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March 29, 2021

Judith Wirth  
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**Re: Opinion on a Cleanup at the Following Site:**

- **Site Name:** John's Auto Wrecking aka Havens Estate Investments, LLC
- **Site Address:** 411 93rd Ave SE, Olympia, Thurston County, WA 98501
- **Facility/Site ID:** 57665495
- **Cleanup Site ID:** 2120
- **VCP Project ID:** SW1613

Dear Judith Wirth:

On May 26, 2020, the Washington State Department of Ecology (Ecology) received your request for an opinion on the proposed independent cleanup of the John's Auto Wrecking aka Havens Estate Investments, LLC (Site). On August 28, 2020, your submittal, 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 \(MTCA\)](#),<sup>1</sup> [chapter 70A.305 Revised Code of Washington \(RCW\)](#).<sup>2</sup>

## Issue Presented and Opinion

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**Ecology has determined that, upon fulfillment of the requests in this letter, a no further action is likely appropriate for your 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](#))<sup>3</sup> (collectively "substantive requirements of MTCA").

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<sup>1</sup> <https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html>

<sup>2</sup> <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305>

<sup>3</sup> <https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340>

Ecology provides this non-binding advisory opinion based on RCW 70.305A.030 and WAC 173-340-515.<sup>4</sup> A cleanup under this section is independent, without Ecology oversight and approval. Ecology is limited to concurring or not concurring with proposed and completed cleanup actions, and we are limited to providing non-binding informal advice and technical assistance. The analysis is provided below.

### **Summary of Requests in this Letter:**

1. At least one additional confirmatory soil sample at PS1.
2. Demonstrate how groundwater monitoring requirements under section 10.3 in Ecology Publication No. 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*<sup>5</sup> or WAC 173-340-720(9) have been met for each monitoring well location.<sup>6</sup>
3. At least three performance surface water samples from Hopkins Ditch.
4. Confirm list of applicable local, state, and federal laws. Add to list if necessary, justify if no additions required.
5. Determine if a Property-specific no further action (NFA) request (with or without institutional controls) is appropriate for the cleanup.

### **Areas of Concern (AOCs) which Appear to Require No Further Action:**

1. Paraffin oil at TP-22.
2. North Excavation (removal of contaminated soil).
3. Debris removal.
4. AOCs: 1, 3, 5, 6, 10, 11, 14.

### **Description of the Site**

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

- Total petroleum hydrocarbons (TPH) in the diesel (TPH-D) and oil-ranges (TPH-O) into the Soil. Paraffin oil identified at the Site is included as mineral oil.
- Carcinogenic polycyclic aromatic hydrocarbons (cPAH) into soil.

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<sup>4</sup> Binding commitments at cleanups, as described under WAC 173-340-130(3), can only be made under an order or consent decree. Liability with the state for a cleanup can only be settled under a court mediated or ordered consent decree.

<sup>5</sup> Revised June 2016. <https://apps.ecology.wa.gov/publications/SummaryPages/1009057.html>

<sup>6</sup> WAC 173-340-720(9)(c)

- Polychlorinated Biphenyls (PCBs) into soil.
- Metals (arsenic, cadmium, chromium, lead, mercury, nickel, and zinc) into soil.
- TPH, tetrachloroethylene (PCE), and metals (arsenic, cadmium, chromium, lead, mercury, nickel, and zinc) potentially into groundwater.
- Lead and cPAHs into sediment, potentially into surface water.

This opinion is limited to those releases hereto identified at the Site. **Enclosure A** includes a detailed description of the Site, as currently known to Ecology.

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.

The Site is comprised of 15 identified releases, herein referred to as areas of concern (AOC) AOC-1 through AOC-14, and Hopkins Ditch. The Site includes portions of five contiguous Thurston County tax parcels: 12723210000, 12723210100, 12723210400, 12723210401, and 12723210700 (the Property). The Property refers to these five tax parcels along with a sixth tax parcel, Thurston County tax parcel 12723220200, which does not appear to be a part of the Site, based on data and documentation submitted to date. The Property is a total of 16.04 acres.

Additionally, as documented by Ecology's comments on a State Environmental Policy Act (SEPA) application<sup>7</sup> related to construction activity on Thurston County tax parcel 12723210101, with a street address of 401 Southeast 93<sup>rd</sup> Avenue, Olympia, no release related to the Site appears to have affected this parcel. Thurston County tax parcel 12723210101 (owned by Innovative Equities LLC) is adjacent to the Property on the northwest corner.

## **Basis for the Opinion**

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

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](#).<sup>8</sup> Some site documents may be available on [Ecology's Cleanup Site Search web page](#).<sup>9</sup>

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

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<sup>7</sup> Ecology, Comments on SEPA 2019101360, April 19, 2019

<sup>8</sup> <https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>

<sup>9</sup> <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=2120>

## Analysis of the Cleanup

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Ecology has concluded that after completing the additional work described in this opinion, no **further remedial action** will likely be 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**. Under WAC 173-340-515(3), we rely on you to provide us the Site data and cleanup action results, and request Ecology's concurrence that those actions meet the minimum substantive requirements of MTCA.

#### ***Comments on Identified Releases***

Under MTCA, a release is described in WAC 173-340-300. At this Site, rather than a single point of release, multiple releases have been identified. The Site has been evaluated by dividing zones of local contamination into AOCs. Thus far, 15 total AOCs have been evaluated. These include AOC-1 through AOC-14, and Hopkins Ditch as a 15<sup>th</sup> AOC.

Based on the extent of the former junkyard operation, historical correspondence, and field visits, Ecology focused this Site cleanup (under Voluntary Cleanup Program [VCP] project SW1613 and formerly under SW0652 and SW1127) on addressing the known releases. This opinion discusses the Site's known releases, and does not attempt to evaluate every square foot of the historical junkyard operation footprint.

Thurston County tax parcel 12723220200 is 0.19 acres in size. Historical satellite imagery shows junked cars were stored on the parcel. Based on historical Site visits made by Thurston County, Robinson-Noble, and Ecology, no one observed any surface soil staining suggesting a potential release on this parcel to warrant investigatory sampling. Site data suggest that a release has not occurred on this parcel; however, this is a professional judgement,<sup>10</sup> and there are no soil sampling data to confirm. Based on available data, it is more likely than not that tax parcel 12723220200 is **not** part of the Site. This determination may be updated if new data suggest a release occurred.

#### ***Comments on Potential Sediment Contamination at the Site***

In August 2019, two locations of lead and cPAH contamination were remediated by excavation (WS6 and WS8), located within the footprint of Hopkins' Ditch. These two locations had initially been mapped within freshwater wetlands.

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<sup>10</sup> WAC 173-340-360(2)

By a preponderance of the evidence provided below, Ecology's conservatively protective determination is that Hopkins Ditch, including these locations, is more likely than not, inundated with water more than six weeks per year,<sup>11</sup> and is therefore subject to regulation under the Washington State Sediment Management Standards (WAC 173-204). Based on Ecology's review of all available Site information, Hopkins Ditch locations must be evaluated for surface water and sediment pathways for the Site remedial investigation.

**Sediment Evaluation:** Ecology has selected to provide the following sediment evaluation, and has determined that lead and cPAH concentrations at the Site do not likely represent a sediment Site of potential concern.

Sediment cleanup levels only need to be developed for a Site when the Site is determined to include a sediment site of potential concern. While Ecology provides the following evaluation, you can choose to reevaluate and submit the results in a new deliverable.

**Sediment Site of Potential Concern Evaluation:** Ecology concurs that the locations and concentrations for the upland release of lead and cPAHs may have resulted in impacts to Hopkins Ditch and associated freshwater wetlands. Ecology identified and evaluated locations of potential concern which are spatially (laterally and vertically) and chemically similar. Ecology excluded sampling locations removed by excavation from the analysis.

The evaluation process included:

1. Determining sediment cleanup objectives and sediment cleanup screening levels appropriate for the Site. Sediment cleanup objectives and cleanup screening levels must be protective for both (1) the benthic community and (2) human health.
2. Determining if the bioaccumulative concern associated with cPAHs requires further evaluation at the Site.
3. Determining if a group of sediment sample locations is representative for the Site.
4. Comparing the most contaminated Site data from those locations, which have not been removed by excavation, to sediment cleanup objectives following the procedures provided in WAC 173-204-510 to determine whether sediment cleanup objectives for lead and cPAHs are exceeded.

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<sup>11</sup> WAC 173-204-505(22) "Surface sediment" or "sediment" means settled particulate matter located at or below the ordinary high water mark, where the water is present for a minimum of six consecutive weeks, to which biota (including benthic infauna) or humans may potentially be exposed, including that exposed by human activity (e.g., dredging).

Lead analysis provided by analytical method USEPA method 6010 and 6020 was determined to be sufficient for our evaluation. Unfortunately, total HPAH and LPAH were not provided for sediment concentrations. However, cPAHs were analyzed by analytical method USEPA 8270-SIM, which is similar to the USEPA method 8270 used for HPAH and LPAH analysis.

In a Site-specific determination, Ecology believes it is more likely than not that available cPAH data (including post-remedial data) for Site sediments is adequate to determine if there is a sediment Site of potential concern for benthic community health.

**Determining Sediment Cleanup Objectives and Cleanup Screening Levels Appropriate for the Site:**

1. Benthic community health: Ecology considers the tabulated benthic sediment cleanup objectives in WAC 173-204-563 appropriate for evaluating freshwater benthic community protection at this Site.
2. Ecology believes that sediment cleanup objectives for protection of the benthic community are also protective of human health at this Site, for the following reasons:
  - a. For protection of human health, Ecology first refers to the persistent bioaccumulative toxins list promulgated in WAC 173-333-310. Lead does not appear on the list, but PAHs (as individual hazardous substances) do appear on the list. Lead appears on the list as a metal of concern under WAC 173-333-315. The metals of concern designation is stated in the rule to have been intended to identify metals of concern to be addressed pending completion of EPA's inorganic metals assessment framework process. *Washington State Lead Chemical Action Plan*, Ecology and Department of Health Publication No. 09-07-008,<sup>12</sup> was published in September 2009.
  - b. Ecology then also considered the small size of the Site, the inaccessibility for people to be exposed to sediment, and the fact that Hopkins Ditch is not known to be a source of human consumption of fish or shellfish. For the Site, the exposure pathways for direct contact, sediment ingestion, and fish consumption appear to be incomplete. For this Site-specific instance, sediment cleanup objectives protective for benthic invertebrates appear to also be sufficiently protective of human health.

**Determining a Group of Sediment Sample Locations Representative of the Site:** In the table below, Ecology provides a list of sampling locations which we have determined are chemically, temporally, and spatially similar. All samples were collected, within a period of a few years, from Hopkins Ditch and associated freshwater wetlands at approximately the surface. The excavation base samples are included in the analysis, as those were collected from the freshly excavated and new land surface at the time.

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<sup>12</sup> <https://apps.ecology.wa.gov/publications/SummaryPages/0907008.html>

These excavation confirmatory samples are now approximately two feet below ground surface because of backfilling. The sediment sample locations presented in the table below are more likely than not sufficient to determine if the release of hazardous substances at the Site requires additional evaluation or if current concentrations are sufficiently protective of exposure pathways.

Sample ID	Lead Concentrations <sup>13</sup>	Sample ID	Total cPAHs <sup>14</sup>
WS10	165	SS2	0.5815
WS11	67	SS3	0.672
WS12	21	SS4	0.749
WS13	47	SS5	2.646
WS14	17	WS6	0.5815
WS15	9	WS7	0.5376
WS16	8	WS8	0.6187
WS17	8	S-EX #2-1-2	0.2996
WS19	11	S-EX #2-2-2	0.2905
WS20	43		
WS21	123		
WS22	15		
WS23	13		
WS24	85		
S-EX #1-1-2	5		
S-EX #1-2-2	5		
S-EX #2-1-2	5		
S-EX #2-2-2	5		
<b>Sample Mean of Three Greatest Concentrations</b>			
	124.3		1.36
<b>Standard Deviation</b>			
	46.06		0.72
<b>Kaplan-Meier 90/90 Upper Tolerance Limit on Mean of All Samples</b>			
	96.4		1.13
<b>Benthic Sediment Cleanup Objective</b>			
	360		17
<b>Benthic Cleanup Screening Level</b>			
	>1300		30

1. To evaluate a potential station cluster for compliance with sediment cleanup objectives, as described in WAC 173-204-520, the three greatest concentrations of potential chemicals of concern were selected. For lead and cPAHs, this was the three remaining locations with the highest post-remedial concentrations associated with Hopkins Ditch. These excavations were critical for reducing contamination levels.
  - a. For lead, the mean of concentrations of WS10 (165 milligrams per kilogram [mg/kg]), WS21 (123mg/kg), and WS24 (85 mg/kg), is 124.3 mg/kg, which is less than the sediment cleanup objective for freshwater of 360 mg/kg.<sup>14</sup> The currently proposed lead cleanup level for the upland portion of the Site is 250 mg/kg, which is the MTCA

<sup>13</sup> Dry Weight in mg/kg.

<sup>14</sup> WAC 173-204-560

Method A cleanup level for soil and more stringent than the sediment cleanup objective, and thus the upland portion of the Site is protective of the sediment portion of the Site.

- b. For cPAHs, the mean concentrations of the highest three concentrations was 1.36 mg/kg. To determine if a potential sediment Site of concern exists at the Site, the sum of PAHs was used to determine compliance. In order to be as conservatively protective, the reporting limit was used if a particular cPAH was not detected. The value of 1.36 mg/kg is less than the sediment cleanup objective of 17 mg/kg. The currently proposed cPAHs cleanup level for the upland portion of the Site is 0.1 mg/kg, which is the MTCA Method A cleanup level for soil and more stringent than the sediment cleanup objective value.

**Discussion:** For the remedial investigation, the results of confirmatory samples obtained at the excavations to remediate WS6 and WS8 were incorrectly compared to MTCA Method A upland cleanup values under WAC 173-340. Samples were not compared to appropriate sediment management standard dry weight sediment cleanup objectives or cleanup screening levels contained in WAC 173-204-561 through 563, or evaluated for human health impacts under the sediment regulation. A statistical analysis of sufficient appropriate sample results would normally be conducted to evaluate compliance with sediment benthic and human health criteria. This was not done. PAH contamination was also not provided using the required toxic equivalency basis.<sup>15</sup>

Ecology reevaluated the reported Site data. For our evaluation, Ecology compared non-detect remedial performance analytical results to freshwater sediment cleanup screening levels for the protection of benthic invertebrates contained in WAC 173-204-563. Ecology assumed that additional representative samples from this area would also result in non-detect values below sediment cleanup screening levels. We also assumed that sediment cleanup screening levels for benthic invertebrates are also likely protective for human health impacts. We believe these assumptions are reasonable and appropriate given the specific dataset and site conditions.

Nonetheless, Ecology normally requires more than two confirmatory sampling locations from an excavation to demonstrate compliance of post-remedial Site hazardous substances. Additional samples collected immediately at the historical location of both WS6 and WS18, and WS8 before backfilling, would have made it easier for Ecology to concur that the remediation was successful.<sup>16</sup>

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<sup>15</sup> Ecology Implementation Memorandum #10: *Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) using Toxicity Equivalency Factors (TEFs)*, Publication number 15-09-049, April 2015. Available at <https://apps.ecology.wa.gov/publications/SummaryPages/1509049.html>

<sup>16</sup> WAC 173-340-515(3). Ecology is limited for independent cleanup sites to concur or not concur with completed or proposed cleanup/remedial actions. For future reference, we encourage sampling plans which collect several samples in all the necessary locations to make it as simple as possible for us to evaluate the effectiveness of the remedial action taken, and for us to agree how confirmatory sampling results comply with cleanup level(s).



In making our determination that the Site includes surface water and sediment, Ecology reviewed the following information.

***Evidence Against Hopkins Ditch Surface Water and Sediment***

1. Based on additional information provided by Robinson-Noble in an email on October 15, 2020, it is possible that WS6 and WS18, as well as WS8, were collected in areas which do not meet the definition of sediment per WAC 173-204.
2. Based on observations made in August 2019 at the time of the most recent excavations, the WS6 and WS8 locations were not inundated. Surface water was not present. Groundwater was not reported as present in any of the three excavations.
3. Normandeau's *Wetlands Delineation Report*<sup>17</sup> provides images of wetlands A and B during their site visit on June 10, 2014. Also pictured are relatively dry soil conditions in the top six inches of soil. Normandeau did not identify either wetland A or B, where Site contamination had come to be located, as inundated.
4. Ecology's Site Hazard Assessment, Worksheet #4, indicated that Hopkins Ditch was "ephemeral" and not surface water (p. 6).

***Evidence For Hopkins Ditch Surface Water and Sediment***

1. WAC 173-226-030(26) includes wetlands as a surface water of the state.
2. In an email dated June 26, 2013, Ecology previously recommended surface water and sediment samples be collected from the Hopkins Ditch.
3. Hopkins Ditch was originally approved for construction in 1901 as a surface water conveyance to reduce flooding in the area of what is now 93<sup>rd</sup> Street Southeast.<sup>18</sup> Satellite photos from the early 2000s to present frequently show water in the ditch.
4. Hopkins Ditch reported to represent surface water for the Site.<sup>19</sup>
5. Based on satellite and aerial photographs, water appeared to pond at the excavation removing the contamination at soil sampling location PS1.
6. The Hopkins Ditch is included in the national hydrography dataset.
7. Ecology observed standing water during a site visit in June 2013.

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<sup>17</sup> October 14, 2014

<sup>18</sup> <https://www.ci.tumwater.wa.us/home/showpublisheddocument?id=3918>

<sup>19</sup> p. 2 in Robinson-Noble's *Remedial Investigation* report, July 2013.

8. Normandeau's Wetlands Delineation Report identified Wetland C as inundated. Though wetland C is in the far southeastern portion of the Property and outside of the Site, protection of this pond area as surface water may be necessary.
9. Ecology observed surface water in Hopkins Ditch in an authorized Site visit on February 13, 2018, as part of the scoping for the construction stormwater general permit. Selected Site visit photographs of Hopkins Ditch (looking south and southeast from monitoring well MW-2) are included as **Enclosure C**.
10. Ecology's Shorelands and Environmental Assessment Program email from August 15, 2018, supports surface water and sediment being present at the Site.<sup>20</sup> Based on current information, the preponderance of the evidence supports the surface water and sediment pathways as potentially complete for the Site and must be evaluated. Sites on properties which abut or are near surface water must also evaluate the surface water pathway, per WAC 173-340-720(8).

### ***Comments on Surface Water Contamination***

Ecology recognizes and appreciates your efforts to clean up the wetlands in August 2019. Ecology believes it was protective of the environment to complete the excavations in the wetlands areas when you did, in order to 1) reduce potential runoff into surface water; and 2) avoid contaminated surface water directly during the excavation. These efforts will help us eventually determine that no further action is necessary to clean up surface water at the Site.

Because surface water has been present at the Site, surface water must also be considered in the remedial investigation.<sup>21</sup> Ecology suggests you evaluate and report whether it is more likely than not surface water contamination is present at the Site above surface water cleanup screening levels. Ecology recommends the following to determine if the surface water pathway requires any additional evaluation for the Site:

**In order to confirm that there are no impacts to surface water, Ecology recommends sampling surface water in Hopkins Ditch as close to each south excavation as possible. Preferably the sampling would take place in the later winter to early spring (flood season). A third sampling location is recommended upstream of the excavation locations. Each of the minimum three surface water samples should be analyzed for cPAHs, total lead, and dissolved lead.**

1. Carefully document each sampling location. Photographs are recommended. Dissolved lead in water could be laboratory or field filtered, though field filtering is recommended.

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<sup>20</sup> Ecology, Re: CSWGP for John's Auto Wrecking Site, June 18, 2018. Included in Enclosure D.

<sup>21</sup> WAC 173-340-720(8)

2. Ensure to report all results above laboratory method detection limits. Qualify all estimated values between method detection limits and practical quantitation limits.
3. If contaminant concentrations are less than the most stringent surface water standards, and because the upland cleanup has removed the possibility of ongoing release, then it appears more likely than not that the surface water pathway is incomplete at the Site. If the surface water pathway is incomplete, then groundwater cleanup levels apply at the Site.
4. The surface water sampling also provides quantitative data to show that runoff from the Site has not impacted Hopkins Ditch.
5. Per WAC 173-340-720(9)(c)(iv), compliance must be determined for Hopkins Ditch even if the wetlands function as a spring.

### ***Comments on Pond Excavation to remove cPAH Contamination***

At soil sample location PS-1, cPAH exceeded MTCA Method A cleanup levels (on a toxic equivalency basis, and in reference to benzo[a]pyrene). The MTCA Method A cleanup level for benzo[a]pyrene of 0.1 mg/kg<sup>22</sup> is more stringent than other applicable cPAH screening levels: the MTCA Method B direct contact cleanup level of 0.137 mg/kg, the benthic sediment cleanup objective level of 360 mg/kg, and the Table 749-3<sup>23</sup> ecological indicator value of 12 mg/kg. The MTCA Method A cleanup level for benzo[a]pyrene (representing a group of seven cPAHs) is compared to the toxicity equivalency quotient (TEQ) combined adjusted values, though each cPAH concentration in soil is adjusted using a toxicity equivalency factor (TEF).<sup>24</sup> Therefore, if remediation results are protective of the Method A cleanup value of 0.1 mg/kg, then the remediation has been successful.

In August 2019, approximately 30 cubic yards of soil was removed from the pond area of AOC-9 to remove the cPAH contamination. The pond is reportedly manmade. The duration of standing water in the pond area in any given year is uncertain, though the area is a low depression in a high hazard groundwater area of the Site. Based on the information you provided, Ecology believes that it is more likely than not that the pond is not inundated for at least six consecutive weeks a year, and that soil and groundwater are therefore the applicable pathways. Surface water and sediment pathways do not need to be evaluated for the pond excavation.

### ***pH in Groundwater at MW-1***

Ecology was previously concerned that the pH in groundwater at MW-1 for two sampling events was not in compliance with the standard of 6.5-8.5 pH units, under WAC 173-200. Two additional and later groundwater sampling events showed that the pH of groundwater at MW-1 were in compliance. You provided additional information regarding the pH in MW-1

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<sup>22</sup> WAC 173-340-900, Table 740-1

<sup>23</sup> WAC 173-340-900

<sup>24</sup> WAC 173-340-900, Table 708-2.

via email on January 14, 2021 (**Enclosure D**). Based on the information presented, Ecology concurs that it is more likely than not that the groundwater standard for pH at the Site is in compliance.

### ***Lead in Groundwater at MW-1***

The concentrations of metals sampled for in groundwater at monitoring well MW-1, sampled in April 2013 and quarterly from October 2014 through August 2015, were generally less than the proposed cleanup levels.

The exception was the concentration of total lead in the duplicate sample during the August 2015 monitoring event (16 micrograms per Liter [ $\mu\text{g/L}$ ] vs. the 15  $\mu\text{g/L}$  MTCA Method A cleanup level for lead in groundwater). The original August 2015 sample for lead in groundwater did not exceed the MTCA Method A cleanup level.

Robinson-Noble indicated that sample turbidity was likely the cause of the exceedance, because dissolved lead was 7  $\mu\text{g/L}$  (less than the MTCA Method A cleanup level), and that no lead had been detected in groundwater prior to the August 2015 groundwater monitoring event. The sampling data from MW-1 appear to meet the requirements for compliance monitoring as outlined in section 10.3 in Ecology publication no. 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*, revised June 2016.

**Ecology concurs that it is more likely than not that the concentration of lead in groundwater at MW-1 complies with the proposed MTCA Method A cleanup level. However, surface water sampling results from Hopkins Ditch are necessary for Ecology to concur that lead concentrations in MW-1 are protective of the surface water pathway.**

### ***Site Groundwater Monitoring***

In our August 22, 2011, opinion letter, Ecology recommended evaluating Site groundwater by installing monitoring wells at test pits TP1A and TP6A (part of AOC-1) and AOCs 3, 5, and 9. Ecology recommended groundwater sampling from temporary wells or probes at AOCs 2, 4, 7, and 8. Groundwater monitoring was proposed AOCs below based on the proposed sampling points.

<b>AOC</b>	<b>Monitoring Well ID</b>	<b>Temporary Boring ID</b>
1	None	B12, B13, B14
2	MW-4	B24, B25
3	None	B15, B16, B17
4	None	None
7	MW-1	B20, B21, B22
8	MW-1	B20, B21, B22
9A	MW-5	B23
9B	MW-2, MW-3	B24, B25

From the temporary borings, groundwater was sampled directly from the screen extended beyond the tooling drilled into the subsurface using a direct push rig. Based on Ecology's concurrence with the February 2012 remedial investigation work plan and field realities, a different mix of permanent and temporary sampling points were used than originally anticipated.

During implementation of the work plan, field investigation activities resulted in additional groundwater testing being conducted at these AOCs:<sup>25</sup>

AOC	Monitoring Well ID	Temporary Boring ID
1	None	B13
2	MW-4	None
3	9B	B15, B16, B17
4	None	None
5	None	B18
6	None	B6, B19
7 & 8	MW-1	B20, B21, B22
9A	MW-5	B23
9B	MW-2, MW-3	B24, B25
None	N/A	B18

Since 2011, Site groundwater monitoring has been collected at several temporary and at five permanently constructed groundwater monitoring wells, MW-1 through MW-5. The permanent monitoring wells were installed to evaluate whether or not temporary well groundwater analytical results were representative of Site groundwater conditions, and to confirm Site groundwater flow directions. In a January 31, 2014, email, Ecology concurred with the proposal of completing four consecutive quarterly compliant monitoring events at MW-1 and one groundwater sampling event at MW-2 through MW-5. To date, it appears dissolved metals concentrations have been used at all grab groundwater and monitoring well locations to determine compliance with cleanup levels.

All of Ecology's suggestions for independent cleanups, including suggestions for groundwater monitoring frequency, are dependent on Ecology's constantly improving knowledge, guidance, and regulations. Ecology's current 2016 Petroleum Guidance<sup>26</sup> document provides two options to demonstrate compliance of Site hazardous substances concentrations in groundwater with cleanup levels, and provides our current suggestions for evaluating Site compliance with cleanup levels.

Compliance is determined on a per well or location basis. Please ensure to document how you evaluated groundwater compliance for this cleanup sufficient for Ecology's concurrence using either of the following approaches:

1. Use the statistical analysis options presented in WAC 173-340-720(9).

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<sup>25</sup> See Areas of Concern and Current Investigation Figure, July 2013.

<sup>26</sup> Section 10.3 in Ecology Publication 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*, revised June 2016.

2. Conduct an empirical demonstration. Ecology concurs with Robinson-Noble's analysis that "four quarters of clean results" is not specifically codified. Ecology's Petroleum Guidance<sup>27</sup> provides direction on how to evaluate groundwater monitoring results.
  - a. With reference to Stage II Monitoring provided in Ecology's Petroleum Guidance, "four consecutive quarters clean" for groundwater results is the typically sufficient number of events to demonstrate compliance at a routine petroleum cleanup Site where contamination was detected, but was below cleanup levels for the remedial investigation.
  - b. If following the Section 10.3 sampling recommendations in Ecology's Petroleum Guidance, Stage III monitoring compliance at a Site which includes or is adjacent to a wetland, typically eight consecutive quarterly compliant events are required.
  - c. Compliant groundwater monitoring results using the statistical methodology in WAC 173-340-720(9) typically requires at least 11 or 12 consecutive quarterly sampling events to reduce statistical error and increase statistical confidence.
  - d. Thus, when Ecology concurs with groundwater sampling results, needing only four quarterly groundwater monitoring events at one or more wells at a Site like this one should be viewed as a minimum requirement and is more applicable for sites where no exceedances of cleanup screening levels has occurred.

Monitoring Well ID	AOC	Confirmed Grab Groundwater Locations	Exceedances of Selected Screening Levels in Grab Groundwater Samples?
MW-1	7 & 8	B20, B21, B22	Yes
MW-2	9B	B24, B25	Yes
MW-3	9B	B25	Yes
MW-4	2	None	Yes
MW-5	9A	B23	No
None	3	B15, B16, B17	Yes
None	6	B19	Yes
None	1	B12, B13, B14	No
None	5	B18	No

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<sup>27</sup> See Stage III monitoring on p. 160 and related footnote 37 on same page in Ecology Publication 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*, revised June 2016.

### ***Hexavalent Chromium***

Referring to chromium MTCA Method A cleanup levels for soil, two different cleanup levels are available, depending on if the species of chromium in soil is of the trivalent (2,000 mg/kg) or hexavalent (19 mg/kg) species in nature. The MTCA Method A cleanup value for chromium in groundwater is 50 µg/L, regardless of chromium species. However, cleanup levels may have to be adjusted downward to a more stringent scenario, depending on Site-specific conditions.

At this Site, hexavalent chromium was tested for and not detected in either soil or groundwater. Based on these results, chromium in Site soils and groundwater are of the trivalent species, and total chromium concentrations apply to evaluate Site chromium concentrations. Hexavalent chromium does not appear to be present at the Site.

### ***Terrestrial Ecological Evaluation (TEE) Comments***

It appears that the concentrations of Site hazardous substances reviewed as part of the Site-specific TEE require no additional evaluation for the Site. Coho Environmental (Coho) completed a Site-specific TEE for the Site. Ecology concurs that a Site-specific TEE is appropriate for the Site.

Coho calculated the 95% upper confidence limit (UCL) for each Site hazardous substance and compared those ecological indicator values protective of ecological receptors in Table 749-3.<sup>28</sup> Based on Coho's evaluation, only the 95% UCL for nickel exceeded a Table 749-3 value and required additional evaluation as a Site hazardous substance. Coho determined that nickel did not constitute a risk to Site ecological receptors. Ecology concurs that the calculated 95% UCLs, when done for the northern and southern property boundaries, are correctly calculated and less than the most stringent Table 749-3 value, except for nickel, which was evaluated further.

The WAC 173-340-900, Table 749-3 values for nickel are: plants (30 mg/kg) soil biota (200 mg/kg), and wildlife (980 mg/kg) for wildlife. For nickel, the background concentration for the Puget Sound is 48 mg/kg.<sup>29</sup> Plant growth is extensive across the Site; including areas where nickel concentrations in soil exceeded the background value of 48 mg/kg. Nickel concentrations, based on the analysis presented, had a 95% UCL approximating the background concentration, and maximum nickel concentrations in soil were less than two times the soil biota concentrations and less than the wildlife value.

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<sup>28</sup> WAC 173-340-900. The ecological indicator values are screening values to determine if additional evaluation is warranted. These values are not necessarily cleanup levels.

<sup>29</sup> Ecology publication 94-115, *Natural Background Soil Metals Concentrations in Washington State*, October 1994.

### ***Air/Vapor Pathway***

There are no structures within 30 feet of the Site. Remaining contaminants are metals in soil, or are at concentrations less than MTCA Method A screening levels. When MTCA Method A screening levels are met for petroleum cleanup sites, generally this is sufficiently protective of Site air quality (including soil vapor).<sup>30</sup> There are no residual petroleum or volatile organic compounds at the Site at concentrations (e.g., exceeds the MTCA Method A cleanup level<sup>31</sup> for diesel or benzene in soil) which would pose a risk for vapor intrusion. Based on data presented to date, unless new information suggests otherwise, the vapor pathway is incomplete for the Site. No further evaluation of the air/vapor intrusion pathway is needed.

### ***Domestic Water Wells Review***

Ecology reviewed domestic water supply wells located within a one-mile radius of the Site. Domestic supply wells appear to be screened from at least 42 feet below ground surface (bgs), though most wells are screened at over 70 feet bgs. Groundwater data suggest that Site groundwater is not currently impacted at concentrations exceeding cleanup levels protective of drinking water. Therefore, Site hazardous substance concentrations in groundwater are not likely a threat to these domestic supply wells. Unless new data suggest otherwise, drinking water at these domestic supply wells is not at risk.

### ***Environmental Information Management (EIM) Database***

On August 28, 2020, your upload of Site data was accepted and ready for review. It does not appear that the metals in soil data have been uploaded for AOC-10, or test pits TP12 through TP18. Please verify that all groundwater monitoring data for all samples collected from monitoring wells MW-4 and MW-5 have been uploaded. Please ensure that all required data have been uploaded to EIM. In accordance with Ecology policy 840, all Site data collected after August 1, 2005 must be uploaded into EIM.<sup>32</sup>

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<sup>30</sup> Ecology Publication No. 17-09-043, Implementation Memorandum No. 18, *Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings*, January 10, 2018

<sup>31</sup> Ecology Publication No. 17-09-043, Implementation Memorandum No. 18, *Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings*, January 10, 2018

<sup>32</sup> Also required by WAC 173-340-840(5).



## 2. Establishment of Cleanup Standards.

Ecology has determined the cleanup standards proposed do not meet the substantive requirements of MTCA.

**Cleanup Standards:** Under MTCA, cleanup standards consist of three primary components; (a.) points of compliance,<sup>33</sup> (b.) cleanup levels,<sup>34</sup> and (c.) applicable state and federal laws.<sup>35</sup> These standards are set for the entire Site, though specific areas of concern may meet cleanup standards before others. If applicable, the sediment management standards (SMS) under WAC 173-204 are incorporated into MTCA per WAC 173-340-760.

- a. **Points of Compliance:** Points of compliance, that you need to propose, are the specific locations at the Site where cleanup levels must be attained. For clarity, Ecology provides the following table of standard points of compliance:

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. <sup>36</sup>
Soil- Protection of Groundwater	Based on the protection of groundwater, the standard point of compliance is throughout the Site. <sup>37</sup>
Soil-Protection of Plants, Animals, and Soil Biota	Based on ecological protection, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface. <sup>38</sup>
Soil – Surface Water Protection	Based on protection of the leaching pathway to groundwater, where groundwater connects to surface water.
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. <sup>39</sup>
Groundwater-Surface Water Protection	Based on the protection of surface water, the standard point of compliance is all locations where hazardous substances are released to surface water. <sup>40</sup>
Air Quality	Based on the protection of air quality, the point of compliance is indoor and ambient air throughout the Site. <sup>41</sup>
Sediment	Based on the protection of sediment quality, compliance with the requirements of 173-204 WAC. <sup>42</sup>

<sup>33</sup> WAC 173-340-200 "Point of Compliance."

<sup>34</sup> WAC 173-340-200 "Cleanup level."

<sup>35</sup> WAC 173-340-200 "Applicable state and federal laws," WAC 173-340-700(3)(c)

<sup>36</sup> WAC 173-340-740 (6)(d)

<sup>37</sup> WAC 173-340-747

<sup>38</sup> WAC 173-340-7490(4)(b)

<sup>39</sup> WAC 173-340-720(8)(b)

<sup>40</sup> WAC 173-340-730(6)

<sup>41</sup> WAC 173-340-750(6)

<sup>42</sup> WAC 173-340-760

- b. **Cleanup Levels:** Cleanup levels are the concentrations of a hazardous substance in soil, water, air, ecological receptors, surface water, or sediment that are determined to be protective of human health and the environment. To date, soil and groundwater cleanup levels proposed for Site hazardous substances have used MTCA Method A cleanup levels for unrestricted land use. Additionally, the MTCA Method B cleanup levels for Site hazardous substances in soil (direct contact cleanup levels) and in groundwater without a Method A value, have been used to screen analytical results.

It appears that the following cleanup levels were used to screen Site hazardous substances for the upland portion of the cleanup:

Site Hazardous Substance	MTCA Method Cleanup Level	Soil Cleanup Level (mg/kg)	Groundwater Cleanup Level (µg/L)
TPH as gasoline	A/A	100	1,000
TPH as diesel and heavy oil	A/A	500	500
TPH as mineral oil	A/A	4,000	500
Arsenic	A/A	20	5
Cadmium	A/A	2	5
Chromium	A/A	2,000	50
Copper	B/B	3,200	640
Lead	A/A	250	15
Mercury	A/A	2	2
Nickel	B/B	1,600	100
Zinc	B/B	24,000 <sup>43</sup>	600
cPAHs (as benzo[a]pyrene)	A/A	0.1	0.1
PCBs	A/A	1.0	0.1
PCE	A/A	0.05	5

Where appropriate as the most stringent cleanup level for the Site (including for specific pathway or media at the Site), MTCA Method A cleanup levels can be incorporated into a MTCA Method B cleanup per WAC 173-340-700(8)(b)(i).

Ecology views setting cleanup levels for this Site as a MTCA Method B cleanup Site, where Method B would be used to establish cleanup levels. When the most stringent cleanup levels available are Method A cleanup levels, these would be incorporated into the Method B cleanup.

- i. These cleanup levels apply to Site hazardous substances which have not already been screened out. Examples of Site hazardous substances which do not require any additional evaluation are: PCBs, VOCs, petroleum hydrocarbons, and metals like arsenic and cadmium.

<sup>43</sup> MTCA Method B for zinc in soil protective of the leaching pathway at 6,000 mg/kg should be used to screen analytical results. This is the value from Ecology's CLARC tables, February 2021. Zinc was detected in groundwater at MW-1, and so zinc in soil at the Site must be protective of the leaching pathway.

- ii. Even though some parcels are zoned industrial, and we recognize that you have not proposed industrial cleanup levels to date, Ecology does not support Method A Industrial or Method C cleanup levels (for industrial facilities) at the Site. The Site is best represented by cleanup levels for unrestricted land use. The Site does not meet the definition for an industrial Site<sup>44</sup> to use Method C.
- iii. Total metals, when concentrations were detected or exceeded cleanup levels in groundwater, were not detected as dissolved metals in groundwater. Based on past discussions with Ecology, dissolved metals in groundwater concentrations are appropriate for determining compliance with levels instead of total metals. This decision is supported by WAC 173-340-720(9).

Cleanup levels are set for the entire Site. Surface water and sediment cleanup levels, when applicable, are set for the sediment unit at the Site. Additionally, concentrations of Site hazardous substances in the upland portion of a Site must also be protective of surface water and sediment when those pathways are complete.

The surface water cleanup presented in the table below, are protective of aquatic life, as Ecology determined in the sediment evaluation portion of this letter that human health for sediment did not require further evaluation. For this Site, concentrations of Site hazardous substances in surface water have to be less than those cleanup levels protective of freshwater aquatic life, in order to ensure that contaminants don't precipitate out and contaminate sediments, which could then hurt benthic communities in sediment. Site groundwater then has to contain concentrations of Site hazardous substances which are less than surface water cleanup levels to ensure that surface water is not impacted by the concentrations in groundwater, which in turn won't impact benthic communities in sediment.

- i. Surface water cleanup levels proposed in the table below are the most stringent of those protective of fresh water aquatic life (either acute or chronic) under the Clean Water Act, the Washington State Surface Water Standards, and the calculated values from the MTCA Method B formula for cancer risk.

Of note, air quality cleanup levels and points of compliance are not necessary because concentrations of volatile chemicals in soil are less than the MTCA Method A or B cleanup levels, and the nearest structure is over 30 feet from the Site.<sup>45</sup>

Additionally, Site hazardous substances in groundwater for the upland portion of the Site have to meet cleanup levels protective of drinking water standards (human health), as all groundwater at the Site is considered potable.

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<sup>44</sup> WAC 173-340-200, -706 and -745.

<sup>45</sup> See Ecology Publication No. 17-09-043, *Implementation Memorandum No. 18: Petroleum Vapor Intrusion (VI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings*, revised January 2018.

No demonstration has been conducted at the Site in accordance with WAC 173-340-720(2) to show that Site groundwater is non-potable, so Ecology is required to conclude that all Site groundwater is potable. In our opinion, none of the tests for groundwater potability under WAC 173-340-720(2) would show that Site groundwater is non-potable, and Ecology does not recommend you attempt any of these tests.

Soil and groundwater cleanup values protective of surface water, may be also be necessary for the upland portion of a Site. These cleanup values protective of surface water are in addition to soil cleanup levels protective of the direct contact, leaching, and ecological pathways, as well as groundwater cleanup levels protective of drinking water standards. Generally, the most stringent of all applicable cleanup levels applies.

Applicable surface water cleanup levels are summarized in the table below. Surface water must be protective of sediment, and the Site hazardous substances found associated with the sediment unit are lead and cPAHs.

Site Hazardous Substance	Surface Water Cleanup Level (µg/L)
Lead	2.5 <sup>46</sup> (acute)
Lead	65 <sup>47</sup> (chronic)
cPAHs	0.035 <sup>48</sup>

For those groundwater samples collected from the upland portion of the Site, you suggested that total metals concentrations in Site groundwater are more likely than not the result of sample turbidity.<sup>49</sup> Based on available information, and as provided by WAC 173-340-720(9)(b), Ecology concurs, to the extent allowed, to use the concentrations of dissolved metals in groundwater to determine compliance with cleanup levels. Ecology's determination is Site-specific.

- c. Applicable Laws and Regulations.** In addition to establishing minimum requirements for cleanup standards, applicable local, state, and federal laws may also impose certain technical and procedural requirements for performing cleanup actions. These requirements are described in WAC 173-340-710. An [online tool](#)<sup>50</sup> is currently available to help you evaluate the local requirements that may be necessary.

All cleanup actions conducted under MTCA shall comply with applicable state and federal laws.<sup>51</sup> The person conducting a cleanup action shall identify all applicable local, state, and federal laws.

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<sup>46</sup> Clean Water Act value for acute risk to freshwater aquatic life.

<sup>47</sup> Clean Water Act value for chronic risk to freshwater aquatic life.

<sup>48</sup> TEF compared to benzo[a]pyrene MTCA Method B cancer value. There are no Clean Water Act acute or chronic risk values for cPAHs for freshwater aquatic organisms.

<sup>49</sup> p. 12 in the Robinson-Noble's *Supplemental Remedial Investigation/Cleanup Action*, May 15, 2020

<sup>50</sup> <https://apps.oria.wa.gov/opas/index.asp>

<sup>51</sup> WAC 173-340-710(1)

The department shall make the final interpretation on whether these requirements have been correctly identified and are legally applicable or relevant and appropriate.<sup>52,53</sup>

There are three general groups of applicable local, state, and federal laws that need to be included:

- i. **Chemical-Specific:** Examples of chemical-specific laws include promulgated concentrations from another rule that result in adjusting proposed cleanup levels. Method A is inclusive of these laws. For Methods B or C, additional evaluation of chemical-specific applicable state and federal laws is required.
- ii. **Action-Specific:** Examples of action-specific laws include requirements for obtaining local permits to excavate and/or dispose of contaminated soil, stormwater construction permits, or the requirement to notify local law enforcement in case human remains are discovered during excavation. All MTCA cleanups require evaluation of action-specific applicable state and federal laws.
- iii. **Location-Specific:** Examples of location-specific laws include specific requirements for working near wetlands or archeologically important areas. All MTCA cleanups require evaluation of location-specific applicable state and federal laws.

Ecology identifies these applicable laws and regulations as applicable to the Site in **Enclosure E**.

**Please review if any additional applicable state and federal requirements apply to the cleanup, and if/how they affect cleanup levels. If no additional requirements are necessary, please support that determination.**

### 3. Selection of Cleanup Action.

Additional information, as described in this opinion, is necessary for Ecology to concur that the cleanup action selected meets the substantive requirements of MTCA for the entire Site.

Excavation has been selected as the independent interim action to remove contaminated soils in various AOCs at the Site. Debris related to the former auto wrecking business has been removed from the Site. Cleanup standards threshold requirements, presuming continued unrestricted land use, are detailed in WAC 173-340-360(2)(a) and -360(2)(d).

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<sup>52</sup> WAC 173-340-710(2)

<sup>53</sup> Note – MTCA Method A includes ARARs and concentration-based tables (WAC 173-340-700(5)(a)) If MTCA Method A remains in use as proposed Site cleanup levels, identify non-concentration based technical and procedural requirements. If Method B or C cleanup levels are proposed, also include concentration-based requirements.

#### 4. Cleanup.

Ecology has determined the cleanup you performed does likely meet cleanup standards for many Site AOCs. When cleanup standards are proposed for a Site, they have to be protective of the most stringent of possible Site scenarios. Review of specific locations, excavations, and AOCs is provided below.

Many contaminants, like TPH in soil and groundwater and PCBs in soil, were not detected at concentrations exceeding the proposed cleanup levels. Thus, additional cleanup was not required at these locations.

Monitoring wells were installed at selected AOCs to determine compliance with cleanup levels at a standard point of compliance for groundwater at these locations (MW-1: AOCs 7 & 8, MW-2 and MW-3: AOC-9B, MW-4: AOC-2, MW-5: AOC-9A). Grab groundwater samples were collected for all other AOCs. Ecology evaluated groundwater results in the upland portion of the Site for each AOC, comparing grab groundwater data collected or groundwater data collected from properly constructed monitoring wells to cleanup levels. The evaluation was completed on a location by location basis.<sup>54</sup> Ecology concurred that dissolved metals concentration in groundwater were appropriate to determine compliance with cleanup standards.

For those AOCs where Site hazardous substance concentrations in groundwater were less than cleanup levels, no further groundwater sampling appears to be necessary. Additional evaluation for compliance for those AOCs which contain monitoring wells is necessary, as discussed earlier in this letter.

Cleanup of more specific Site hazardous substance locations at the Site is discussed below.

##### ***TP-22-1: Paraffin oil***

No further testing or cleanup of soil for paraffin oil or mineral oil is necessary for AOC-12.

Paraffin oil (e.g., kerosene) was identified in soil at a concentration of 1,020 mg/kg in test pit TP-22 at one foot depth. The soil sample was collected in November 2014. The soil sample location was delineated vertically by the results of another sample collected at three feet bgs in the same test pit.

The TP-22-1 paraffin oil concentration was not retained for further discussion in the TEE, because no detections of paraffin oil occurred elsewhere at the Site. As the Site is a conglomeration of independent releases from similar operations, Ecology believes that this concentration of paraffin oil in soil should have been further evaluated.

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<sup>54</sup> WAC 173-340-720(9)(c)(iv)

Additionally, the paraffin oil concentration exceeds the diesel range organics ecological indicator criteria for soil presented in Table 749-3,<sup>55</sup> warranting some additional discussion. Ecology provides that evaluation here, under the authority granted to Ecology by WAC 173-340-515(5).

For soil sample TP-22-1, neither gasoline nor diesel (extended analysis, including heavy oil) were detected. Additionally, paraffin oil elutes most similarly to mineral oil. Thus, based on the available data, it appears that mineral oil is the most appropriate contaminant by which to screen the paraffin oil in soil results at this location. The contaminated soil is above the water table in AOC-12. Compared to the MTCA Method A cleanup level for mineral oil (4,000 mg/kg, and the most stringent available standard cleanup level for mineral oil), the concentration of 1,020 mg/kg for paraffin oil in soil is in compliance.

### **Excavations**

These are the contaminated soil sample locations which have been removed and where confirmatory soil sampling (and groundwater sampling, where applicable) show that concentrations of remaining Site hazardous substances comply with cleanup levels:

<b>Excavation</b>	<b>Location</b>	<b>Contaminant</b>	<b>Concentration (mg/kg)</b>
North	TP14-1.5	Lead	5,552
South #1	W6, WS18	Lead	1,230 and 386
South #2	W8	Lead, cPAHs	525 and 0.110
Pond	PS1	cPAHs	0.282

### **North Excavation**

Contamination at one foot below ground surface in AOC-10 was removed by excavation and disposed of at an approved facility. Based on the excavation extent sampling results, the Site hazardous substances concentrations were all less than cleanup levels. Metals concentrations in soil were also less than background. No additional action appears to be necessary at the north excavation.

### **PS1 Location/Pond Cleanup**

Based on the information provided to Ecology by email on October 15, 2020, as well as information provided in the Report, the pond at the Site in AOC-9 appears to be anthropogenic. We concur with you that the pond is not sediment, meeting the definition of WAC 173-204-505(22), and periodic high water (see **Enclosure D**) does not represent inundation for at least six weeks. Most available satellite photos do not show pooled water present in the pond.

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<sup>55</sup> WAC 173-340-900

The concentration of cPAHs of 0.282 mg/kg at location PS1 was removed in August 2019 by excavation of approximately 30 cubic yards of soil with off-Site disposal. Confirmatory soil sampling locations P-2 and P-3 appear to have been collected several feet from the historically contaminated location of PS1. Two confirmatory soil sampling locations may have been appropriate if the incremental sampling method had been used to sample the entire extent of the pond, but this does not appear to be the case. There does not appear to have been a confirmatory sample collected in the immediate vicinity of PS1.

**In order to confirm that the cPAHs contamination at PS1 has been adequately removed, Ecology requests that you collect at least one sample at historical sampling location PS1 and analyze for cPAHs.**

### ***South Excavations #1 and #2***

These two areas of lead contamination were removed by "south remedial excavation #1 and #2." South excavation #1 was to remove lead contamination at WS6 and WS18 and south excavation #2 was to remove lead and cPAHs contamination at WS8. Approximately 39 cubic yards was removed from excavation #1 and 38 cubic yards from excavation #2. In Section 1 of this opinion, Ecology provides an analysis of why Site hazardous substances concentrations in sediment at the Site do not represent a Site of potential concern for sediment. Unless surface water confirmatory sampling results suggest otherwise, it appears that the excavations removed the contaminated sediment. Again, unless the confirmatory surface water sampling results suggest otherwise, it is more likely than not that no additional evaluation for sediment at the Site appears to be necessary.

Based on the data presented, Ecology concurs that your cleanup has more likely than not successfully removed the lead and cPAHs contamination from the Hopkins Ditch. Ecology looks forward to your reporting of performance samples obtained from surface water near the locations of contamination to ensure that the remedy is protective of the surface water pathway.

### ***Current AOC Status***

Confirmatory groundwater sampling for a suite of contaminants under WAC 173-340-900, Table 830-1, was conducted at grab groundwater sampling points in both AOC-6 and AOC-13. A permanent monitoring well was not installed in either AOC because only total metals and no other suspected contaminants (petroleum hydrocarbons, PCBs, cPAHs, VOCs) were detected.

Compliance at petroleum Sites is best demonstrated by installing permanent monitoring well(s) and sampling to have a sufficient number of events to meet the requirements in section 10.3 in Ecology Publication No. 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*, revised June 2016,<sup>56</sup> or for any Site by following WAC 173-340-720(9).

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<sup>56</sup> <https://apps.ecology.wa.gov/publications/SummaryPages/1009057.html>



Revisions to cleanup standards and how to determine compliance with those cleanup standards, even if the cleanup is underway, is allowed per WAC 173-340-702.

Much of the cleanup for a given AOC has focused demolishing and removing old sheds, debris removal, and scraping of surface soil to remove contamination. Excavation was used in four locations in August 2019 to remove additional identified residual contamination in soils. Generally, confirmatory soil and groundwater sampling appear to support that cleanup is complete in these areas, save a confirmatory soil sample request at PS1.

Current Site data support the conclusion that AOCs 1, 3, 5, 6, 10, 13, and 14 have been adequately characterized and require no additional cleanup.

**For Reference:**

***Institutional Controls and Environmental Covenants***

Sometimes, residual contamination (e.g., in soil) remains at a Site and is not accessible for cleanup, or cleanup is too costly based on the results of a feasibility study (FS) and disproportionate cost analysis (DCA). These situations are where cleanup levels cannot be met at the applicable points of compliance, typically within a reasonable restoration timeframe.

When Ecology concurs with proposed institutional controls and an environmental covenant as part of a preferred remedial alternative supported by DCA, it may be appropriate to request a no further action status for a property within a Site, or the Site as a whole. The environmental covenant runs with the land and records with the county the required institutional controls and long term monitoring plans to ensure ongoing protection of human health and the environment. Institutional controls, as a cleanup option, are not an allowable substitute for a permanent cleanup action,<sup>57</sup> when that permanent cleanup action can be implemented at a Site.

A reference guide of the components to generate an environmental covenant is included as **Enclosure F**. Ecology would need to review a completed draft environmental covenant package as part of any Property-specific or Site-wide closure request that includes a proposed environmental covenant.

***Property-Specific NFA Option***

As the cleanup progresses, you have the option of requesting a Property-Specific No Further Action for a specific parcel or parcels on which the substantive requirements of MTCA have been met. This would be where Site hazardous substances concentrations meet the most stringent cleanup levels for all media at the applicable (e.g., standard) points of compliance, or if a non-permanent cleanup is proposed through the use of an environmental covenant, for example.

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<sup>57</sup> WAC 173-340-360

For instance, presuming the updated review of cleanup standards at the Site shows compliance for Site hazardous substances in all media on one or more Thurston County parcels, a Property-specific NFA for one or both parcels may be appropriate. You would submit a separate opinion request for a Property-specific NFA review. That opinion request could include one or more parcels as appropriate.

### ***Public Notice and Comment***

As Ecology has ranked the Site a 1 (highest risk), a minimum 30-day public notice and comment period will be required after issuance of any NFA determination for the Site as a whole. Though standard review charges may apply under the VCP agreement for the public notice and comment period, Ecology is required to complete the process. An NFA determination could be changed or rescinded depending on the comments received.

## **Limitations of the Opinion**

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### **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

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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](#).<sup>58</sup> If you have any questions about this opinion, please contact me at (360) 407-6265 or [tim.mullin@ecy.wa.gov](mailto:tim.mullin@ecy.wa.gov).

Sincerely,



Tim Mullin, LHG  
Toxics Cleanup Program  
Southwest Regional Office

TCM/tam

Enclosures (6):

- A – Site Description
- B – Basis for the Opinion: List of Documents
- C – Hopkins Ditch Photographs
- D – Email Correspondence
- E – Partial List of Possible Applicable Local, State, and Federal Laws, Permits, and Regulations
- F – Environmental Covenant Reference Information

cc: Max Wills, Robinson-Noble, [MWills@robinson-noble.com](mailto:MWills@robinson-noble.com)  
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Carol Serdar, Ecology, [carol.serdar@ecy.wa.gov](mailto:carol.serdar@ecy.wa.gov)  
Ecology Site File

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<sup>58</sup> <https://www.ecy.wa.gov/vcp>

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# Enclosure A

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Site Description

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## Site Description

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The John's Auto Wrecking (Site) is located at 411 93<sup>rd</sup> Avenue Southeast, Olympia, Thurston County, Washington. The Thurston County tax parcels comprising the Property are zoned for both light industrial (use code 69 – warehouse) and undeveloped land (use code 91 – undeveloped land).<sup>59</sup>

Thurston County Tax Parcel	Use Code	Current Zoning
12723210000	91	Undeveloped land
12723210100	69	Warehouse
12723210400	91	Undeveloped land
12723210401	91	Undeveloped land
12723210700	91	Undeveloped land

The Property was used as a junkyard for approximately 22 years. The northernmost area of the Property contained five buildings used in the various salvage operations. In the middle of the Property, a large tire pile from the salvage vehicles was present. Various other salvage operation areas were scattered about the Property. The Hopkins Ditch, an ephemeral stream, is present along the southern portion of the Property.

The Site located about 0.3 miles south-southeast of the Olympia Regional Airport. The Site is located in the Upper Chehalis Watershed, and within the Salmon Creek sub-watershed. However, Ecology notes that Hopkins Ditch does not appear to be connected to the main channel of Salmon Creek, which is about two miles southwest of the Site.<sup>60</sup> Fish identified in the wetlands survey have not been observed in Hopkins Ditch at the Site; however, there is no specific barrier to fish moving between Salmon Creek and Hopkins Ditch if sufficient surface water were present to make Hopkins Ditch a viable waterway.

Ecology's 2004 Site Hazard Assessment rated the distance to nearest fishery resource to the Site as a "0," noting that Hopkins Ditch was an "ephemeral stream not a fishery resource."<sup>61</sup> However, the sampling and site visits the Site Hazard Assessment primarily relied on were completed in June and August 2002. Summer 2002 likely represented a seasonal minimum for groundwater.

Site soils are described in the wetland delineation report as Nisqually loamy fine sand, Norma fine sandy loam, Everett very gravelly sandy loam, Tisch silt loam, and Mukilteo muck. The Site is underlain by silty sands with varying amounts of gravel, interpreted as glacial outwash. Site groundwater ranges from near surface to approximately nine feet below top of casing, depending on the time of year and where at the Site.

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<sup>59</sup> Zoning current as of September 10, 2020.

<sup>60</sup> <https://www.ci.tumwater.wa.us/home/showpublisheddocument?id=3918>

<sup>61</sup> p. 6 of Ecology's Site Hazard Assessment, Worksheet #4, Surface Water Route

Site groundwater flow has been primarily to the northwest, with some localized groundwater flow to the south at the south end of the Site adjacent to Hopkins Ditch.

Contaminated soil associated with the various Site AOCs has generally required testing of groundwater to determine if contaminated groundwater is present. Grab groundwater sampling and groundwater sampling from five properly constructed monitoring wells, MW-1 through MW-5, have been used to evaluate Site groundwater quality. Cleanup has consisted of removal of soils by excavation and removal of debris from the Site.



## **Enclosure B**

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Document List

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## Basis for the Opinion – List of Documents.

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1. Email correspondence, Max Wills of Robinson-Noble to Tim Mullin of Ecology, January 14, 2021.
2. Email correspondence, Max Wills of Robinson-Noble to Tim Mullin of Ecology, October 15, 2020.
3. Robinson-Noble, *Supplemental Remedial Investigation/Cleanup Action*, May 15, 2020.
4. Ecology, *Comments on SEPA 2019101360*, April 19, 2019.
5. Email Correspondence, Zach Meyer of Ecology to Max Wills of Robinson-Noble, June 18, 2018.
6. Robinson-Noble, *Remedial Investigation*, July 2013.
7. Robinson-Noble, *Draft Work Plan for Supplemental Site Investigation*, February 2012.
8. Ecology, RE: *Further Action at the following Site*, August 23, 2011.
9. Robinson-Noble, Letter to Alan J. Wertjes, Attorney at Law, RE: *Site remediation of the Havens Property (aka Johns Auto Wrecking)*, December 10, 2009.
10. Robinson-Noble, Letter to Alan J. Wertjes, Attorney at Law, RE: *Site Investigation/characterization, Havens Property (aka Johns Auto Wrecking)*, April 21, 2009.
11. Ecology, RE: *Site Characterization Work Plan, John's Auto Wrecking, 411 93<sup>rd</sup> Avenue SE, Olympia, Washington*, prepared by Associated Environmental Group, LLC, dated June 15, 2006, June 26, 2006.
12. Ecology, RE: *Opinion pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the following Hazardous Waste Site*, February 23, 2006.

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## **Enclosure C**

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Hopkins Ditch Photographs

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## **Enclosure D**

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Email Correspondence

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**From:** [Max Wills](#)  
**To:** [Mullin, Tim \(ECY\)](#)  
**Cc:** [JudithWirth206@gmail.com](mailto:JudithWirth206@gmail.com); [Philip Grafious \(pgrafious@gmail.com\)](mailto:pgrafious@gmail.com)  
**Subject:** RE: wrecking yard  
**Date:** Thursday, January 14, 2021 6:40:50 PM  
**Attachments:** [RN - October 2013 \(John's Auto Wrecking Work Plan\).pdf](#)  
[Ecology Email - January 2014 \(work plan approval\).pdf](#)  
[July 2013 \(MW-1 through MW-3\) sample sheets.pdf](#)  
[MW-1 sampling sheet.pdf](#)  
[MW-4 sampling sheet.pdf](#)  
[MW-5 sampling sheet.pdf](#)

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**THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link**

Hi Tim,

Sorry the delay in responding; I had to do some digging and review (this project has been going on for a long time and has been a bit of challenge to keep organized). In response to your questions below:

- 1) Four quarters of groundwater monitoring were not conducted at MW-2 through MW-5, only at MW-1, per recommendations and concurrence with our October 2013 work plan by Ecology's previous site manager (see Task 5 of our October 2013 work plan and Task 5 of Eugene Radcliff's January 2014 email/work plan approval; both are located in Appendix B of the 2020 Supplemental RI and attached here). Specifically, for the 2013 RI (full copy also included in Appendix B of the 2020 supplemental RI but too large to attach) groundwater sampling did not identify any significant metal concentrations in MW-2 through MW-5; in fact most analyses were ND (also we did not identify any issues with petroleum or other analytes). For reference, in the 2013 RI, see:
  - Section 3.3 (AOC 2) for GW sampling at MW-4 – see narrative in the two paragraphs just above Table 3 (very low levels of zinc were detected in GW from MW-4 and all other analyses were ND).
  - Section 3.9 (AOC 9A) for GW sampling at MW-5 – see narrative and Table 10 (all metals in GW were ND or below Method A).
  - Section 3.10 (AOC 9B) for GW sampling at MW-2 and MW-3 – see first paragraph of the narrative in this section (states that all analyses (including RCRA- 8 metals) for these two wells were ND).
  - Section 3.8 (AOC 7 and 8) for GW sampling at MW-1 – the narrative in this section indicates that low level arsenic was the original concern. GW monitoring conducted for the 2020 supplemental RI (see Section 4.3 and Table 8 of that report) indicates that arsenic is not an issue, and there was only the one lead detection during the final quarter of monitoring (lead was 16 ug/L in the initial analyses and 15 ug/l in the duplicate analyses).
- 2) When we do groundwater sampling, our primary goal in measuring water quality parameters (pH, conductivity, DO, temp etc.) is to determine when the well is stabilized (when stagnant water has been removed and we actually have representative groundwater in the well to sample); our water quality meter is a field unit and is used to measure "relative" changes as the wells are purged; with possible calibration issues and other variables, I don't think the parameters measured are absolute – certainly not like you would achieve from actual laboratory analyses. With that in mind, I went back through our field notes and found the field sheets from the earlier sampling of MW-1 and the other four monitoring wells (see attached). pH, again just based on our field meter, is generally in the high 5s to low 6s across the site (looking at the pH values at the end of each purging event). I



think this is the background or base pH for shallow groundwater in this area; the site is generally swampy and stagnate much of year, so I would expect pH to be a bit to the low side. Also, minimal to no soil contamination was found at the site (specifically metals), so I don't think the pH levels in the shallow groundwater are related to contamination or previous site activities (so I don't think the anti-degradation standard (WAC 173-200) is not really applicable); if the low pH levels were related to wrecking yard activities and not representative of natural background levels, I wouldn't expect it to be more variable (low in affected areas and normal-range in unaffected areas) and not consistent across the site.

I hope this adequately addresses your questions. Please let me know if you have other questions or need additional information. If you can, could you give me an idea when you expect to issue the formal opinion letter (ball park time frame); I know Judith has invested a lot of time and resources, and has been very dedicated to completing the site cleanup to meet appropriate State standards.

Best Regards  
Max

Max T. Wills LHG, CWRE | Principal Hydrogeologist

**Robinson Noble, Inc.** | Hydrogeologists. Geotechnical Engineers. Environmental Scientists.  
17625 130<sup>th</sup> Avenue NE, Suite 102, Woodinville, WA 98072 | Office (425) 488-0599 | Mobile (206) 550-7215  
[www.robinson-noble.com](http://www.robinson-noble.com)

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**From:** Mullin, Tim (ECY) [mailto:TMUL461@ECY.WA.GOV]

**Sent:** Monday, January 11, 2021 4:03 PM

**To:** Judith Wirth <judithwirth206@gmail.com>; Max Wills <MWills@robinson-noble.com>; Philip Grafious <pgrafious@gmail.com>

**Subject:** RE: wrecking yard

Hi Judith,

Thank you again for all your patience. I am following up internally on the review status in a call tomorrow, after which I hope to have a more detailed update. I acknowledge it probably does not seem like it from your perspective, but your efforts regarding the cleanup of John's Auto Wrecking have made tremendous progress.

A couple of Ecology internal review questions that perhaps Max could work on to reduce time responding to the letter?

- 1) Were there four quarters of groundwater sampling for monitoring wells MW-2 through MW-5? I might have just missed these in the EIM data?
- 2) I see at MW-1 that the pH for the first two events is less than the [water quality standard](#) of 6.5-8.5. Then for the next two events the pH level appears to be within the regulatory range. Likely a simple explanation is available for the observed phenomenon, just need to provide or discuss that with me. Perhaps there are parameter data from wells MW-2 through MW-5, which might shed some light on the pH situation at MW-1?

Thank you,  
Tim

Tim Mullin, LHG  
Voluntary Cleanup Program Cleanup Project Manager  
Southwest Region – Toxics Cleanup Program  
Washington State Department of Ecology  
PO Box 47775  
Olympia, WA 98504-7775  
O: 360-407-6265  
C: 360-999-9589  
[tmul461@ecy.wa.gov](mailto:tmul461@ecy.wa.gov)

All of Ecology's offices are closed to walk-in service until further notice. However, we are still operating. Please contact me by email or cell.

---

**From:** Judith Wirth <[judithwirth206@gmail.com](mailto:judithwirth206@gmail.com)>  
**Sent:** Monday, January 11, 2021 11:09 AM  
**To:** Mullin, Tim (ECY) <[TMUL461@ECY.WA.GOV](mailto:TMUL461@ECY.WA.GOV)>; Max Wills <[MWills@robinson-noble.com](mailto:MWills@robinson-noble.com)>; Philip Grafious <[pgrafious@gmail.com](mailto:pgrafious@gmail.com)>  
**Subject:** wrecking yard

**THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link**

Hi again. WE are still waiting to hear about completing the review of the work done at this site. We have completed everything that was required and all tests and procedures met the standards established by Ecology. This process has taken nine years since I have been involved and an enormous amount of money, for a small estate. We have done the work in good faith and because we strongly support environmental causes. I hope Ecology will sign off on this property soon so we can finally move on. I have spent nine years working on this property and other properties in this estate, all of which had problems. I'm tired.

Please let us know where Ecology is in this process. Thanks. Judith

**From:** [Mullin, Tim \(ECY\)](#)  
**To:** [Max Wills](#); [Judith Wirth](#); [Philip Grafious](#)  
**Subject:** RE: SW1613: Request and update  
**Date:** Thursday, October 15, 2020 1:01:45 PM

---

Thank you for the below, no apologies needed. The detailed explanation is most helpful.

---

**From:** Max Wills  
**Sent:** Thursday, October 15, 2020 12:41 PM  
**To:** Mullin, Tim (ECY) ; Judith Wirth ; Philip Grafious  
**Subject:** RE: SW1613: Request and update

**THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link**

Hi Tim,  
In response to your questions below:

In our earlier, 2013 RI report, we referred to several of the soil samples collected in the wetlands area (discussed in Section 5.1 of the current report) as “sediment samples”, which I think was in error and misleading; Unfortunately geologists have a habit of calling anything that is unconsolidated (not rock) a sediment. I would definitely consider the entire site as an upland area and not as a sediment area.

The wetland area at the south end of the site, although wet a good portion of the year, does not actually have a sediment cover, or “settled particulate matter” as described by WAC 173-204-505(22). The ground there, from the surface down, is very compact Vashon recessional outwash (Qvr). When collecting the initial samples in this area, we actually had to use a pick-axe to obtain the samples and were only able to dig down a maximum of about 12 inches with that. The materials encountered in south excavations 1 and 2 were similar in that the backhoe had to scrape fairly hard to get to any depth.

The area, because it is so compact, just doesn't drain (thus the wetland). In the winter there is maybe up to a ½ foot of standing water (just enough to need rubber boots to get around). However, again as described by WAC 173-204-505(22), there isn't an “ordinary high water mark” as in a lake or marine environment. As such, I would, again, consider this an upland area and not a sediment area.

The pond is man-made; it is just a hole that, like Hopkins Ditch, the previous owner excavated, I think to try to help drain the area during the winter. As described in the middle of page 20 in our current report, the pond did have an approximately ½-foot thick layer of muck with leaves and sticks in it. However, all this material was excavated along with an additional ½ to one foot of the soil below it (Qvr), and then removed from the site. So if this is considered sediment, it has all been removed regardless, and no longer poses a risk to possible receptors at the site. The pond (and the other remedial excavations) were excavated near the end of summer and were all dry at that time (so we weren't “dredging” per se – this was a standard “dry-weather” remedial excavation and very easy to see the materials and the final excavation limits).



The pond area and the other remedial excavations were also significantly overexcavated to make sure we removed all of the potentially impacted materials. The laboratory analyses of all confirmation samples collected from the margins of the final excavations (pond area included) were non detect for both lead and cPAHs, so I am not sure it makes a difference which cleanup criteria we used at this point (it was all removed anyway); although, as discussed above, I think the MTCA Method A for soil was appropriate for this site.

I apologize for the long-winded explanation, but I hope this helps. Please let me know if you have any additional questions. I am mostly still working remote, so you can email me or call my cell phone (206) 550-7215.

Regards  
Max

Max T. Wills LHG | Associate Hydrogeologist

**Robinson Noble, Inc.** | Hydrogeologists. Geotechnical Engineers. Environmental Scientists.

17625 130<sup>th</sup> Avenue NE, Suite 102, Woodinville, WA 98072 | Office (425) 488-0599 | Mobile (206) 550-7215

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**From:** Mullin, Tim (ECY) [<mailto:TMUL461@ECY.WA.GOV>]

**Sent:** Wednesday, October 14, 2020 4:41 PM

**To:** Judith Wirth <[judithwirth206@gmail.com](mailto:judithwirth206@gmail.com)>; Max Wills <[MWills@robinson-noble.com](mailto:MWills@robinson-noble.com)>; Philip Grafious <[pgrafious@gmail.com](mailto:pgrafious@gmail.com)>

**Cc:** Mullin, Tim (ECY) <[TMUL461@ECY.WA.GOV](mailto:TMUL461@ECY.WA.GOV)>

**Subject:** SW1613: Request and update

Hi Judith,

Thank you for the messages. I have reviewed the Site data in EIM, the last report submitted, and drafted an opinion. That opinion is being refined based on initial internal review comments. Obviously, a lot of progress has been made on the cleanup at the Site, though my current opinion is that we are not quite to a no further action status for SW1613 – Johns Auto Wrecking. Please wait to receive the opinion letter to review the recommended path forward.

**Answering these questions would help - please have Max Wills email a response**

The excavation areas in the wetlands (lead) and pond (cPAHs) seemed to be for sediment, and the MTCA Method A cleanup levels for soil were used to discuss analytical results.

1. Please clarify if each of the excavations of lead (south excavation #1 and #2) and the excavation of cPAHs (pond excavation) occurred in upland or sediment areas. My understanding of the available data was that all three excavations were in the sediment areas.
2. To verify, based on available information, do any areas of the Site which have been sampled, especially the excavated areas, meet this definition from WAC [173-204-505\(22\)](#)?

- a. (22) "Surface sediment" or "sediment" means settled particulate matter located at or below the ordinary high water mark, where the water is present for a minimum of six consecutive weeks, to which biota (including benthic infauna) or humans may potentially be exposed, including that exposed by human activity (e.g., dredging).

#### **Other current opinion considerations**

I recognize in the past that some determinations were made by email or at meetings. However, because this is a ranked Site, and any no further action determination requires a minimum 30 day public notification and comment period, I want to ensure that the current progress of the cleanup is documented in detail in an opinion letter on Ecology letterhead. For the Voluntary Cleanup Program, the order is that any no further action letter is the minimum 30-day public notice and comment period is completed. Ecology has also not issued an opinion on letterhead for this cleanup since August 23, 2011, and I want to ensure that the cleanup is transparent and open for public review to avoid any potential hang ups by not sufficiently satisfying the public notice and participation requirements under [WAC 173-340-600](#).

For reference, a ranked Site is determined based on the potential risk of the contamination released and the location of the release, with a rank 1 being the highest risk and a rank 5 being the lowest risk. So far, my approach of documenting the later stages of the cleanup process on Ecology letterhead has been successful at the ranked Sites for which I have issued a No Further Action letter. The success has been the No Further Action letter I issued for those ranked Sites has upheld after any public comment period has been completed. I anticipate the same for the John's Auto Wrecking cleanup once we get to the no further action.

Thank you,  
Tim

Tim Mullin, LHG  
Voluntary Cleanup Program Cleanup Project Manager  
Southwest Region – Toxics Cleanup Program  
Washington State Department of Ecology  
PO Box 47775  
Olympia, WA 98504-7775  
O: 360-407-6265  
C: 360-999-9589  
[tmul461@ecy.wa.gov](mailto:tmul461@ecy.wa.gov)

All of Ecology's offices are closed to walk-in service until further notice. However, we are still operating. Please contact me by email or cell.

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**From:** Judith Wirth <[judithwirth206@gmail.com](mailto:judithwirth206@gmail.com)>

**Sent:** Wednesday, October 14, 2020 9:46 AM

**To:** Mullin, Tim (ECY) <[TMUL461@ECY.WA.GOV](mailto:TMUL461@ECY.WA.GOV)>; Max Wills <[MWills@robinson-noble.com](mailto:MWills@robinson-noble.com)>; Philip Grafious <[pgrafious@gmail.com](mailto:pgrafious@gmail.com)>

**Subject:** Re: wrecking yard

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Hi Tim, just got the bill for your services and am wondering where you are in the process of reviewing the final report on the wrecking yard. Please let me know if you have any problems, concerns etc.. We have waited a long time to complete the work on this property and hope we have finally adequately addressed any environmental concerns. Judith

On Mon, Oct 5, 2020 at 9:32 AM Judith Wirth <[judithwirth206@gmail.com](mailto:judithwirth206@gmail.com)> wrote:

Hi, just checking in to see how the "read" of the wrecking yard manuscript, tome, etc. is going. I keep thinking it must be pretty boring and parts must be redundant, but necessary. Do you have any questions or concerns at this point, that you can share with us? I assume that any questions will be forwarded to Max but would like to know as well. What a long and expensive process this has been. Thanks for your help. Judith

**From:** [Meyer, Zachary \(ECY\)](#)  
**To:** [Koberstein, Marla \(ECY\)](#); [Max Wills](#); [Serdar, Carol \(ECY\)](#)  
**Cc:** [Mullin, Tim \(ECY\)](#); [Moon, Amy \(ECY\)](#); [Montague-Breakwell, Chris \(ECY\)](#); [Judith Wirth](#); [Carpenter, Honor \(ECY\)](#)  
**Subject:** RE: CSWGP for John's Auto Wrecking site  
**Date:** Monday, June 18, 2018 9:28:56 AM  
**Attachments:** [image002.png](#)

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Hi Max,

With excavation in a wetland you will need to ensure that you have the appropriate approvals from the Army Corp of Engineers as well. The nature and size of this project leads me to believe it will be covered by a Nation Wide Permit. This will likely come up during the local Critical Area review as well.

I would suggest looping in the Corp Project Manager for Thurston County, Brandon Clinton ([brandon.c.clinton@usace.army.mil](mailto:brandon.c.clinton@usace.army.mil)) if you have not done so already to get that ball rolling. Please feel free to reach out to me if you have questions regarding the wetlands and this project.

Zach Meyer  
Wetlands/Shorelands Specialist  
Shorelands & Environmental Assistance Program  
Washington State Department of Ecology  
Southwest Regional Office, Lacey, WA  
360-407-6167



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**From:** Koberstein, Marla (ECY)  
**Sent:** Monday, June 18, 2018 9:11 AM  
**To:** Max Wills <[MWills@robinson-noble.com](mailto:MWills@robinson-noble.com)>; Serdar, Carol (ECY) <[cser461@ECY.WA.GOV](mailto:cser461@ECY.WA.GOV)>  
**Cc:** Mullin, Tim (ECY) <[TMUL461@ECY.WA.GOV](mailto:TMUL461@ECY.WA.GOV)>; Meyer, Zachary (ECY) <[ZMEY461@ECY.WA.GOV](mailto:ZMEY461@ECY.WA.GOV)>; Moon, Amy (ECY) <[amym461@ECY.WA.GOV](mailto:amym461@ECY.WA.GOV)>; Montague-Breakwell, Chris (ECY) <[cmon461@ECY.WA.GOV](mailto:cmon461@ECY.WA.GOV)>; Judith Wirth <[judithwirth206@gmail.com](mailto:judithwirth206@gmail.com)>; Carpenter, Honor (ECY) <[hcar461@ECY.WA.GOV](mailto:hcar461@ECY.WA.GOV)>  
**Subject:** RE: CSWGP for John's Auto Wrecking site

Hi Max,

You will need to conduct the SEPA process through Thurston County, since they will be the SEPA lead agency on your project. If you have any further questions about this please let me know.

Kind regards,

Marla Koberstein  
General Permits Coordinator  
Department of Ecology | Water Quality  
P.O. Box 47600 | Olympia, WA 98504-7600  
(360) 407-7126 | [marla.koberstein@ecy.wa.gov](mailto:marla.koberstein@ecy.wa.gov)

---

**From:** Max Wills [<mailto:MWills@robinson-noble.com>]

**Sent:** Friday, June 15, 2018 3:15 PM

**To:** Serdar, Carol (ECY) <[cser461@ECY.WA.GOV](mailto:cser461@ECY.WA.GOV)>

**Cc:** Mullin, Tim (ECY) <[TMUL461@ECY.WA.GOV](mailto:TMUL461@ECY.WA.GOV)>; Meyer, Zachary (ECY) <[ZMEY461@ECY.WA.GOV](mailto:ZMEY461@ECY.WA.GOV)>; Moon, Amy (ECY) <[amym461@ECY.WA.GOV](mailto:amym461@ECY.WA.GOV)>; Montague-Breakwell, Chris (ECY) <[cmon461@ECY.WA.GOV](mailto:cmon461@ECY.WA.GOV)>; Judith Wirth <[judithwirth206@gmail.com](mailto:judithwirth206@gmail.com)>; Koberstein, Marla (ECY) <[mkob461@ECY.WA.GOV](mailto:mkob461@ECY.WA.GOV)>; Carpenter, Honor (ECY) <[hcar461@ECY.WA.GOV](mailto:hcar461@ECY.WA.GOV)>

**Subject:** RE: CSWGP for John's Auto Wrecking site

Hi Carol,

I apologize for the delay in returning this message. I have submitted an on-line notice of intent for a CSWGP for the remedial excavation work at the John's Auto Wrecking site and as requested I have attached a map showing the areas where we need to do remedial excavation. As explained previously (and shown on the map), the areas to be excavated are very small (the two areas on the south end of the site that are in the buffer zone will each cover areas of about 20' x 20' and will be excavated to maximum depths of about one foot – the area at the north end of the site is not in the buffer zone so I am presuming we do not need permits to do work here). We don't have an extravagant storm water management plan other than we will only be working when the site is bone dry. We are looking realistically at one to two days of work with a back hoe and a small dump truck, and because of the nature of the site we really can work at any time other than when it is dry (we will not be working in the rain, and will postpone work if need be). I have included silt fences along Hopkins Ditch as an added precaution, but again the ditch is little more than a small manmade string of discontinuous puddles, especially during the summer (there is no flow). Let me know what else we need to do to accommodate Ecology's concerns.

I spoke with Thurston County and they are going to require a SEPA review, a Critical Area Review Permit, a master permit and possibly a number of other permits pending their review of the site. Does it matter if we do the SEPA review through State or County? Given the list of permits to complete for County, it is not likely that this work will get done this summer so we are tentatively planning to do this work in August or September 2019.

Let me know what else you need and if you have any suggestions on how we might expedite this process. The client is anxious to finish the cleanup on this site.

Thank you

Max

Max T. Wills LHG, CWRE | Associate Hydrogeologist

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[www.robinson-noble.com](http://www.robinson-noble.com)

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**From:** Serdar, Carol (ECY) [<mailto:cser461@ECY.WA.GOV>]

**Sent:** Monday, May 07, 2018 4:30 PM

**To:** Max Wills

**Cc:** Mullin, Tim (ECY); Meyer, Zachary (ECY); Moon, Amy (ECY); Montague-Breakwell, Chris (ECY); Judith Wirth; Koberstein, Marla (ECY); Carpenter, Honor (ECY)

**Subject:** RE: CSWGP for John's Auto Wrecking site

**Importance:** High

Good afternoon Max,

Thank you for the conversation this morning...

As mentioned earlier today, and the email below explains more, the site will need to apply for a CSWGP. The link is provided again: <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit> Submit a Notice of Intent as soon as possible for a CSWGP.

Today we discussed you sending a map to me with the site configuration (similar to the sampling map), use lines to delineate the limits of excavation throughout the site, each portion may have a different excavation depth. This map should have text boxes to describe the BMPs to be used to prevent turbid discharges to the adjacent waters of the state. Use the descriptions in the attached email to show on the map the proposed cleanup through excavations, etc. and how you will prevent contaminants discharging from the site while you conduct the cleanup.

Based on our conversation and the attached email, your primary method of managing potentially contaminated stormwater will be infiltration. State how this will occur and what your contingency plan would be if we have a wet summer. Additionally, we did not discuss was how you would prevent stormwater from entering the ditch, illustrate this on the map.

If Thurston County will not issue a fill and grade permit, then Ecology may need to facilitate SEPA for the issuance of the CSWGP. I have cc'd Marla Koberstein who will be Ecology's Water Quality SEPA contact. Contact her as soon as possible to determine if SEPA can be initiated at the same time as the Notice of Intent for the CSWGP, and the Public Notification.

I hope you have a great vacation, and I look forward to working with you on obtaining a CSWGP for the above mentioned site.

Sincerely,  
Carol

**Carol F. Serdar, LG**

Hydropower Compliance Manager and  
Contaminated Construction Stormwater Inspector  
WA Department of Ecology - SWRO  
Water Quality Program - Watershed Resources Unit  
PO Box 47775  
Olympia, WA 98504-7775

360.407.6269 desk  
360.742.9751 cell

---

**From:** Serdar, Carol (ECY)

**Sent:** Tuesday, February 13, 2018 3:32 PM

**To:** 'Judith Wirth' <[judithwirth206@gmail.com](mailto:judithwirth206@gmail.com)>

**Cc:** 'Eric N. Gellert' <[egellert@kellerrohrback.com](mailto:egellert@kellerrohrback.com)>; 'Max Wills' <[MWills@robinson-noble.com](mailto:MWills@robinson-noble.com)>; Mullin, Tim (ECY) <[TMUL461@ecy.wa.gov](mailto:TMUL461@ecy.wa.gov)>; Meyer, Zachary (ECY) <[zmey461@ecy.wa.gov](mailto:zmey461@ecy.wa.gov)>; Moon, Amy (ECY) <[amym461@ECY.WA.GOV](mailto:amym461@ECY.WA.GOV)>; Montague-Breakwell, Chris (ECY) <[cmon461@ECY.WA.GOV](mailto:cmon461@ECY.WA.GOV)>

**Subject:** CSWGP for John's Auto Wrecking site

**Importance:** High

Good afternoon Judith,

Thank you for providing me with some of your documents related to the above mentioned site.

**A Construction Stormwater General Permit (CSWGP) is required for this site based on site conditions and excavation proposed.** Although the site excavations may be small, based on the description of soil to be removed adjacent to and within wetlands and the Hopkins Ditch, the potential to have a violation of 90.48 RCW (Water Pollution Control law) is likely. Therefore, the CSWGP will be required.

The areas described to me that will have ground disturbing activities are located in several locations (See attached map). The area numbered 1 (white numbered area near sampling location B12 and B13); number 3 (sampling location B15 - B17); number 7 and 8 (sampling sites around MW-1); around sample location WS6; and around sample location WS8. These locations are similar to a "common plan of development" and will also have additional ground disturbances based on the need to have haul roads between the areas mentioned above as well as potential areas needed for equipment storage and perhaps dewatering of wet sediment. Additional ground disturbance may occur if piles of metal debris are removed during this cleanup.

For additional information regarding the CSWGP, please review this website:

<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit>

Additionally, based on digging within a wetland, you and your team should contact Zach Meyer (Ecology SEA Program) as well as the Corps of Engineers to determine if a Nationwide Permit will be required.

If you have any questions about this email or need technical assistance in obtaining your CSWGP, please contact me. Thank you.

Sincerely,  
Carol

***Carol F. Serdar, LG***  
Hydropower Compliance Manager and  
Contaminated Construction Stormwater Inspector  
WA Department of Ecology - SWRO  
Water Quality Program - Watershed Resources Unit  
PO Box 47775  
Olympia, WA 98504-7775

360.407.6269 desk  
360.742.9751 cell



## Max Wills

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**From:** Radcliff, Eugene (ECY) <erad461@ECY.WA.GOV>  
**Sent:** Friday, January 31, 2014 1:42 PM  
**To:** Max Wills  
**Cc:** Alan Wertjes; Rose, Scott (ECY)  
**Subject:** John's Auto Wrecking: Draft work plan for supplemental remedial investigation and limited soil remediation - SW1127  
**Attachments:** FW: Ecology Submittal Requirements

Max:

I have had a chance to review the draft work plan for a supplemental remedial investigation (RI) and limited soil remediation for the John's Auto Wrecking facility (Site), located at 411 93rd Avenue Southeast in Olympia, Washington. The draft work plan appears to be based on the findings and recommendations presented in the July 2013 remedial investigation report and as well as issues we discussed in our meeting of September 24, 2013.

The draft work plan was is divided into eight separate tasks and I will add my comments as a separate sub-bullet to the bulleted task.

- Task 1: Completion of the final work plan following Ecology review - will incorporate any recommended changes into a final work.
  - *On-going.*
- Task 2: Final debris removal and associated soil sampling.
  - *This plan appears to have identified areas of concern and sufficient to the task.*
- Task 3: Investigation of possible PCB-containing transformers.
  - *This plan appears to have identified areas of concern and sufficient to the task.*
- Task 4: Investigation of possible imported fill.
  - *This plan appears to have identified areas of concern and sufficient to the task.*
- Task 5: Quarterly groundwater sampling at MW-1.
  - *This plan appears to have identified areas of concern and sufficient to the task.*
  - *If total metals analysis remains problematic and TDS is remains high, dissolved metals may help resolve this is, but should be used only after discussion with Ecology.*
- Task 6: Wetland delineation and site-specific terrestrial ecologic evaluation (TEE).
  - *This plan appears to have identified areas of concern and sufficient to the task.*
  - *Please include the actual wetland delineation report in an appendix.*
- Task 7: EIM preparation and upload.
  - *This plan appears to have identified areas of concern and sufficient to the task.*
- Task 8: Report preparation.
  - *This plan appears to have identified areas of concern and sufficient to the task.*
  - *Please review the attached enclosure for report and submittal requirements.*

If you have any questions or comments please contact me.

Thanks you,

Eugene

**Eugene Radcliff, L.G.**

Toxic Cleanup Program-Voluntary Cleanup Program

[Washington Department of Ecology](#)

(360) 407-7404

[erad461@ecy.wa.gov](mailto:erad461@ecy.wa.gov)

## Max Wills

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**From:** Radcliff, Eugene (ECY) [erad461@ECY.WA.GOV]  
**Sent:** Wednesday, June 26, 2013 4:50 PM  
**To:** Max Wills  
**Cc:** Alan Wertjes; Callender, Alexander (ECY); Gerald Tousley; Rose, Scott (ECY)  
**Subject:** John's Auto Wrecking - SW1127: Site Visit

Max:

Thank you for meeting with us (Eugene Radcliff - VCP and Alex Callender (WQ)) at the Havens Auto Wrecking facility (Site) in Tumwater yesterday. My general impression was that the Site's appearance had dramatically improved in some areas (northeast corner of the Site), while observing little progress in other areas (pond and upper building area). Based on my Site visit yesterday, Ecology has some recommendations for you to consider when conducting further evaluation of the Site:

- Evaluate sediments and surface water samples in pond southern pond along property line. Sediment COCs: TPH-HCID\*, metals, PAHs, PCBs, VOCs, semi-VOCs.
- Remove tires, wheels, and all other debris from water bodies. Removal of material should be least invasive, least destructive methods (e.g. by hand)
- Evaluate the pond banks to ascertain whether tires have been buried into the bank along north shoreline of pond.
- Review the electric pole transformer history; sample soils beneath the transformer for PCBs as warranted.
- Remove large "creosote" timber near southern property line (and any other treated lumber found) and sample soil for PAHs, pentachlorophenol, and metals.
- Segregate/remove debris pile from the northern portion of the Site and transport to appropriate off-Site disposal facilities, do not store debris piles on Site for extended periods of time. Ecology views the debris piles as a potential pollutant source, it may necessitate additional sample analyses as well as added cleanup costs if these piles remain on-Site. Items identified in the debris pile included fluorescent light ballasts, insulation, treated wood, a portion of a chimney, galvanized metals, and oil storage containers.
- BMPs should be used when storing debris piles on the Site. The county has primacy on solid waste storage issues and there may be permitting requirements for this type of storage activity. Please contact the Thurston County Health Department for additional guidance on solid waste issues
- Further investigation, based on historic maps and aerial imagery plus the appearance of the area soils being reworked south of the Hopkins Ditch, may be warranted.
- Small collections of metal, tires, and other debris remain scattered throughout the Site and should be removed.
- A Terrestrial Ecological Evaluation (TEE) should be conducted for the Site.
- We discussed the value of having a wetland delineation completed for the Site, this could be useful to help you complete a TEE.

The County has zoned the Site, consisting of five parcels, with two zoning classifications:

### **Zoned LIGHT INDUSTRIAL DISTRICT (LI)\* (northern three parcels)**

Subject to the provisions of this title, the following uses are permitted in the light industrial district:

3.Processing and Storage.

g.Junk, rags, paper, or metal salvage, storage, recycling or processing;

**Zoned RURAL—ONE DWELLING UNIT PER TEN ACRES (R 1/10) (southern two parcels)**

Primary uses.

Subject to the provisions of this title, the following uses are permitted in this district:

- 1.Single-family dwellings (limited to one primary residential structure per lot);
- 2.Agriculture;
- 3.Forest practices and forest management activities; and
- 4.Outdoor recreation.

Any additional investigation/feasibility study should take these zoning criteria into consideration as potential future uses.

Per our discussion at the Site, Ecology would not be receptive to providing a No Further Action Opinion for a Site where re-contamination was possible. That is why the removal of any potential Site contamination, and its sources, is essential to moving forward in any future cleanup activities.

Ecology's Southwest Regional Office Water Quality Section may have some additional comments for you at a later date. I will forward to you if I receive any comments.

I would be happy to meet with you and your client to discuss future remedial actions at the Site if you would like.

If you have any questions or comments, please contact me.

Sincerely,

Eugene

**Eugene Radcliff, L.G.**

Toxic Cleanup Program-Voluntary Cleanup Program

[Washington Department of Ecology](#)

(360) 407-7404

[erad461@ecy.wa.gov](mailto:erad461@ecy.wa.gov)

\* TPH-HCID should be collected at selected locations, if the analysis indicated TPH-D or TPH-O then the samples should be NWTPH-Dx using without the silica gel/acid cleanup preparation.

## **Enclosure E**

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Partial List of Possible Applicable Local, State, and Federal Laws,  
Permits, and Regulations

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## **Partial List of Possible Applicable Local, State, and Federal Laws, Permits, and Regulations.**

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1. Model Toxics Control Act (chapter 173.105D RCW), and Model Toxics Control Act Regulation (chapter 173-340 WAC).
2. Sediment Management Standards (chapter 173-204 WAC).
3. State Water Pollution Control Act (chapter 90.48 RCW).
4. Water Quality Standards for Surface Waters of the State of Washington (chapter 173-201A WAC).
5. The Washington State Waste Discharge General Permit Program (WAC 173-226)
6. State Environmental Policy Act (chapter 43.21C RCW and chapter 197-11 WAC).
7. Washington Hydraulic Code (chapter 220-660 WAC).
8. Washington State Hazardous Waste Management Act (chapter 70.105 RCW)
9. State Dangerous Waste Regulation (chapter 173-303 WAC).
10. Hazardous Waste Operations (chapter 296-843 WAC).
11. Solid Waste Management-Reduction and Recycling (chapter 70.95 RCW).
12. Solid Waste Handling Standards (chapter 173-350 WAC).
13. Municipal Solid Waste Landfills (chapter 173-351 WAC).
14. Minimum Standards for Construction and Maintenance of Wells (chapter 173-160 RCW).
15. Washington State Clean Air Act (chapter 70.94 WAC).
16. Construction Stormwater General Permit, Substantive Requirements.
17. Olympic Regional Clean Air Agency Regulations
18. Underground Storage Tank Statue & Regulations (chapter 90-76 RCW and chapter 173-360 WAC).
19. Federal Clean Water Act and the Surface Water Quality Criteria promulgated hereunder (33 U.S.C 1251 et. Seq).

20. Section 401 and 404 of Clean Water Act-Water Quality Certification and Dredge and Fill Requirements (USC 1340, 1344; 33 CFR Parts 320 through 330, and 40 CFR Parts 230 and 231), also State Program under chapter 173-225 WAC.
21. National Toxics Rule (40 CFR Subpart 131.36).
22. Federal Endangered Species Act (16 USC 1802 et seq., 50 CFR, Part 600).
23. Resource Conservation Recovery Act (RCRA), 42 USC 321 et seq.).
24. State Hydraulic Code (chapter 77.20 RCW; chapter 2210-110 WAC).
25. Corps of Engineers JARPA Permit.
26. Occupational Safety and Health Act (OSHA), 29 CFR Subpart 1910.120.
27. Washington State Industrial Safety and Health Act (WISHA), chapter 296-843 WAC and chapter 896-62 WAC.
28. Archaeological and Cultural Resources Act (chapter 43.53 RCW).
29. Archaeological and Historic Preservation Act (chapter 43.53 RCW).
30. Archeological Sites and Resources (chapter 27.53 RCW).
31. National Historic Preservation Act (NHPA) 16 USC 470 et seq.
32. Uniform Environmental Covenants Act (chapter 64.70 RCW).
33. Local Requirements (City and County).



## **Enclosure F**

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Environmental Covenant Reference Information

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## Environmental Covenant Reference Information

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**Draft Covenant:** Ecology will need a draft covenant memorializing proposed institutional and engineered controls for all impacted properties. Also provide the environmental covenant in electronic word-processing-compatible format.<sup>62</sup> Include the following information with the draft covenant:

1. **Plan View Maps and Geologic Cross Sections:** Include delineated concentration (1) isopleth plan view maps and (2) geologic cross sections showing the extents of remaining contamination at the Site. Include the boundaries of the MTCA facility, the affected Properties, and the location of any rights of way or easements. Indicate where insufficient data are available to delineate to natural background concentrations. These maps will be used to indicate where contamination remains at the Site after closure. For consistency with other sites in our program, Ecology prefers that data for these maps are provided in units of milligrams per kilogram (mg/kg) for soil, micrograms per liter ( $\mu\text{g/L}$ ) for groundwater, and microgram per meter cubed ( $\mu\text{g/m}^3$ ).
2. **Title Search:** Provide a complete title search as part of Exhibit A, legal description.
3. **Land Survey:** Provide a land survey of impacted properties and rights-of-way, including platting and dedications.
4. **Review the Title Search and Land Survey to Determine if Existing Easements Include any Area of Proposed Engineered or Institutional Controls:**
  - a. Develop a plan view map or sketch of the locations of existing easements sufficient for Ecology to concur with your evaluation of whether any easements include the areas of proposed engineered or institutional controls.
  - b. For each easement that intersects proposed controls at the Site, provide either of the following:
    - i. A signed subordination agreement.
    - ii. Sufficient evaluation of specific easement terms for Ecology to concur that the easement will not impact the integrity of the cleanup.

Ecology recommends contacting easement owners prior to completing a draft environmental covenant. When reviewing easements, Ecology assumes that Property boundaries extend to the centerline of the adjacent rights of way.

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<sup>62</sup> See the word processing formatted document at:  
<https://fortress.wa.gov/ecy/publications/SummaryPages/1509054.html>.

5. **Financial Assurance Requirements:** Ecology recommends that you review the financial assurance requirements of [WAC 173-340-440](#) (11) and contact our Financial Assurance Officer, Joanna Richards at [joanna.richards@ecy.wa.gov](mailto:joanna.richards@ecy.wa.gov) or (360) 407-6754 for direction on evaluating financial assurance requirements.<sup>63</sup> Include any needed financial assurance mechanisms and implementation of financial assurances based on the requirements. If financial assurances are determined to be unnecessary, include sufficient explanation for Ecology to concur.
6. **Local Government Notification Requirements:** Please document how the local government notification requirements of WAC 173-340-440(10) are completed. Ecology suggests providing the draft covenant and enclosure package to the local land use planning authority for review and comment. If comments are provided, update the draft covenant based on comments, and provide Ecology the correspondence, local government comments, and how those comments were addressed. If no response is received, include sufficient information for Ecology to concur that the correct local government agency was notified, the date they were notified, and that comments were sought. At this Site, Ecology believes that the appropriate local land use planning authority is likely the Thurston County Planning Department.
7. **Long-Term Groundwater Monitoring and Cap Monitoring Plan:** Ecology will need long-term monitoring of the existing groundwater monitoring well network to ensure the remedy is effective. A long-term groundwater and cap monitoring and reporting plan will be needed. That plan needs to also include contingency planning, in the event that the remedy is not effective.

Ecology suggests proposing a fifteen month confirmation groundwater monitoring frequency for the first five years of post-closure monitoring, so that four quarters of seasonal groundwater results are obtained over the five years prior to Ecology's first required regular review.

Reporting on the cap condition may be conducted at the same time as long term monitoring, and should be detailed in the monitoring plan. An initial inspection with photographs and description of the cap to be monitored should be included with the plan.

The plan should also include provisions to ensure that all environmental data is provided in accordance with WAC 173-340-840(5) and [Ecology Toxics Cleanup Program Policy 840](#) (Data Submittal Requirements).<sup>64</sup>

8. **Contingency Plan:** A long-term groundwater and soil vapor contingency plan is required. That plan should describe those actions that will be conducted if long-term monitoring results exceed predetermined levels, or if cap maintenance or other maintenance is needed, such as repairing groundwater monitoring wells, or what to do if the cap is damaged.

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<sup>63</sup> <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Dangerous-waste-guidance/Dispose-recycle-or-treat/Financial-assurance>

<sup>64</sup> <https://fortress.wa.gov/ecy/publications/SummaryPages/1609050.html>

The contingency plan may be triggered during regular inspection of the cap and monitoring well integrity, or by exceedances of cleanup levels at a point of compliance during long term monitoring. A simple and adequate contingency plan would include and detail, as applicable, that when specific levels are detected during long-term monitoring, additional confirmation sampling would be performed within 30 days of the initial receipt of results. If the cap were damaged, indoor air sampling and analysis would be conducted and the cap repaired.

Additional follow-up groundwater sampling would include all required testing for detected hazardous substances and related compounds. The contingency plan should include proposed analytes for contingency sampling in an analytical schedule. Results of performance and confirmation sampling for a contingency plan would be provided to Ecology within 90 days of the laboratory result date if no exceedances of criteria are detected, or within 30 days of the laboratory report result date if exceedances are detected, or for follow-up confirmation sampling.

If confirmation sampling reveals the continued presence of contaminants above predetermined levels, the contingency plan should include that a work plan to further evaluate conditions beneath the Site would be submitted to Ecology within 60 days of receipt of results of confirmation sampling.

9. **Rights-of-Way:** If contamination is proposed to be left in rights-of-way exceeding cleanup standards, or exceeding soil vapor cleanup screening levels where an engineered control such as a sidewalk is needed to reduce human exposure to contaminated soil vapor, a subordination agreement with the right-of-way holder would be required for implementing an environmental covenant. Grantor and/or subordinate agreements may be required with adjacent Property owners or right-of-way holders, determined by the extents of the Site. Alternately, consider a Property-specific no further action approach excluding rights-of-way. Ecology recommends contacting rights-of-way holders (and adjacent property owners) prior to completing a draft environmental covenant.