farallon, *Groundwater Monitoring Status Report*, March 24, 2011.
14. Farallon, *June 2010 Groundwater Monitoring Status Report*, September 13, 2010.
15. Farallon, *March 2010 Groundwater Monitoring Status Report*, September 13, 2010.
16. Ecology: RE: *Opinion on a Proposed Cleanup at a Site*, March 18, 2009.
17. Ecology: RE: *Further Action Determination under WAC 173-340-515(5) for the following Hazardous Waste Site*, July 5, 2006.

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Enclosure C

Email Correspondence

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From: [Mullin, Tim \(ECY\)](#)
To: [Macdonald, Scott](#)
Subject: SW0286 and SW0775 update
Date: Tuesday, March 13, 2018 1:24:00 PM

Good afternoon Scott:

Thank you for your patience regarding BNSF's late January 2018 request for information related to two VCP Sites, SW0286 (Kelso; 1993 train derailment spill) and SW0775 (Winlock; former Cummings Oil Lease Site).

1. For SW0286, per my internal direction, I will be providing a technical memorandum with options for the TEE based on a review by Ecology's TCP policy group.
2. For SW0775, I have done a detailed Site review. This Site has several loose ends, and an appropriate response from Ecology would be in the form of an opinion letter.
 - a. As an opinion was not specifically requested, I have not proceeded with a letter for SW0775. However, if BNSF wants an opinion, please request.
 - b. Based on my review, it doesn't seem that all the historical data is in one comprehensive location. If BNSF decides to submit any document for an opinion or future No Further Action request, I recommend compiling all the historical information and data into one comprehensive report.
 - c. Some comments for BNSF's consideration:
 - i. Review all of Ecology's opinion letters submitted to date (July 26, 2006, March 18, 2009, and August 12, 2013) and determine if/how each point has been addressed. I do see some responses have been made to various opinion letter points by both Farallon and TRC.
 - ii. It appears that consistent consecutive Site COC(s) concentrations in groundwater less than the applicable MTCA Method A and B cleanup levels are being sought prior to delineating/confirming historical contamination in the vicinity of MW-1 and along the storm water drain between MW-1 and MW-2.
 1. Please confirm if this presumption is accurate.
 2. Per p. 2 of Ecology's March 18, 2009 opinion letter, additional monitoring well(s) were requested to the northwest of MW-1.
 3. Additional soil and groundwater evaluation along the storm water line may be necessary. In the vicinity of historical soil and grab groundwater location B-9 would be an example.
 - iii. Verify Table 830-1 constituents have been met for each release at the Site (likely have met the requirements, but consider verify).
 - iv. Draft comprehensive figures and tables that include all Site investigation and cleanup work since June 2000.
 1. It would also be helpful to have at least one figure with all the historical soil sampling locations and the former infrastructure arranged on the same figure.
 - v. Review the documents dated March 20, 1996 and July 12, 2000 to determine if any rail car offloading areas (or other potential releases points) have not

yet been assessed.

1. Page 2 of the March 20, 1996 document indicates product was delivered to the former facility from approximately 1925-1953.
- vi. It is unclear why only one test pit was dug under one former AST location in 2008, and not under each former AST nor under the former pumphouse.
- vii. It appears assessment in the vicinity of the pump house and between the pump house and the ASTs was requested in Ecology's July 26, 2006 opinion letter (p. 3), but has not been completed to date.
- viii. It is unclear how soil and/or groundwater beneath the former warehouse, garage, and above ground piping runs were evaluated.
- ix. If any fuel truck servicing was completed at the Property, additional evaluation may need to be considered.
- x. It is unclear if all the data gaps have been filled as presented in Section 2.5 of Farallon's *Cleanup Action Work Plan* dated December 18, 2008.

Sincerely,

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From: [Mullin, Tim \(ECY\)](#)
To: [Macdonald, Scott](#)
Cc: [Woodburne, Keith](#); [Helland, Brad](#); [Mullin, Tim \(ECY\)](#)
Subject: SW0775 - BNSF Winlock
Date: Wednesday, September 25, 2019 9:52:27 AM
Attachments: [SW0775_email_3-13-18.pdf](#)

Hi Scott,

I interpreted your voicemail from a few weeks ago as you were traveling and might follow up with another call, so I didn't return that voicemail. If I misunderstood, I apologize for the delay.

Regarding whether or not the diesel without silica gel cleanup result in groundwater at MW-3 at SW0775 – BNSF Winlock, with a value of 519 µg/L, requires additional sampling – my opinion is yes, additional groundwater monitoring is warranted. Following section 10.3 in Ecology Publication No. 10-09-057, [Guidance for Remediation of Petroleum Contaminated Sites](#), revised June 2016, four consecutive quarterly events for all Site hazardous substances at concentrations less than the applicable MTCA cleanup levels would be necessary to demonstrate compliance for SW0775. It appears that silica gel cleanup was used for NWTPH-Dx analyses for most sampling events, which Ecology does not typically accept per the same guidance.

- 1) Upon review of the data presented in TRC's 2018-19 *Annual Groundwater Monitoring Report* dated August 29, 2019, I suggest:
 - a. One additional monitoring event for all Site wells for diesel and heavy oil only. Gauge all wells.
 - b. Additional monitoring at MW-3 for diesel and heavy oil without silica gel cleanup until:
 - i. Four consecutive events result in concentrations complying with the MTCA Method A cleanup levels.
 - ii. Sufficient monitoring events have been completed to use the statistical method for determining compliance as described in WAC 173-340-720(9).
 - c. The next sampling event would appear to be in 4th quarter 2019. Though the third quarter event might have been skipped, if the next quarterly sampling event is in October 2019, I think it would be sufficient as a fourth consecutive quarterly event (presuming no exceedances) for this Site. This determination is specific to SW0775.
 - d. It appears to me that sufficient gasoline and BTEX data in groundwater have been collected to demonstrate compliance.
 - i. I recommend double checking WAC 173-340-900, Table 830-1 and applicable footnotes to verify that all required analyses have been collected in groundwater.
 - e. As the diesel and heavy oil ranges are likely representative of the same released substance (diesel range hydrocarbons), under Ecology [Implementation Memorandum #4](#), technically the total TPH value should be compared to the 500 µg/L cleanup level for diesel. However, because of the precedence already in place at this Site, the diesel and heavy oil values can each be compared to the MTCA Method A cleanup value of 500 µg/L.
 - f. Alternately, you could evaluate whether or not silica gel cleanup is appropriate for the Site. An example of the approach was provided in the opinion issued for SW1599 – Union Pacific Railroad Diesel Spill on May 13, 2019. This document is available at: <https://apps.ecology.wa.gov/gsp/CleanupSiteDocuments.aspx?csid=13209>
 - g. Alternately, you could evaluate the Site for Monitored Natural Attenuation (MNA) of contaminants in groundwater. Based on the declining concentrations, it appears that any petroleum plume in groundwater at the Site is shrinking. However, any MNA plan which requests closure with concentrations left exceeding the MTCA Method A cleanup level(s) will require an environmental covenant and long term monitoring.

- h. In my opinion, the options described in points f and g are probably more expensive and time consuming than continuing the groundwater monitoring as outlined in points a-c.
- 2) Based on my email from March 13, 2018 (attached), I recommend continuing with the current opinion request, even as additional groundwater data are collected. However, if you want to wait to make an opinion request until after any additional groundwater data are collected, submitted, and uploaded and accepted into Ecology's EIM database, that is your option.

Thank you,
Tim

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