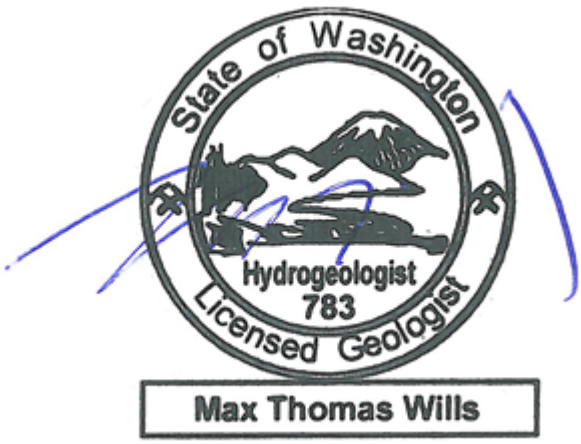
ROBINSON NOBLE

JOHN'S AUTO WRECKING
411 93RD AVENUE SOUTHEAST, OLYMPIA, WASHINGTON
SUPLIMENTAL REMEDIAL INVESTIGATION
(VCP Project No. SW1613)
October 14, 2021

by

Max T. Wills, LHG
Principal Hydrogeologist



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1.0 Introduction and Purpose

This supplemental remedial investigation (RI) was completed to address cleanup actions recently recommended by the Washington State Department of Ecology (Ecology) for the John's Auto Wrecking site (Facility/Site No. 57665495). The recommended cleanup actions are outlined in Ecology's technical assistance letter (dated September 9, 2021) and their associated opinion letter (dated March 29, 2021). A copy of both letters are included in Appendix A for reference.

The John's Auto Wrecking site (referred to herein as the site) is located in unincorporated Thurston County just south of the City of Tumwater. Vicinity and site maps are presented as Figures 1 and 2. The site is currently vacant and undeveloped but was previously occupied by an auto-wrecking business (John's Auto Wrecking) until around 2001. The site is listed on Ecology's Confirmed or Suspected Contaminated Sites List (CSCSL) as having confirmed or suspected soil and/or groundwater contamination (arsenic, lead, other priority pollutant metals, unspecified petroleum products, and polycyclic aromatic hydrocarbons). Site remediation is currently being addressed through Ecology's Voluntary Cleanup Program (VCP Project No. SW1613). Table 1 summarizes key regulatory information for the site.

Table 1. Key Regulatory Information

Site Name	John's Auto Wrecking			
AKA	Havens Estate Investments, LLC			
Site Address	411 93rd Avenue SE, Olympia, Washington 98501-9701 (Thurston County)			
Facility/Site No.	57665495			
VCP Project No.	SW1613 (*previous work completed for Alan Wertjes under SW1127*)			
Contact Information				
Name		**Address**	**Phone #**	**Email**
Timothy Mullin, Ecology, SWRO	Site Manager	300 Desmond Drive SE Lacey, WA 98504	(360) 407-6265	Timothy.Mullin@ ecy.wa.gov
Judith Wirth, Havens Estate Investments, LLC	Property Owner's Representative, VCP Client	5023 8th Ave. NE Seattle, WA 98105-3602	(206) 632-1924	JudithWirth206@ gmail.com
Max Wills, Robinson Noble	Consultant, Project Manager	17625 130th Ave. SE, Suite 102 Woodinville, WA 98072	(425) 488-0599	MWills@ robinson-noble.com

The site address is 411 93rd Avenue Southeast, Olympia, Washington. It is bounded on the north by 93rd Avenue Southeast and is situated between Tilley Road Southeast to the west and Hart Road Southeast to the east (Figure 1). The site is located within Section 23 of Township 17 North, Range 2 West (Willamette Meridian). The site is comprised of six contiguous tax parcels identified by Thurston County Assessor records as parcel numbers 12723210000,

12723210100, 12723210400, 12723210401, 12723210700, and 12723220200. The total land area of the site is approximately 16.04 acres as outlined below in Table 2. The location of the individual site parcels are shown on Figure 2.

Table 2. Parcel Information

Parcel Number	Area (acres)
12723210000	5.18
12723210100	1.62
12723210400	2.09
12723210401	1.95
12723210700	5.01
12723220200	0.19
Total Site Area	**16.04**

1.1 Background and Summary of Previous Work

In 2020, Robinson Noble completed a Supplemental Remedial Investigation/Cleanup Action report (Robinson Noble, May 2020) on behalf of the current site owner, Havens Estate Investments, LLC (copies of our May 2020 report, along with all previously completed remediation reports, are on file with Ecology). Section 2.1 of the 2020 RI/Cleanup Action report provides a detailed description of the topographic and surface-water features of the site, and Section 2.2 provides a detailed discussion of the geology and hydrogeology. Section 3 of the 2020 RI/Cleanup Action report provides a detailed description of the previous remedial investigations and cleanup actions completed up through May 2020.

Following review of the May 2020 RI/Cleanup Action report, Ecology issued their March 29, 2021 opinion letter (Appendix A), which states that a no further action (NFA) determination is likely appropriate once five specified actions are completed. The requested actions listed in the opinion letter are summarized by Ecology as follows:

Item 1 - Collect at least one additional confirmatory soil sample at PS1 (pond excavation area).

Item 2 - Demonstrate how groundwater monitoring requirements under section 10.3 in Ecology Publication No. 10-09-057, Guidance for Remediation of Petroleum Contaminated Sites, or WAC 173-340-720(9) have been met for each monitoring well location.

Item 3 - Collect at least three performance surface water samples from Hopkins Ditch.

Item 4 - Confirm list of applicable local, state, and federal laws. Add to the list if necessary; justify if no additions are required.

Item 5 - Determine if a property-specific no further action request (with or without institutional controls) is appropriate for the cleanup.

Robinson Noble subsequently completed item 3 (surface water sampling in Hopkins Ditch) and then prepared a draft work plan (Robinson Noble, June 2021) that describes the specific procedures that would be utilized to complete item 1 and addresses items 2, 4, and 5. The June 2021 draft work plan also documents our findings with regards to item 3; specifically, laboratory analyses of surface water samples collected from Hopkins Ditch did not indicate the presence of any of the tested analytes (total and dissolved lead and carcinogenic polycyclic aromatic hy-

drocarbons). A copy of Robinson Noble's June 2021 draft work plan is included in Appendix A for reference. Following their review of the June 2021 draft work plan, Ecology issued their September 9, 2021 technical assistance letter (Appendix A), which is the subject of this supplemental RI.

2.0 Current Investigation/Cleanup Action

In their September 9, 2021 technical assistance letter, Ecology concurs that successful implementation of Robinson Noble's June 2021 work plan would satisfy the requests made by Ecology in their March 29, 2021 opinion letter (see Appendix A). The September technical assistance letter further states that "upon satisfaction of the requests presented in the letter (presuming all collected confirmatory data are in compliance with cleanup standards), a no further action determination is likely for the cleanup at the site." Ecology's technical assistance letter specifically requests the following regarding items 1 and 2 of the draft work plan:

Item 1 - PS1 Confirmatory Soil Sampling: Ecology concurs with the proposed approach to confirm soil sample PS1 as presented in Robinson Noble's May 2020 draft work plan.

Item 2 - Groundwater Monitoring Compliance: to confirm the March 2013, lead in groundwater result at MW-5, Ecology requests that at least one groundwater sample be collected and analyzed for total and dissolved lead, and that the groundwater sample from MW-5 be collected at the same time as the confirmatory sample at PS1.

Ecology's September 2021 technical assistance letter further states that they concur with the remainder of Robinson Noble's May 2020 draft work plan, specifically with regards to the remaining issues/areas of concern associated with item 2, and the entirety of items 3, 4, and 5.

2.1 PS1 Confirmatory Soil Sampling

On September 12, 2021, a Robinson Noble geologist was on site to collect an additional confirmation sample near the historic sample location of PS1 (in the pond excavation area; see Figures 3 and 4). Our geologist used a hand-held GPS unit to relocate the original PS1 sample location. Once the original sampling location was identified, our geologist used a pre-cleaned trowel to scrape away several inches of organic material and the upper few inches of soil to ensure that they were accessing representative surface soils for this area. Our geologist then collected a surface soil sample directly into a pre-cleaned, laboratory supplied sample container. As shown on Figure 4, this soil sample is designated as PS4-0.5. Following collection, the soil sample was immediately placed in a cooler containing Blue Ice® and maintained at temperatures below 4° Celsius pending delivery to the laboratory.

Soil sample PS4-0.5 was submitted to Freemont Analytical, Inc. (Freemont) for analyses of polycyclic aromatic hydrocarbons (PAHs) via EPA Test Method 8270 (SIM). Freemont is accredited by the State of Washington to perform this specific analysis, and the sample was submitted and analyzed within the prescribed hold times for this media and analysis. Analysis of soil sample PS4-0.5 did not indicate the presence of any PAHs above applicable laboratory detection limits. A copy of the complete laboratory report is provided in Appendix B.

2.2 Groundwater Sampling at MW-5

On September 12, 2021, Robinson Noble's geologist also conducted groundwater sampling at monitoring well MW-5 (see Figure 3 for monitoring well locations). Groundwater sampling was conducted using a bladder pump and Ecology prescribed low-flow sampling protocols. A new bladder and tubing were used, and prior to sampling the pump was decontaminated using an Alconox® wash and a double-distilled water rinse.

Prior to sample collection, groundwater from MW-5 was purged to remove excess sediment, and a minimum of three well volumes were removed to ensure that a representative groundwater sample was collected; in actuality, a total of 14.5 gallons of groundwater (approximately 7.5 well volumes) was purged from MW-5 prior to sampling. The pumped water was observed to be relatively clear at the end of the purging process. During the purging process, various field parameters including pH, temperature, conductivity, total dissolved solids, dissolved oxygen, and oxidation-reduction potential (ORP) were monitored and recorded. Groundwater samples were obtained after the measured field parameters reached stabilization (and a minimum of three well volumes had been purged). The field data sheet showing the measured parameters during the purging of MW-5 is provided in Appendix B.

Groundwater samples from MW-5 were collected directly into appropriate laboratory supplied containers and immediately placed in a cooler containing Blue Ice® and maintained at temperatures below 4° Celsius pending delivery to the laboratory. Groundwater samples from MW-5 were submitted to Freemont for analysis of total and dissolved lead via EPA test method 200.8. Freemont is accredited by the State of Washington to perform these specific analyses, and the samples were submitted and analyzed within the prescribed hold times for this media and these specific analyses.

Three samples were submitted from MW-5, which are designated as MW5-1, MW5-2, and MW5-3. MW5-1 represents the initial groundwater sample collected from monitoring well MW-5. MW5-2 was submitted as a blind duplicate (split) of MW5-1, and MW5-3 is a blind field blank consisting of deionized distilled water. Analyses did not indicate the presence of total or dissolved lead above applicable laboratory detection limits in any of the samples submitted. A copy of the complete laboratory report is provided in Appendix B.

2.3 Analytical Quality Assurance/Quality Control

In addition to the duplicate and field blank submitted by Robinson Noble for the groundwater sample from MW-5 (see Section 2.2), Freemont also conducted required internal quality assurance/quality control (QA/QC). Narratives regarding Freemont's QA/QC are provided in each of their laboratory reports for this project (Appendix B). Our review of Freemont's reported QA/QC analyses did not find any data quality discrepancies that would alter our conclusions or findings for this project.

3.0 EIM Submission

Robinson Noble has submitted all of the analytical data generated to date for this project to Ecology's Electronic Information Management (EIM) system. We recently verified that all previously submitted data has been received and is available through Ecology's EIM portal. We have not yet received confirmation from Ecology's EIM manager that the recently uploaded EIM data for this supplemental RI have been accepted.

4.0 No Further Action Request

All of the data collected to satisfy the June 2021 work plan are compliant with applicable cleanup standards. We therefore request a no further action opinion from Ecology for the John's Auto Wrecking site (Facility/Site No. 57665495; VCP Project No. SW1613) on behalf of Havens Estate Investments, LLC (the current property owner and VCP customer). We are requesting that Ecology provide a written opinion, and a completed opinion request form (ecy070219) is being submitted with this report.

5.0 References

Robinson Noble, July 2013; *John's Auto Wrecking, 411 93rd Avenue Southeast, Olympia, Washington, Facility/Site No. 57665495, VCP Project No. SW1127, Remedial Investigation*

Robinson Noble, May 2020; *John's Auto Wrecking, 411 93rd Avenue Southeast, Olympia, Washington, Supplemental Remedial Investigation/Cleanup Action, VCP Project No. SW1613*

Robinson Noble, June 2021; *John's Auto Wrecking, 411 93rd Avenue Southeast, Olympia, Washington, Draft Work Plan, VCP Project No. SW1613*

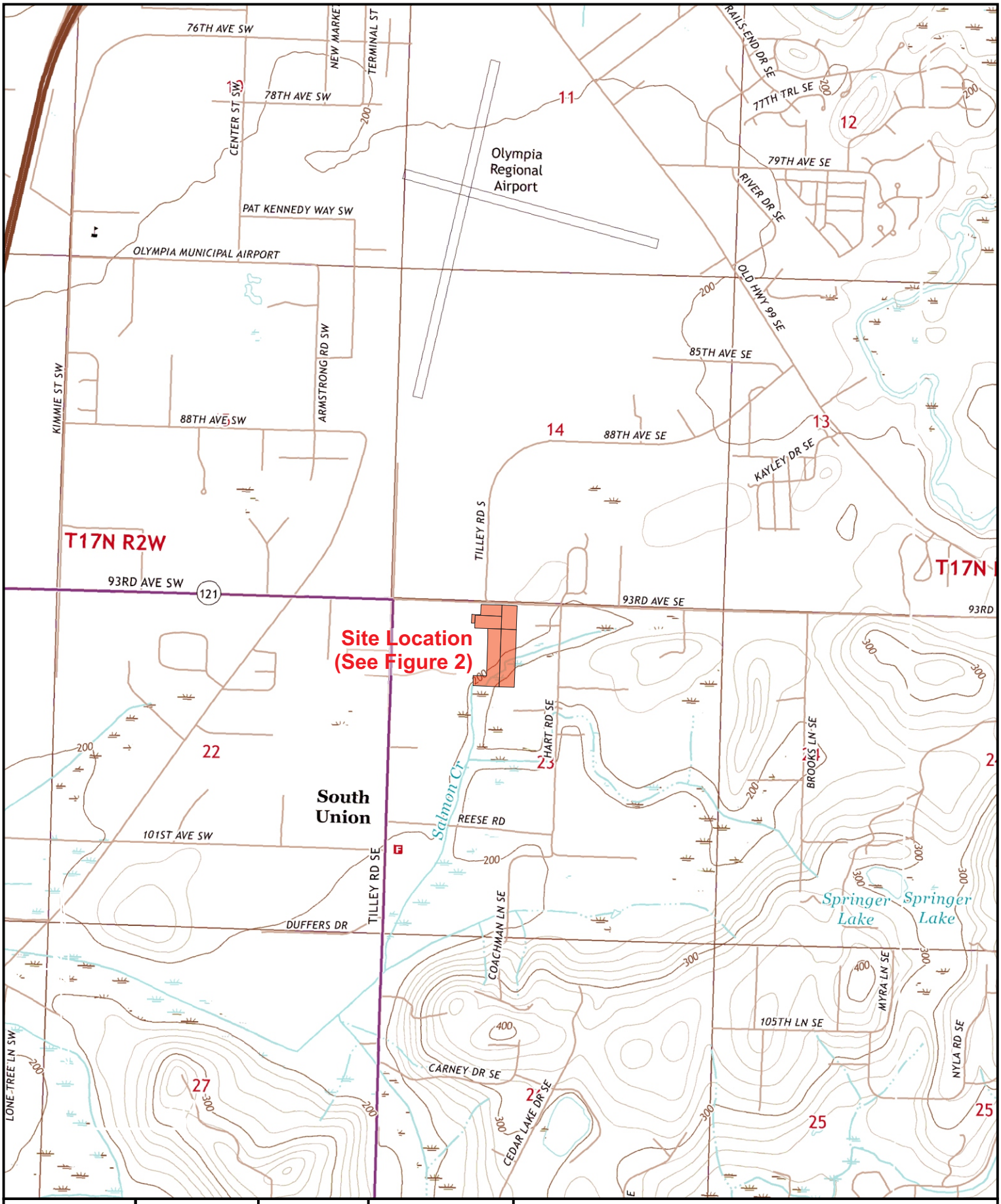
Washington State Department of Ecology, 2013, *Model Toxics Control Act statute and regulation*, compiled by the Washington State Department of Ecology Toxics Cleanup Program, Publication No. 94-06

Washington State Department of Ecology, Cleanup levels and risk calculations–database of cleanup levels for chemicals and respective media, available online at https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx

Washington State Department of Ecology, Opinion Letter on a cleanup at John's Auto Wrecking aka Havens Estate Investments, LLC, dated March 29, 2021

Washington State Department of Ecology, Technical Assistance Letter for the John's Auto Wrecking site, dated March 29, 2021

FIGURES

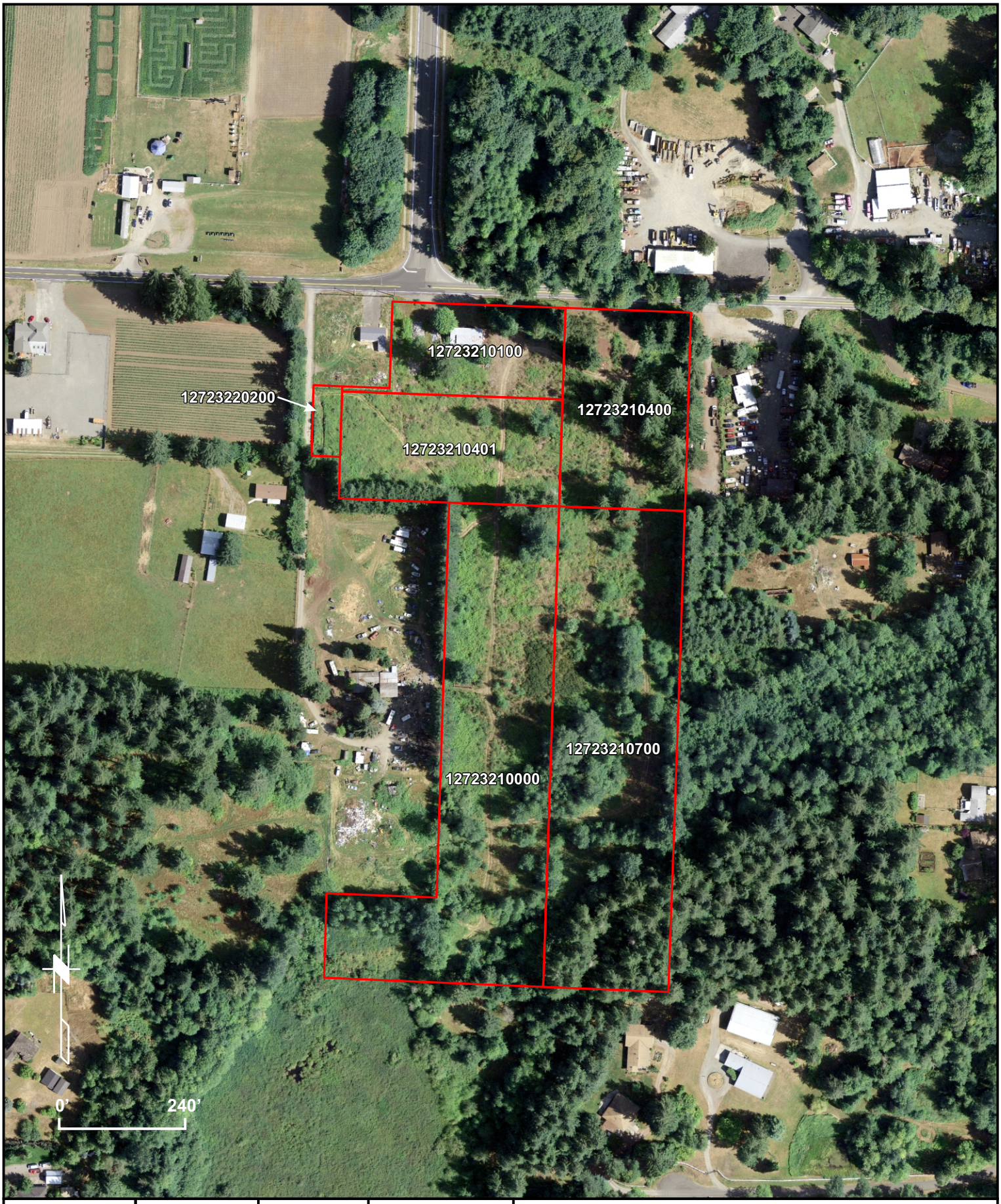


ROBINSON NOBLE	Note: Basemap taken from USGS Maytown Quadrangle	PM: MTW October 2021 2491-001G	Thurston County T 17 N/R 02 W - 23 Scale 1" = 2000'

Figure 1

Vicinity Map

John's Auto Wrecking, Supplemental RI



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Note: Image from Thurston County GIS 2018 Aerials

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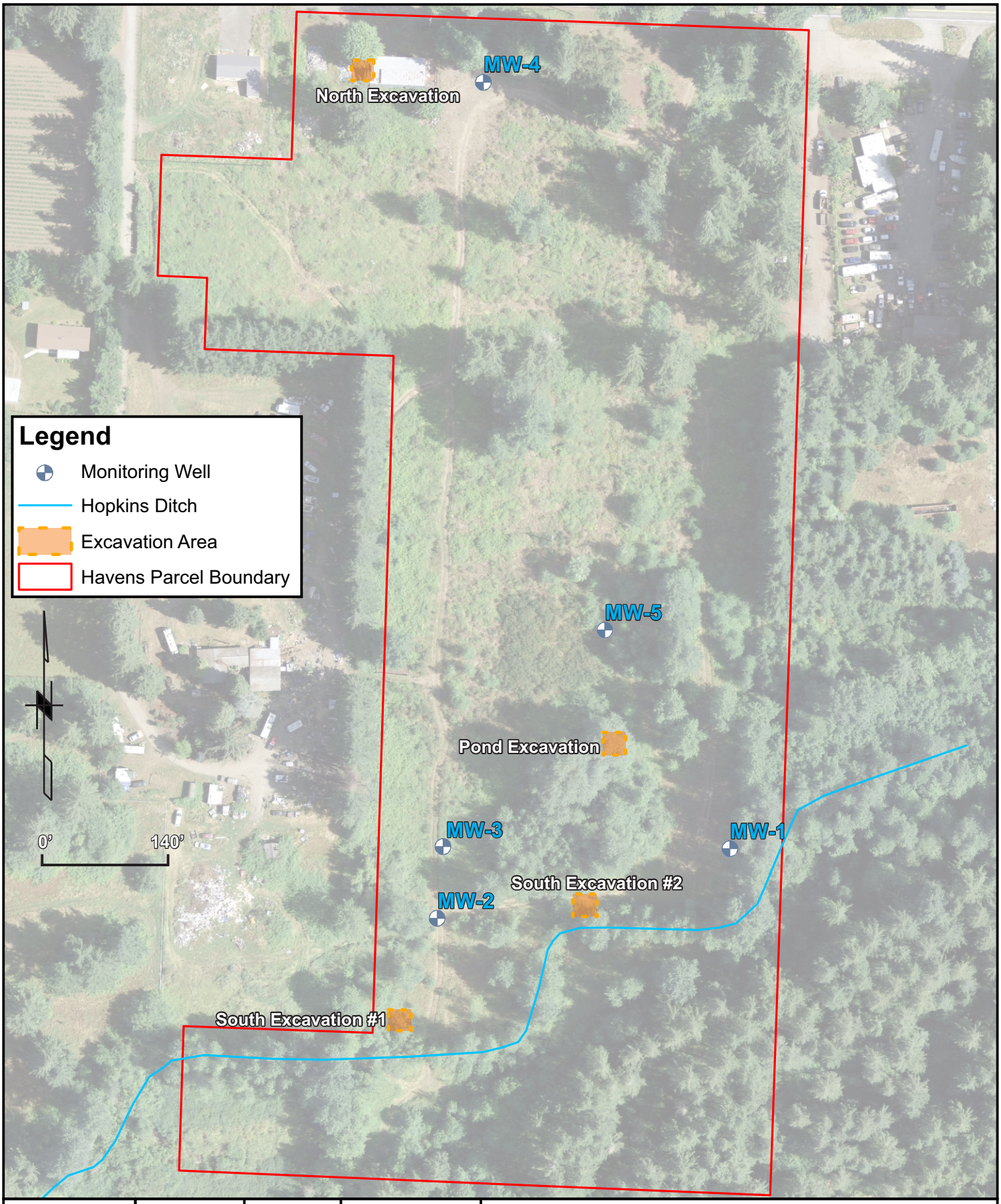
October 2021
2491-001G

Thurston County
T 17 N/R 02 W - 23
Scale 1" = 240'

Figure 2
Site Map
John's Auto Wrecking, Supplemental RI



ROBINSON NOBLE

Note: Image from Thurston County GIS 2018 Aerials

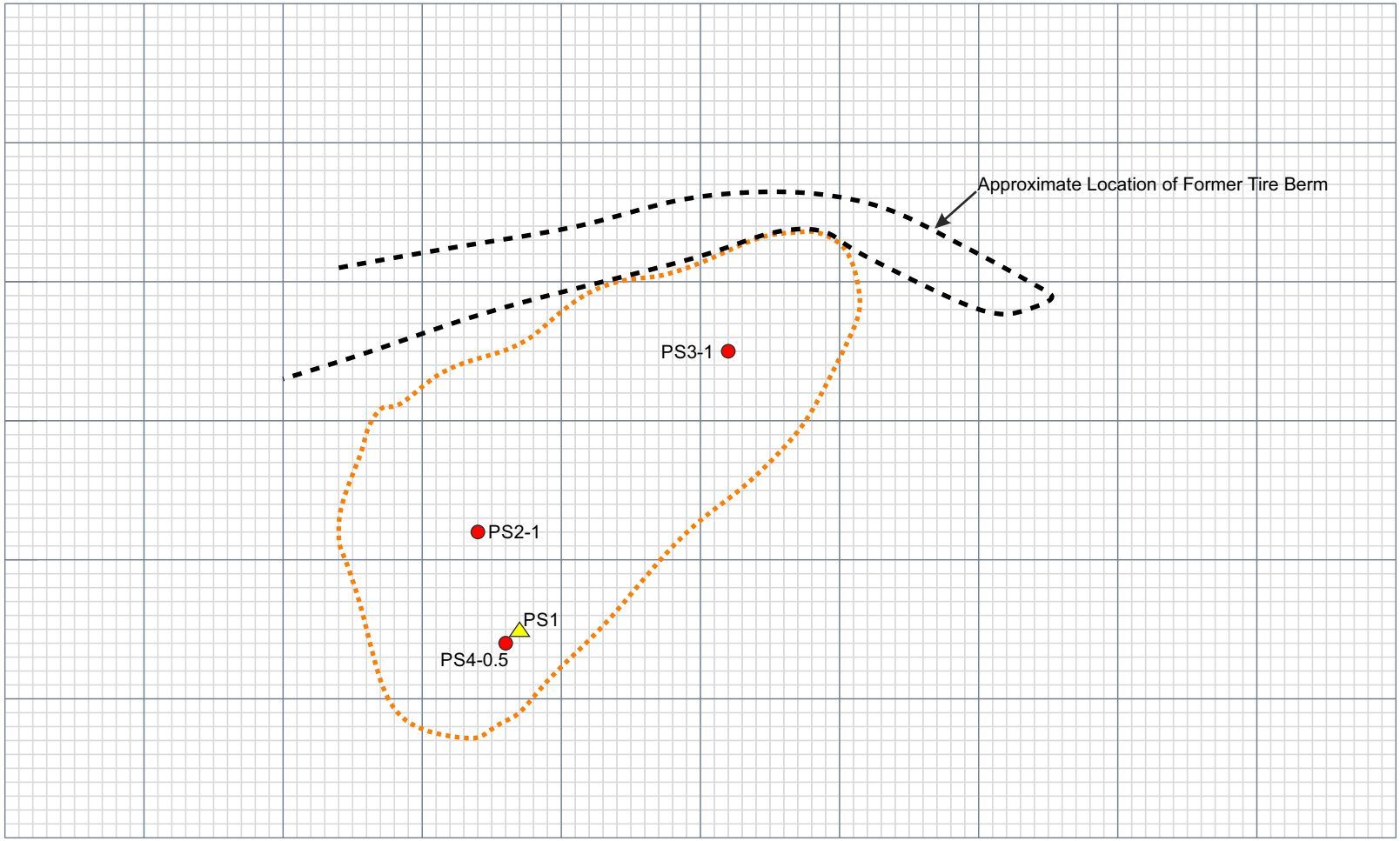
PM: MTW
October 2021
2491-001G

Thurston County
T 17 N/R 02 W - 23
Scale 1" = 140'

Figure 3

Monitoring Well and Excavation Location Map

John's Auto Wrecking, Supplemental RI



Grid squares = 1 ft.

Legend

- Confirmation Sample
- Original Investigative Sample
- Approximate Extent of Man-Made Pond and Remedial Excavation

ROBINSON NOBLE

PM: MTW
October 2021
2491-001G

Thurston County
T 17 N/R 02 W - 23

Figure 4

Pond-Area Remedial Excavation and Sample Location Map

John's Auto Wrecking, Supplemental RI

APPENDIX A

Key Documents

Electronic Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • 360-407-6300
Call 711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

March 29, 2021

Judith Wirth
Managing Member, Havens Estate Investments, LLC
5023 8th Ave NE
Seattle, WA 98105
judithwirth206@gmail.com

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),[1] chapter 70A.305 Revised Code of Washington (RCW).[2]

Issue Presented and Opinion

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[3] (collectively "substantive requirements of MTCA").

[1] https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html
[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305
[3] 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.[4] 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*[5] or WAC 173-340-720(9) have been met for each monitoring well location.[6]

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

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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[4] 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.

[5] Revised June 2016. https://apps.ecology.wa.gov/publications/SummaryPages/1009057.html

[6] 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[7] related to construction activity on Thurston County tax parcel 12723210101, with a street address of 401 Southeast 93rd 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

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.[8] Some site documents may be available on Ecology's Cleanup Site Search web page.[9]

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

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7 Ecology, Comments on SEPA 2019101360, April 19, 2019
8 https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
9 https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=2120

Analysis of the Cleanup

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 15th 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,[10] 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.

[10] 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,[11] 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.

[11] 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,[12] 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.

[12] 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[13]	Sample ID	Total cPAHs[14]
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		
Sample Mean of Three Greatest Concentrations			
	124.3		1.36
Standard Deviation			
	46.06		0.72
Kaplan-Meier 90/90 Upper Tolerance Limit on Mean of All Samples			
	96.4		1.13
Benthic Sediment Cleanup Objective			
	360		17
Benthic Cleanup Screening Level			
	>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.[14] The currently proposed lead cleanup level for the upland portion of the Site is 250 mg/kg, which is the MTCA

[13] Dry Weight in mg/kg.
[14] 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.[15]

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.[16]

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[15] 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

[16] 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 <u>Against</u> 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*[17] 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 <u>For</u> 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 93rd Street Southeast.[18] 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.[19]

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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[17] October 14, 2014
[18] https://www.ci.tumwater.wa.us/home/showpublisheddocument?id=3918
[19] 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.[20] 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.[21] 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.

[20] Ecology, Re: CSWGP for John's Auto Wrecking Site, June 18, 2018. Included in Enclosure D.
[21] 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[22] 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[23] 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).[24] 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

[22] WAC 173-340-900, Table 740-1
[23] WAC 173-340-900
[24] 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 [µg/L] vs. the 15 µg/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 µg/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.

AOC	Monitoring Well ID	Temporary Boring ID
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:[25]

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[26] 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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[25] See Areas of Concern and Current Investigation Figure, July 2013.
[26] 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[27] 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

[27] 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.[28] 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 constituent 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.[29] Plant growth is extensive across the Site; including areas were 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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[28] 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.

[29] 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).[30] There are no residual petroleum or volatile organic compounds at the Site at concentrations (e.g., exceeds the MTCA Method A cleanup level[31] 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.[32]

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[30] 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

[31] 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

[32] 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,[33] (b.) cleanup levels,[34] and (c.) applicable state and federal laws.[35] 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.[36]
Soil- Protection of Groundwater	Based on the protection of groundwater, the standard point of compliance is throughout the Site.[37]
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.[38]
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.[39]
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.[40]
Air Quality	Based on the protection of air quality, the point of compliance is indoor and ambient air throughout the Site.[41]
Sediment	Based on the protection of sediment quality, compliance with the requirements of 173-204 WAC.[42]

[33] WAC 173-340-200 "Point of Compliance."
[34] WAC 173-340-200 "Cleanup level."
[35] WAC 173-340-200 "Applicable state and federal laws," WAC 173-340-700(3)(c)
[36] WAC 173-340-740 (6)(d)
[37] WAC 173-340-747
[38] WAC 173-340-7490(4)(b)
[39] WAC 173-340-720(8)(b)
[40] WAC 173-340-730(6)
[41] WAC 173-340-750(6)
[42] 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[43]	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.

[43] 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[44] 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.[45]

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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[44] WAC 173-340-200, -706 and -745.

[45] 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 potion 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[46] (acute)
Lead	65[47] (chronic)
cPAHs	0.035[48]

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.[49] 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[50] 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.[51] The person conducting a cleanup action shall identify all applicable local, state, and federal laws.

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46 Clean Water Act value for acute risk to freshwater aquatic life.
47 Clean Water Act value for chronic risk to freshwater aquatic life.
48 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.
49 p. 12 in the Robinson-Noble's *Supplemental Remedial Investigation/Cleanup Action*, May 15, 2020
50 https://apps.oria.wa.gov/opas/index.asp
51 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.[52,53]

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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[52] WAC 173-340-710(2)

[53] 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.[54] 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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[54] 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,[55] 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:

Excavation	Location	Contaminant	Concentration (mg/kg)
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.

[55] 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,[56] or for any Site by following WAC 173-340-720(9).

[56] 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,[57] 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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[57] 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

1. Opinion Does Not Settle Liability with the State.

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

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

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

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

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

3. State is Immune from Liability.

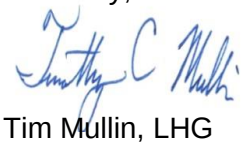
The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion.
See RCW 70A.305.170(6).

Contact Information

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

For more information about the VCP and the cleanup process, please visit our Voluntary Cleanup Program web site.[58] If you have any questions about this opinion, please contact me at (360) 407-6265 or tim.mullin@ecy.wa.gov.

Sincerely,



Tim Mullin, LHG
Toxics Cleanup Program
Southwest Regional Office

TCM/tam

Enclosures (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
Nicholas Acklam, Ecology, nicholas.acklam@ecy.wa.gov
Zachary Meyer, Ecology, zachary.meyer@ecy.wa.gov
Carol Serdar, Ecology, carol.serdar@ecy.wa.gov
Ecology Site File

[58] https://www.ecy.wa.gov/vcp

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Enclosure A

Site Description

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Site Description

The John's Auto Wrecking (Site) is located at 411 93rd 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).[59]

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.[60] 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."[61] 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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[59] Zoning current as of September 10, 2020.
[60] https://www.ci.tumwater.wa.us/home/showpublisheddocument?id=3918
[61] 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

Document List

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Basis for the Opinion – List of Documents.

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 93rd 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

Hopkins Ditch Photographs

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Enclosure D

Email Correspondence

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From:	Max Wills
To:	Mullin, Tim (ECY)
Cc:	JudithWirth206@gmail.com; Philip Grafious (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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Hi Tim,

Sorry the delay in responding; I had to do some digging and review (this project has be 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

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www.robinson-noble.com

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

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

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

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 geologist 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-ax 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.
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www.robinson-noble.com

From: Mullin, Tim (ECY) [mailto:TMUL461@ECY.WA.GOV]
Sent: Wednesday, October 14, 2020 4:41 PM
To: Judith Wirth <judithwirth206@gmail.com>; Max Wills <MWills@robinson-noble.com>; Philip Grafious <pgrafious@gmail.com>
Cc: Mullin, Tim (ECY) <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

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>
Sent: Wednesday, October 14, 2020 9:46 AM
To: Mullin, Tim (ECY) <TMUL461@ECY.WA.GOV>; Max Wills <MWills@robinson-noble.com>; Philip Grafious <pgrafious@gmail.com>
Subject: Re: wrecking yard

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> 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

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) 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

DEPARTMENT OF ECOLOGY
State of Washington

From: Koberstein, Marla (ECY)
Sent: Monday, June 18, 2018 9:11 AM
To: Max Wills <MWills@robinson-noble.com>; Serdar, Carol (ECY) <cser461@ECY.WA.GOV>
Cc: Mullin, Tim (ECY) <TMUL461@ECY.WA.GOV>; Meyer, Zachary (ECY) <ZMEY461@ECY.WA.GOV>; Moon, Amy (ECY) <amym461@ECY.WA.GOV>; Montague-Breakwell, Chris (ECY) <cmon461@ECY.WA.GOV>; Judith Wirth <judithwirth206@gmail.com>; Carpenter, Honor (ECY) <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

From: Max Wills [mailto:MWills@robinson-noble.com]
Sent: Friday, June 15, 2018 3:15 PM
To: Serdar, Carol (ECY) <cser461@ECY.WA.GOV>
Cc: Mullin, Tim (ECY) <TMUL461@ECY.WA.GOV>; Meyer, Zachary (ECY) <ZMEY461@ECY.WA.GOV>; Moon, Amy (ECY) <amym461@ECY.WA.GOV>; Montague-Breakwell, Chris (ECY) <cmon461@ECY.WA.GOV>; Judith Wirth <judithwirth206@gmail.com>; Koberstein, Marla (ECY) <mkob461@ECY.WA.GOV>; Carpenter, Honor (ECY) <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
Robinson Noble, Inc. | Hydrogeologists. Geotechnical Engineers. Environmental Scientists.
17625 130th Avenue NE, Suite 102, Woodinville, WA 98072 | 425.488.0599
www.robinson-noble.com

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

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

Max Wills

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 by 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 fort 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

* 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

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.

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

Environmental Covenant Reference Information

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Environmental Covenant Reference Information

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.[62] 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 (µg/L) for groundwater, and microgram per meter cubed (µg/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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[62] 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 or (360) 407-6754 for direction on evaluating financial assurance requirements.[63] 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).[64]

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.

---

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

[64] 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.

Electronic Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • 360-407-6300
Call 711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

September 9, 2021

Judith Wirth
5023 8th Ave NE
Seattle, WA 98105
judithwirth206@gmail.com

Re: Technical Assistance at the following Site:

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

Dear Judith Wirth:

Thank you for providing Robinson-Noble's June 9, 2021, *Draft Work Plan* (the Report),[1] in response to the Washington State Department of Ecology's (Ecology) March 29, 2021 opinion letter (the Letter) for the John's Auto Wrecking facility (Site).[2] Ecology appreciates your continued efforts to independently clean up this Site.

The Letter provided five items needed to evaluate the Site cleanup. Your Report provided additional information that addresses those items and requested a written opinion.

Ecology is providing this written technical assistance letter through our standard Volunteer Cleanup Program (VCP) technical assistance process. Ecology will continue to ensure there is a publically accessible written record of our communications for this independent cleanup project. Ecology relies on our VCP customers to conduct their cleanups independently, and report how the cleanup they conducted meets all pertinent requirements when requesting an opinion. In this letter, we are responding to the

[1] Draft Work Plan, June 8, 2021.
[2] https://apps.ecology.wa.gov/gsp/CleanupSiteDocuments.aspx?csid=2120

additional technical information you provided in the Report and how its meets the substantive requirements of MTCA.

Upon satisfaction of the requests in this letter, and presuming all collected confirmatory data are in compliance with cleanup standards, a no further action determination is likely for the cleanup at this Site.

Based on Ecology's recent opinion and the information you provided in the Report, Ecology's recommendations to complete the cleanup are:

Work Plan Concurrence: Ecology supports the proposed work and concurs that successful implementation of the proposed work plan will satisfy the requests made in our March 29, 2021, opinion letter. Ecology recognizes that the Report provides additional information in addition to the proposed work. We understand that this was done to consolidate deliverables and we accept the approach.

PS1 Confirmatory Soil Sampling: Ecology concurs with the proposed approach to confirm soil sample PS1 as presented in the Report.

Groundwater Monitoring Compliance: In our March 29, 2021, opinion letter, Ecology requested a demonstration of how groundwater monitoring results comply with either WAC 173-340-720(9) or, because this is a petroleum cleanup, section 10.3 in Ecology publication no. 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*.[3]

To clarify Ecology's position, we are providing additional detail regarding expectations for groundwater compliance monitoring requirements. WAC 173-340-720(9)(c)(iv) requires that compliance with groundwater cleanup levels shall be determined for each groundwater monitoring well or other monitoring points.

1) Site cleanup standards must meet those requirements which are in place at the time of the request for Site closure.
2) Groundwater monitoring requirements:
    a. Each identified area of concern (AOC) had its own release or releases. Grab groundwater samples were collected in some AOCs and monitoring wells were installed to evaluate selected AOCs. The relationship between AOCs and those installed wells is presented in the table below.

[3] Revised June 2016. Section 10.3 is on pages 156-162 of the guidance.

Groundwater compliance should be demonstrated at each AOC independently unless it is known that contaminated groundwater from one AOC is migrating into another AOC.

AOC(s)	Monitoring Well(s)
7 & 8	MW-1
9B	MW-2, MW-3
2	MW-4
9A	MW-5

b. If using statistical analysis from WAC 173-340-720(9): a minimum of 11 consecutive quarters of compliant results would likely be necessary.

c. If using Stage III monitoring protective of wetlands from section 10.3 in the *Guidance for Remediation of Petroleum Contaminated Sites*: a minimum of 4-8 quarters of compliant results after cleanup is completed would be necessary.

d. Alternately, Ecology provides a potential approach for Site groundwater monitoring to demonstrate compliance with cleanup standards. Please see the table below.

e. The surface water performance sample results show that the surface water and sediment pathways are incomplete for the Site. No additional evaluation of the surface water and sediment pathways appears to be necessary at the Site.

Historically, evaluation of concentrations of hazardous substances in Site groundwater has been primarily based on grab groundwater results. Where grab groundwater results required additional evaluation, monitoring wells were installed. For monitoring wells MW-2 through MW-5, a single sampling event was completed at each monitoring well and compared to MTCA Method A and B cleanup levels at a standard point of compliance. At monitoring well MW-1, four quarters of monitoring well results were used to evaluate detections (mainly lead and other metals) at AOCs 7 and 8. No petroleum was detected in any groundwater sampled from any of the monitoring wells. Generally, a few total metals concentrations were detected and further evaluated on a per well basis.

In the table below, Ecology presents the number of quarters of compliant results. No exceedances of cleanup levels in groundwater were detected, except for total lead at MW-1. Dissolved lead was less than cleanup levels. Further explanation regarding how groundwater results were evaluated at MW-1 is provided on page 12 in the March 29, 2021, opinion letter from Ecology. **Ecology concurs that it is more likely than not that sufficient monitoring had been completed at MW-1 to determine that Site hazardous substances concentrations in groundwater were in compliance with cleanup levels.**

Monitoring Well ID	Additional Monitoring Needed?	Additional Analysis Requested
MW-1	No	None
MW-2 & MW-3	No	None
MW-4	No	None
MW-5	Yes	Lead[4]

There were no detections of Site hazardous substances in groundwater sampled during the August 2009, event at MW-2 and MW-3 (the two monitoring wells for AOC 9B). Monitoring wells MW-4 and MW-5 were sampled in March 2013, and no Site hazardous substances were detected, except for copper, zinc, and lead at MW-5. The concentrations of copper and zinc were approximately at the laboratory practical quantitation limit (PQL), and were well below the respective cleanup levels. Soils contamination adjacent to MW-4 has since been removed by excavation and disposed of at Cowlitz County Landfill, a permitted facility. Because of these factors, it is Ecology's opinion that it is more likely than not that copper and zinc do not require further evaluation in groundwater at MW-5.

However, lead in groundwater at MW-5 needs to be analyzed further. The concentration of lead in groundwater at MW-5 in March 2013 was 11 micrograms per Liter (µg/L),

[4] Concentrations of copper and zinc, though detected, were at approximately the laboratory practical quantitation limit (PQL). The concentrations are much less than the respective cleanup levels for each contaminant. Based on professional judgement under WAC 173-340-360(2), it is Ecology's opinion that it is more likely than not that no additional sampling for copper and zinc in Site groundwater is necessary.

which is less than the MTCA Method A cleanup level for lead in groundwater of 15 µg/L, but still a significant detection. Typically, this would require up to four quarters of compliant groundwater monitoring results (like at MW-1).

To confirm the March 2013, lead in groundwater result at MW-5, Ecology requests you collect at least one groundwater sample and analyze for total and dissolved lead. Ecology recommends that you use low flow groundwater sampling methodology, sample for both total and dissolved lead, be extremely careful to not position the tubing intake too deep into the well as to avoid unintentionally sampling sediment from the bottom of MW-5, and to ensure a nonturbid sample is collected.

Ecology recommends collecting this groundwater sample at MW-5 at the same time as the confirmatory soil sample at PS1.

Surface Water Performance Samples: Data provided with the Report show three groundwater samples were collected in April 2021, from the Hopkins Ditch. Flowing surface water was observed in the ditch. One surface water sample was collected as close as possible to each of the two August 2019, remedial excavations, and a third sample was collected as a background sample. Lead and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were analyzed in each sample, as these were the Site hazardous substances in each of the remedial excavations. Lead and cPAHs were not detected in surface water sampled. Based on these results, Ecology concludes that it is more likely than not that the following applies to the Site:

1) Surface water (and by extension, freshwater sediment) has not been impacted by any release at the Site.
2) Soil and groundwater cleanup levels apply to the Site. See the cleanup table from p. 18 in our March 29, 2021, opinion letter.
3) As freshwater wetlands have not been impacted by the Site, groundwater compliance monitoring under the Stage III guidance[5] does not require eight quarters. The more standard four consecutive quarters can be evaluated to determine if concentrations of Site hazardous substances in groundwater comply at the Site.

[5] Section 10.3 in Ecology publication no. 10-09-057, *Guidance for Remediation of Petroleum Contaminated Sites*.[5]

List of Applicable Laws: Based on the discussion of applicable local, state, and federal laws in both the Report and the March 29, 2021, opinion letter, it appears that this condition is satisfied. Ecology determines that the requirements under WAC 173-340-360(2)(a)(iii) and WAC 173-340-710 have been met. No adjustments to the cleanup levels were required because of the review of applicable laws. No further review of applicable laws for the cleanup is needed.

Property-Specific No Further Action (NFA) Evaluation: In the Report, you indicate that you intend to pursue a Site-specific NFA. Also, to reiterate from our March 29, 2021, opinion, it is Ecology's opinion that it is more likely than not that Thurston County parcel 12723220200, 0.19 acres in size, was not impacted by a release and is not part of the Site.

Disposal Ticket: The Report includes confirmation of disposal of contaminated soils on August 31, 2019, at Cowlitz County Landfill, a permitted disposal facility. Thank you for providing this essential information.

Electronic Information Management Database (EIM) Data: Ecology requests that prior to requesting your next opinion, please ensure all data in EIM is correct and up-to-date based on Toxics Cleanup Program Policy 840, data submittal requirements. Incomplete data in Ecology's EIM database is a common contributor to delayed NFA determinations. Please continue to submit Site data as it is collected to EIM and work with Ecology's EIM data coordinators to ensure that you accurately upload your data.

Future Deliverable: If all data collected to satisfy the work plan are compliant with cleanup standards, Ecology recommends compiling these data into a single deliverable. This would also be the NFA request and be accompanied by an opinion request form.[6]

Public Notice and Comment: As a reminder, since the Site is ranked and included on the Hazardous Sites List (1 - Highest Assessed Risk) after Ecology issues a determination of Site NFA, a minimum 30-day public notice and comment period is required. This process is completed by Ecology as part of the process to remove a Site from the Hazardous Sites List.

[6] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Voluntary-Cleanup-Program/Working-with-VCP#RequestingOpinions

Contact Information

Thank you for choosing to clean up the Site under the VCP. For more information about the VCP and the cleanup process, please visit our VCP web site.[7] For questions, please contact me at 360-407-6265 or tim.mullin@ecy.wa.gov.

Sincerely,

Tim Mullin, LHG
Toxics Cleanup Program
Southwest Regional Office

TCM:sl

cc: Max Wills, Robinson-Noble; MWills@robinson-noble.com
Nicholas Acklam, Ecology; nick.acklam@ecy.wa.gov
Ecology Site File

[7] http://www.ecy.wa.gov/vcp

ROBINSON NOBLE

JOHN'S AUTO WRECKING
411 93RD AVENUE SOUTHEAST, OLYMPIA, WASHINGTON
DRAFT WORK PLAN
(VCP Project No. SW1613)
JUNE 8, 2021

by

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Principal Hydrogeologist

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JOHN'S AUTO WRECKING
411 93RD AVENUE SOUTHEAST, OLYMPIA, WASHINGTON
DRAFT WORK PLAN
(VCP Project No. SW1613)
June 2021

JOHN'S AUTO WRECKING
411 93RD AVENUE SOUTHEAST, OLYMPIA, WASHINGTON
DRAFT WORK PLAN
(VCP Project No. SW1613)
June 2021

1.0 Introduction and Purpose

This work plan provides a description of additional cleanup actions and other justifications requested by the Washington State Department of Ecology (Ecology) in their recent opinion letter (dated March 29, 2021) for the John's Auto Wrecking site (Ecology Facility/Site No. 57665495). A copy of Ecology's March 2021 opinion letter is included in Appendix A for reference.

The site address is 411 93rd Avenue Southeast, Olympia, Washington. A vicinity map of the site is presented in Figure 1. A site map is presented in Figure 2. The site is largely vacant and undeveloped but was previously occupied by an auto-wrecking business (John's Auto Wrecking) up until around 2001. The site is listed on Ecology's Confirmed or Suspected Contaminated Sites List (CSCSL) as having confirmed or suspected soil and/or groundwater contamination (arsenic, lead, other priority pollutant metals, unspecified petroleum products, and polycyclic aromatic hydrocarbons). Site investigations and remediation are currently being addressed through the auspices of Ecology's Voluntary Cleanup Program (VCP) and is assigned VCP Project No. SW1613. Table 1 summarizes key regulatory information for the site.

Table 1. Key Regulatory Information

Site Name	John's Auto Wrecking			
AKA	Havens Estate Investments, LLC			
Site Address	411 93rd Avenue SE, Olympia, Washington 98501-9701 (Thurston County)			
Facility/Site No.	57665495			
VCP Project No.	SW1613 (*previous work completed for Alan Wertjes under SW1127*)			
Contact Information				
Name		**Address**	**Phone #**	**Email**
Timothy Mullin, Ecology, SWRO	Site Manager	300 Desmond Drive SE Lacey, WA 98504	(360) 407-6265	Timothy.Mullin@ ecy.wa.gov
Judith Wirth, Havens Estate Investments, LLC	Property Owner's Representative, VCP Client	5023 8th Ave. NE Seattle, WA 98105-3602	(206) 632-1924	JudithWirth206@ gmail.com
Max Wills, Robinson Noble	Consultant, Project Manager	17625 130th Ave. SE, Suite 102 Woodinville, WA 98072	(425) 488-0599	MWills@ robinson-noble.com

In 2020, Robinson Noble completed a Supplemental Remedial Investigation/Cleanup Action report (Robinson Noble, May 2020) on behalf of the current site owner, Havens Estate Investments, LLC. This report (copy on file with Ecology) documents the remedial investigations and cleanup actions completed to date at the site over the past approximately 20 years. Following their review of Robinson Noble's 2020 report, Ecology issued a formal opinion letter (Appendix A) that states that a no further action (NFA) determination is likely appropriate for the site once

requested actions have been completed. The requested actions listed in the opinion letter are summarized by Ecology as follows:

Item 1 - Collect at least one additional confirmatory soil sample at PS1 (pond excavation area).

Item 2 - Demonstrate how groundwater monitoring requirements under section 10.3 in Ecology Publication No. 10-09-057, Guidance for Remediation of Petroleum Contaminated Sites or WAC 173-340-720(9) have been met for each monitoring well location.

Item 3 - Collect at least three performance surface water samples from Hopkins Ditch.

Item 4 - Confirm list of applicable local, state, and federal laws. Add to the list if necessary, justify if no additions are required.

Item 5 - Determine if a Property-specific no further action (NFA) request (with or without institutional controls) is appropriate for the cleanup.

2.0 Implementation and Justifications

2.1 Item 1; Additional Soil Confirmation Sampling Near PS1 *(Implementation)*

Ecology's March 29, 2021 opinion letter requests that at least one additional soil confirmation sample be collected at the historical location of sample PS1 (in the pond excavation area) to confirm that carcinogenic polycyclic aromatic hydrocarbon (cPAH) contamination has been adequately removed. This will be accomplished during mid- to late-summer when this area is known to be dry. A Robinson Noble geologist will use a hand-held GPS unit to re-locate the sampling location for the original PS1 soil sample.

Once the sampling location is re-located, our geologist will use a pre-cleaned trowel to scrape away any organic material and the upper few inches of soil to ensure that they are accessing representative surface soils for this area. Our geologist will then collect at least one surface soil sample directly into pre-cleaned, laboratory supplied sample containers. Samples will be immediately placed in a cooler containing Blue Ice® and maintained at temperatures below 4° Celsius pending delivery to the laboratory.

All samples will be submitted to Freemont Analytical, Inc. (Freemont), subcontracted through Libby Environmental, Inc. (Libby), for analyses of cPAHs via EPA Test Method 8270 (SIM). Freemont is accredited by the State to perform this specific analysis. All analytical results will be compared to the Model Toxic Control Act (MTCA) Method A soil cleanup levels for unrestricted land uses for benzo(a)pyrene and the total toxic equivalent concentration (TTEC) for benzo(a)pyrene calculated from the concentrations of the individual cPAH compounds per WAC 173-340-708(8)(e).

2.2 Item 2; Additional Groundwater Monitoring *(Justification)*

Groundwater monitoring completed to date at the site, including both the frequency of testing and the compounds/analytes to be tested for (contaminants of concern; COC), have been based on our findings and direct input from the VCP site manager assigned to the project. To date, five standard 2-inch diameter monitoring wells (MW-1 through MW-5) have been installed at the site. All of the monitoring wells are completed in the shallow water-table aquifer with screen-interval depths generally between 5 and 17 feet. Figure 3 shows the locations of each of the monitoring wells.

As described below in Sections 2.2.1 through 2.2.3, petroleum soil impacts at the site have historically been constrained to a few areas of minor surface staining, and no petroleum impacts to groundwater are present. Each of the five monitoring wells was installed to verify that previous detections of metals in groundwater "grab" samples obtained from temporary wells set in direct-push borings were erroneous results related to high turbidity. Therefore, the guidance set forth in Ecology Publication No. 10-09-057 and WAC 173-340-720(9) is not generally relevant to the purpose for which these wells were installed.

With the exception of MW-1, it was determined by both Robinson Noble and the Ecology site manager (Eugene Radcliff) that additional groundwater monitoring did not serve a practical function and, therefore, was not warranted or required by Ecology during the completion of our 2020 remedial investigation (Robinson Noble, May 2020). As described below in Section 2.2.1, MW-1 was monitored for suspected metal impacts for four consecutive quarters and was also verified to be not impacted.

2.2.1 Monitoring Wells MW-1, MW-2, and MW-3

As documented in Sections 2.2.1 and 2.2.2 of our 2013 RI report (Robinson Noble, July 2013), investigations conducted in 2009 found surface and near-surface soil impacts (oil-range hydrocarbons and metals) associated with observed surface staining. These areas were excavated and the soils were removed from the site. Subsequent groundwater testing did not detect any petroleum impacts but did find metal impacts in two of the areas of concern (AOCs), AOC-7&8 and AOC-9B. These metal detections, however, were attributed to the fact that the groundwater samples were collected through temporary wells placed in direct-push borings, and that the detections were an artifact of high turbidity (high levels of turbidity were noted in each of the samples with elevated metals).

Two monitoring wells (MW-1 and MW-2) were installed in 2009 to more accurately assess the previous metal detections; MW-1 was installed in AOC-7&8 and MW-2 in AOC-9B. A third monitoring well (MW-3) was installed north of MW-2 primarily to determine gradient; MW-3 is not associated with a particular AOC or any previously detected soil impacts. Subsequent analyses of groundwater samples collected from these wells in August 2009 for MTCA-5 metals (lead, cadmium, chromium, arsenic, and mercury) plus copper and zinc, for both total and dissolved metals, did not find any of the analytes present above laboratory detection limits. This verified that previously detected metals in the grab-samples were an artifact of high turbidly, which was the primary purpose of installing these wells.

As documented in Section 3.8 of our 2013 RI (Robinson Noble, July 2013), additional groundwater sampling was conducted at MW-1 in April 2013, again to verify that metal detections (specifically arsenic) of grab-samples from nearby direct-push borings were an artifact of elevated turbidity. The 2013 analysis of the MW-1 sample found a total arsenic concentration of 5.4 μg/L, which is at or just over the MTCA Method A groundwater cleanup level of 5.0 μg/L; subsequent analyses for dissolved arsenic did not find arsenic above laboratory detection limits. In discussions with Eugene Radcliff (the VCP site manager at that time), it was determined that arsenic in the groundwater at this specific location may be an issue. Mr. Radcliff recommended conducting up to four consecutive quarters of groundwater monitoring at MW-1. This was included in our October 2013 work plan, which Mr. Radcliff specifically concurred with in his January 31, 2014 email.

As documented in Section 4.3 of our 2020 Supplemental RI/Cleanup Action report (Robinson Noble, May 2020), groundwater monitoring at MW-1 was conducted in October 2014, January 2015, May 2015, and August 2015. Groundwater samples obtained during each monitoring

event were submitted for analysis of MTCA-5 metals plus copper, zinc, and nickel. With the exception of lead during the May 2015 monitoring event, and zinc during the October 2014, January 2015, and August 2015 monitoring events, analyses did not find any metals above laboratory detection limits. The maximum detected concentration of zinc was 48 μg/l during the October 2015 monitoring event, which is well below the applicable cleanup level (MTCA Method B, non-cancerous) of 4,800 μg/L. For the May 2015 monitoring event, analyses indicated a lead concentration of 15 μg/L for the initial analysis and 16 μg/L for the duplicate analysis, which are at and just above the MTCA Method A groundwater cleanup level of 15 μg/L. This particular sample was noted as being turbid, and subsequent analysis for dissolved lead indicated a concentration of 7 μg/L, indicating that a portion of the total lead detection was again due to elevated turbidity.

2.2.2 Monitoring Well MW-4

As documented in Section 3.3 of our 2013 RI (Robinson Noble, July 2013), monitoring well MW-4 was constructed in AOC-2 to evaluate potential impacts associated with a reported battery shop, which may or may not have actually existed. During the 2013 investigations, soil samples were collected from two hand borings in this same AOC and the boring of MW-4, and analyzed for petroleum hydrocarbons (via NWTPH-HCID) and MTCA-5 metals (lead, cadmium, chromium, arsenic, and mercury) plus copper, zinc, and nickel. Analyses did not detect petroleum hydrocarbons in any of the soil samples and only minor concentrations of metals in the shallow subsurface (all below applicable cleanup levels). Subsequent analyses of a groundwater sample collected from MW-4 also did not detect petroleum hydrocarbons or any metals with the exception of zinc; zinc was detected in the groundwater sample at a concentration of 6 μg/L, well below the applicable cleanup level (MTCA Method B non-cancerous) of 4,800 μg/L.

2.2.3 Monitoring Well MW-5

As documented in Section 3.9 of our 2013 RI (Robinson Noble, July 2013), monitoring well MW-5 was drilled in AOC-9A, which was originally thought to be a car-crushing area; the car-crushing area was later determined to be located further south in AOC-9B (see discussion above for MW-2 in Section 2.2.1). Monitoring well MW-5, along with two hand-borings (HB7 and HB8), and one additional direct-push boring (B23), were drilled in AOC-9A during our July 2013 investigation to provide better coverage and to augment previous investigations of this AOC; previous investigation of AOC-9A included one test pit and one direct-push boring, and testing of each did not indicate any VOC, petroleum, or metal impacts to soil or groundwater.

During the 2013 investigations, soil samples collected from B23 and the boring of MW-5 were analyzed for gasoline- through oil-range petroleum hydrocarbons and MTCA-5 metals (lead, cadmium, chromium, arsenic, and mercury) plus copper, zinc, and nickel. Analyses did not detect petroleum hydrocarbons in any of the soil samples and only minor concentrations of select metals in the shallow subsurface (all well below applicable cleanup levels). Subsequent analyses of the groundwater samples collected from B23 and MW-5 also did not detect petroleum hydrocarbons and only low concentrations of select metals (again, all below applicable cleanup levels).

2.3 Item 3; Surface Water Sampling *(Implementation)*

On April 28, 2021, a Robinson Noble geologist collected three surface water samples from Hopkins Ditch ("SurWtr-1", "SurWtr-2", and "SurWtr-3"). As requested in Ecology's March 29, 2021 opinion letter, one sample (SurWtr-1) was collected up-stream of the two "south excavations"; SurWtr-2 was then collected adjacent to South Excavation #2, and SurWtr-3 adjacent to

South Excavation #1. Figure 3 shows the sample locations for the three surface water samples. Photographs of the sample locations are provided in Appendix B. Table 2 below lists the latitudes and longitudes of the collection point for each of the three samples. The sample collection points are also currently marked with field flags.

All of the surface water samples were collected approximately mid-channel and midway between the water surface and the bottom of the channel (at depths of approximately 1¼ to 1½ feet). To obtain the samples our geologist had to wade into the ditch, so caution was exercised to not "stir-up" excessive bottom sediment prior to sampling. All samples were collected directly into pre-cleaned, laboratory supplied sample containers and immediately placed in a cooler containing Blue Ice® and maintained at temperatures below 4° Celsius pending delivery to the laboratory.

All samples were initially submitted to Libby Environmental, Inc. (Libby) for analysis of total and dissolved lead (EPA Test Method 7010 Series) and cPAHs (EPA Test Method 8270 SIM). Libby subcontracted with Freemont Analytical, Inc. (Freemont) to conduct the cPAH analyses. Samples were all delivered and analyzed (or appropriately preserved) within prescribed holding times under appropriate chain of custody procedures. Libby and Freemont are both accredited with the State of Washington to perform the respective analyses.

As shown below in Table 2, analyses did not indicate the presence of total or dissolved lead, or cPAHs at concentrations above applicable laboratory detection limits in any of the samples. The complete laboratory report is provided in Appendix C.

Table 2. Surface Water Sample Locations and Analyses

Sample #	Location		Total Lead (µg/L)	Dissolved Lead (µg/L)	cPAHs (µg/L)
	Latitude	Longitude			
SurWtr-1	46.9499430051392	122.900366562835	<5.0	<5.0	ND
SurWtr-2	46.9499402690470	122.900660012499	<5.0	<5.0	ND
SurWtr-3	46.9495298062937	122.901467428207	<5.0	<5.0	ND

ND indicates the analytes were not detected above the laboratory reporting limits or the method detection limits

The laboratory report in Appendix C provides narratives and the analytical data for required quality assurance/quality control (QA/QC). Our review of the QA/QC data provided in the laboratory report did not identify any discrepancies that would alter our interpretations of the analytical data provided.

2.4 Item 4; Applicable Laws *(Justification)*

Throughout this project, Robinson Noble has worked closely with State and local officials to ensure that all cleanup actions and remedial investigations were completed in compliance with appropriate Federal, State, and local regulations. This includes, but is not limited to, the various Ecology site managers assigned to the John's Auto Wrecking site, Ecology's contaminated construction stormwater inspector (Carol Serdar), and officials with the Thurston County Planning Department. The primary regulations and permits applicable to this project are as follows.

As stated above in Section 1.0, all remedial investigations and cleanup actions for the site are being conducted through the auspices of Ecology's Voluntary Cleanup Program (VCP). The site is currently assigned VCP Project No. SW1613 (see Table 1 in Section 1.0). As such, all cleanup compliance is based on the Model Toxic Control Act (MTCA) regulation and statute (Chapter 173-340 WAC; Chapter 70.105D RCW). MTCA Method A cleanup levels for both soil and

groundwater, which are inclusive of all other chemical-specific regulations, were utilized throughout this project.

As discussed above in Section 1.0 and as shown on Figure 2, the majority of the site is currently vacant and undeveloped. As documented in Section 5.0 of our 2020 Supplemental RI/Cleanup Action report (Robinson Noble, May 2020), no exclusionary criteria from performing a terrestrial ecological evaluation (TEE) listed under WAC 173-340-7491(1) apply to the site, and a site-specific TEE was completed as required by the criteria listed under WAC 173-340-7491(2). The site specific TEE is described in Section 5.3 and presented in Appendix I of our 2020 Supplemental RI/Cleanup Action report.

As documented in Section 1.2 of our 2013 RI report and Section 2.1 of our 2020 Supplemental RI/Cleanup Action report (Robinson Noble, July 2013; and Robinson Noble, May 2020), a large portion of the site (approximately the entire southern half) is designated by Thurston County as either wetlands or wetland buffer zones. As documented in Section 5.3.1 of our 2020 Supplemental RI Cleanup Action report, prior to conducting any remedial action involving excavation in wetlands or buffer zones, a Critical Area Review Permit (CARP) was obtained from Thurston County. A State Environmental Policy Act (SEPA) checklist was also completed and submitted to Thurston County, which is the lead agency for this project. Following their review of the SEPA checklist, Thurston County issued a determination of nonsignificance (DNS) for the planned remediation work. Copies of the CARP and SEPA-DNS are included in Appendix J of our 2020 Supplemental RI/Cleanup Action report.

As also documented in Section 5.3.1 of our 2020 Supplemental RI Cleanup Action report (Robinson Noble, May 2020), all cleanup action involving remedial excavation in the wetlands or wetland buffer zones at the site was conducted under the State of Washington's construction stormwater general permit (CSWGP). All of the requirements stipulated by Ecology for CSWGP coverage were strictly adhered to during the completion of the project. Copies of all the pertinent CSWGP documents, including the affidavit of publication, Ecology's CSWGP coverage letter, and the final notice of coverage termination, are included in Appendix J of our 2020 Supplemental RI/Cleanup Action report.

For remedial excavation, a hazardous waste operations and emergency response (HAZWOPER) certified contractor (OSHA Standard 29 CFR Part 1910.120) was utilized throughout the excavation process. As documented in Section 5.3.1 of our 2020 Supplemental RI Cleanup Action report (Robinson Noble, May 2020), all materials excavated from the site were transported by the excavation contractor to an appropriately permitted disposal facility. All materials excavated from the site were delivered by the excavation contractor to the Cowlitz County regional landfill located in Kelso, Washington. A copy of the disposal ticket is included in Appendix D.

2.5 Item 5; Property Specific NFA *(Justification)*

As shown on Figure 2 and as documented in Section 2.1 of our 2020 Supplemental RI Cleanup Action report (Robinson Noble, May 2020), the site is comprised of six contiguous tax parcels. These are identified by Thurston County Assessor records as parcel numbers 12723210000, 12723210100, 12723210400, 12723210401, 12723210700, and 12723220200.

Remedial investigations and cleanup actions completed to date have been focused on bringing the site to full regulatory compliance/closure as a single unit rather than as individual parcels (i.e. not through a property specific NFA). Our assessments of contamination levels to date have not found groundwater impacts or soil impacts that could not be remediated through simple excavation and removal. Therefore, there is no need to use institutional controls or an envi-

ronmental covenant to control existing impacts; there are no soil or groundwater impacts at the site above applicable MTCA Method A cleanup levels. Regulatory closure through the issuance of a standard NFA determination is appropriate and is the preferred approach at this time pending Ecology's review of this draft work plan.

3.0 Reporting

Upon completion of any additional remedial investigation, Robinson Noble will complete a final letter report summarizing our findings and submit it to Ecology on behalf of Havens Estate Investments, LLC for review and comment. The report will include a detailed discussion of all field activities with tables, maps, and diagrams as appropriate to document the completed work. The letter report will also include full copies of any laboratory reports as attachments and will provide a summary of the analytical results and other findings.

4.0 EIM Submission

Robinson Noble has submitted all of the analytical data generated to date to Ecology's Electronic Information Management (EIM) system. Any additional work completed for this project will also be uploaded to the EIM system as it is collected.

5.0 References

Robinson Noble, July 2013; *John's Auto Wrecking, 411 93rd Avenue Southeast, Olympia, Washington, Facility/Site No. 57665495, VCP Project No. SW1127, Remedial Investigation*

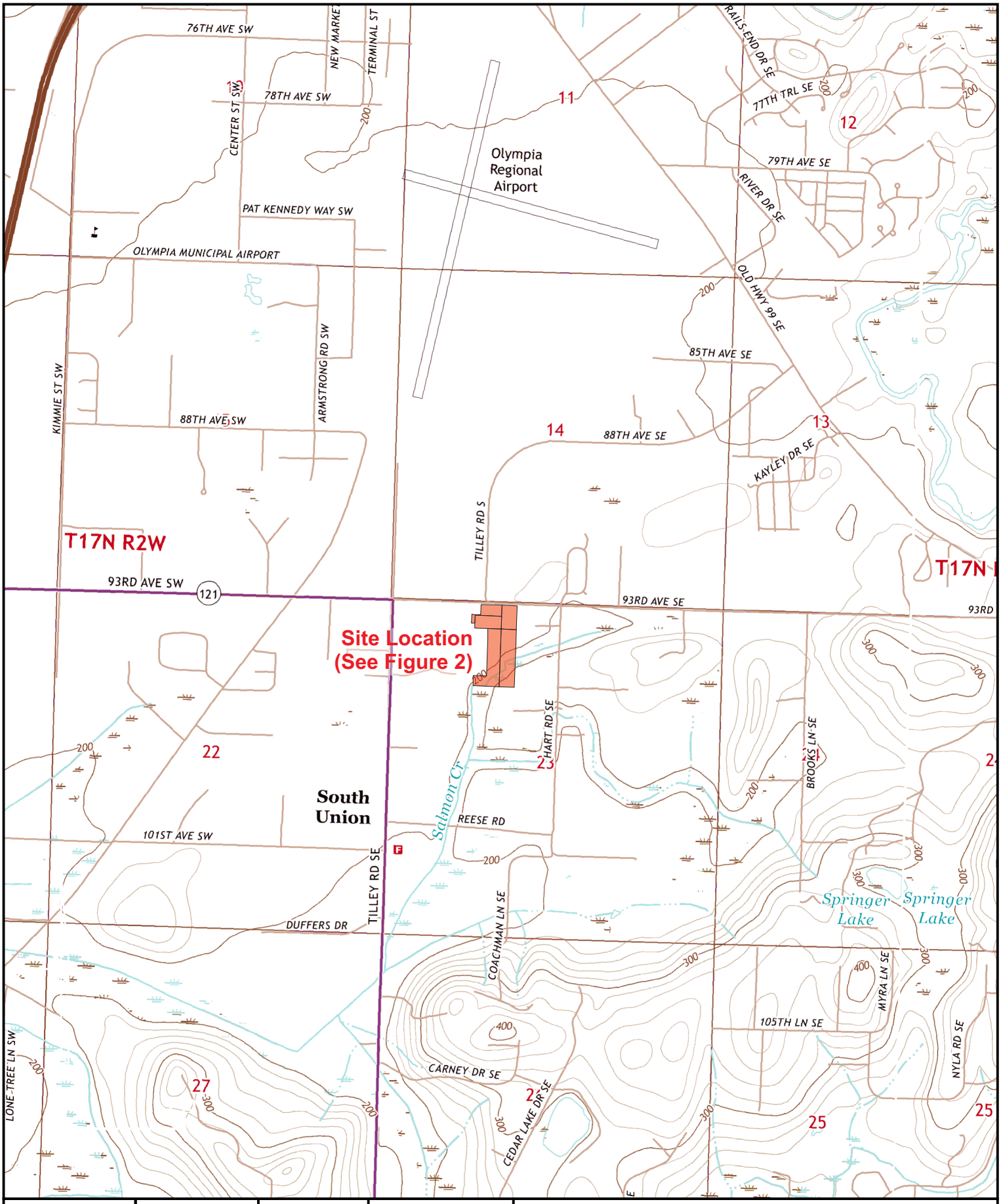
Robinson Noble, May 2020; *John's Auto Wrecking, 411 93rd Avenue Southeast, Olympia, Washington, Supplemental Remedial Investigation/Cleanup Action, VCP Project No. SW1613*

Washington State Department of Ecology, 2013, *Model Toxics Control Act statute and regulation*, compiled by the Washington State Department of Ecology Toxics Cleanup Program, Publication No. 94-06

Washington State Department of Ecology, Cleanup levels and risk calculations–database of cleanup levels for chemicals and respective media, available online at https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx

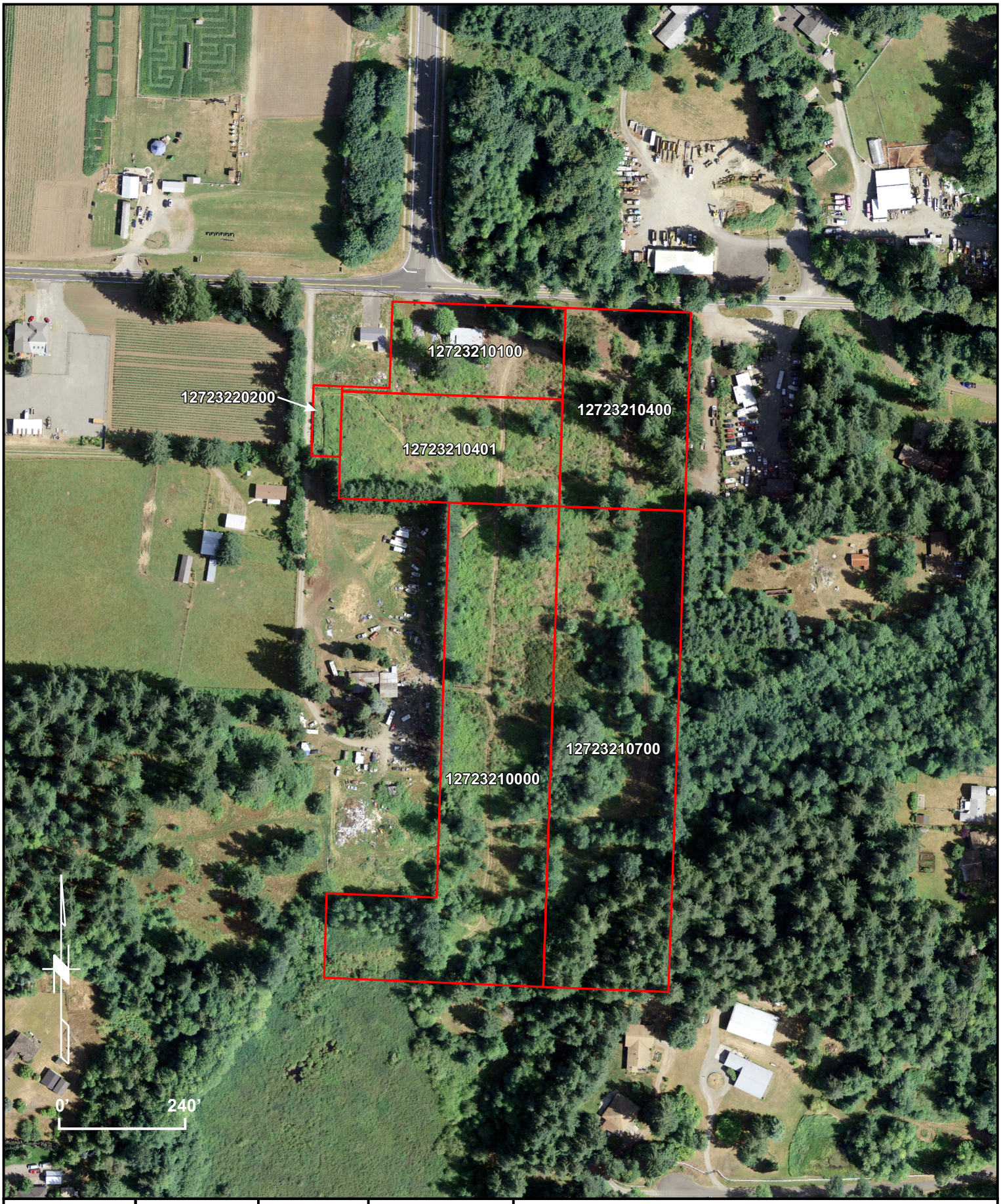
Washington State Department of Ecology, Opinion Letter on a cleanup at John's Auto Wrecking aka Havens Estate Investments, LLC, dated March 29, 2021

FIGURES



ROBINSON NOBLE	Note: Basemap taken from USGS Maytown Quadrangle	PM: MTW June 2021 2491-001G	Thurston County T 17 N/R 02 W - 23 Scale 1" = 2000'

Figure 1
Vicinity Map
John's Auto Wrecking, Supplemental RI Work Plan



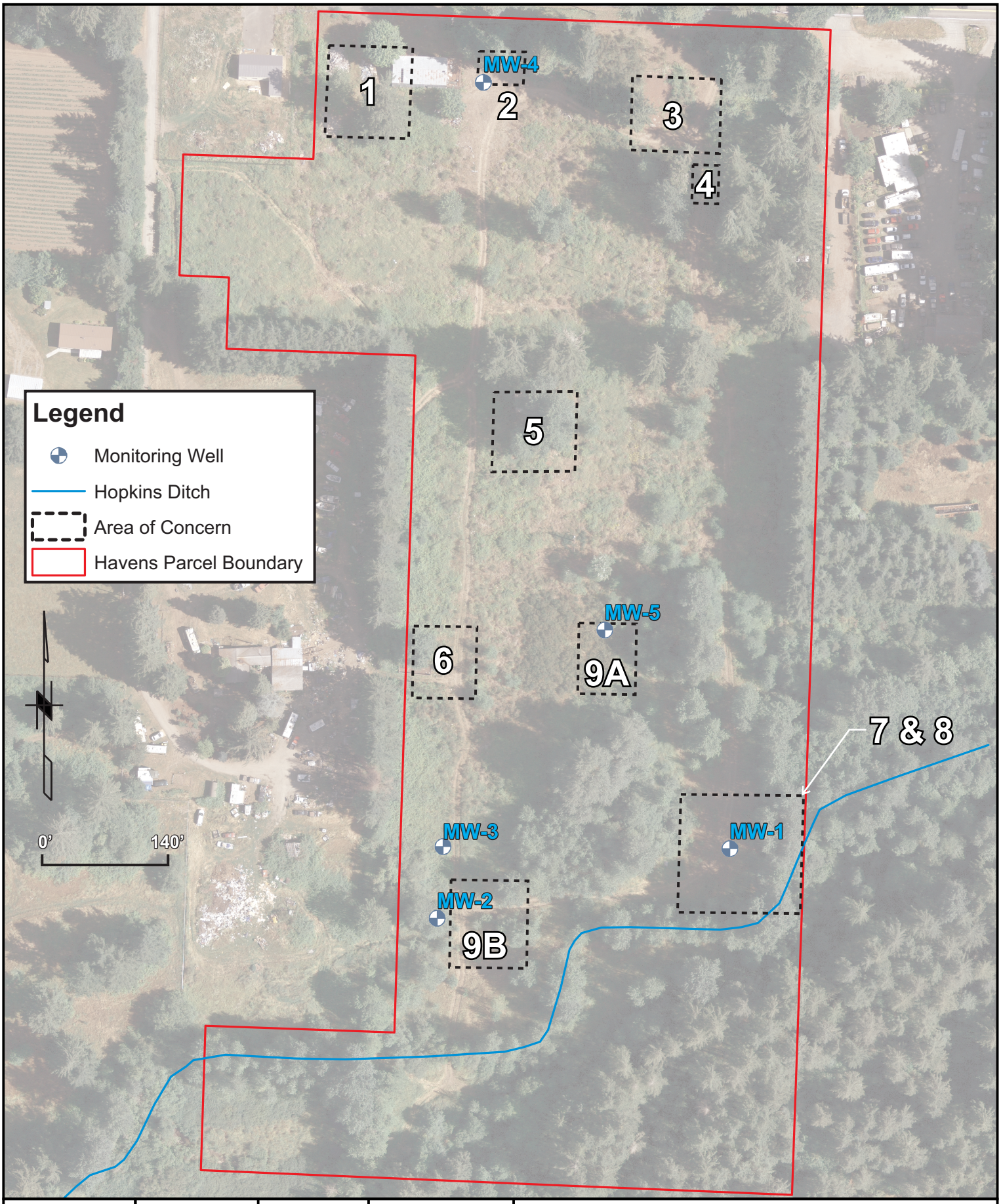
ROBINSON NOBLE

Note: Image from Thurston County GIS 2018 Aerials

PM: MTW
June 2021
2491-001G

Thurston County
T 17 N/R 02 W - 23
Scale 1" = 240'

Figure 2
Site Map
John's Auto Wrecking, Supplemental RI Work Plan



ROBINSON NOBLE

Note: Image from Thurston County GIS 2018 Aerials

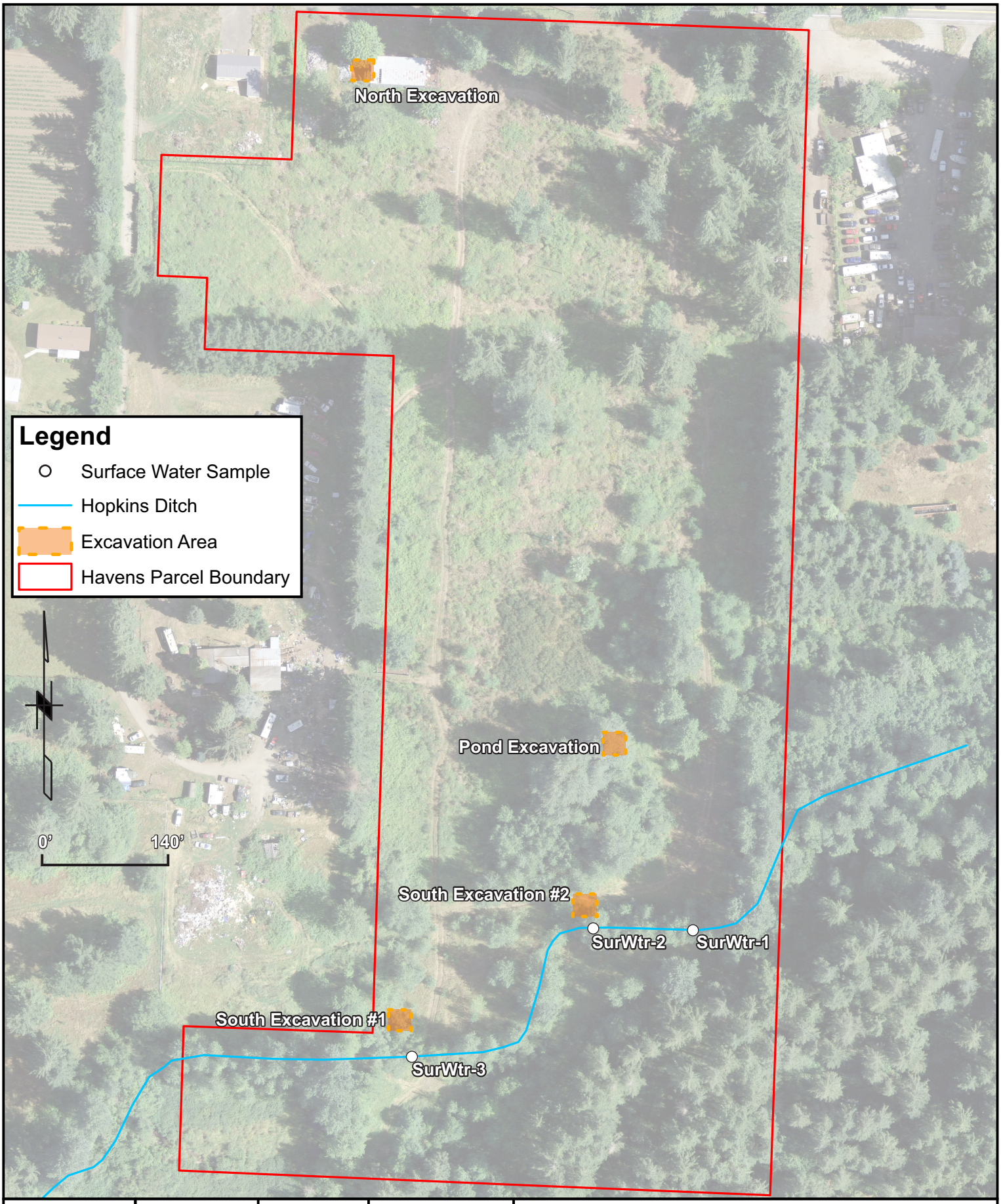
PM: MTW
June 2021
2491-001G

Thurston County
T 17 N/R 02 W - 23
Scale 1" = 140'

Figure 3

Monitoring Well and AOC Location Map

John's Auto Wrecking, Supplemental RI Work Plan



ROBINSON NOBLE

Note: Image from Thurston County GIS 2018 Aerials

PM: MTW
June 2021
2491-001G

Thurston County
T 17 N/R 02 W - 23
Scale 1" = 140'

Figure 4

Surface Water Sample Location Map

John's Auto Wrecking, Supplemental RI Work Plan

APPENDIX A

Ecology Documents

Electronic Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • 360-407-6300
Call 711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

March 29, 2021

Judith Wirth
Managing Member, Havens Estate Investments, LLC
5023 8th Ave NE
Seattle, WA 98105
judithwirth206@gmail.com

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),[1] chapter 70A.305 Revised Code of Washington (RCW).[2]

Issue Presented and Opinion

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[3] (collectively "substantive requirements of MTCA").

[1] https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html
[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305
[3] 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.[4] 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*[5] or WAC 173-340-720(9) have been met for each monitoring well location.[6]

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

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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[4] 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.

[5] Revised June 2016. https://apps.ecology.wa.gov/publications/SummaryPages/1009057.html

[6] 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[7] related to construction activity on Thurston County tax parcel 12723210101, with a street address of 401 Southeast 93rd 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

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.[8] Some site documents may be available on Ecology's Cleanup Site Search web page.[9]

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

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7 Ecology, Comments on SEPA 2019101360, April 19, 2019
8 https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
9 https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=2120

Analysis of the Cleanup

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 15th 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,[10] 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.

[10] 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,[11] 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.

[11] 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,[12] 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.

[12] 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[13]	Sample ID	Total cPAHs[14]
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		
Sample Mean of Three Greatest Concentrations			
	124.3		1.36
Standard Deviation			
	46.06		0.72
Kaplan-Meier 90/90 Upper Tolerance Limit on Mean of All Samples			
	96.4		1.13
Benthic Sediment Cleanup Objective			
	360		17
Benthic Cleanup Screening Level			
	>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.[14] The currently proposed lead cleanup level for the upland portion of the Site is 250 mg/kg, which is the MTCA

[13] Dry Weight in mg/kg.
[14] 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.[15]

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.[16]

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[15] 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

[16] 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 <u>Against</u> 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*[17] 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 <u>For</u> 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 93rd Street Southeast.[18] 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.[19]

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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[17] October 14, 2014
[18] https://www.ci.tumwater.wa.us/home/showpublisheddocument?id=3918
[19] 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.[20] 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.[21] 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.

[20] Ecology, Re: CSWGP for John's Auto Wrecking Site, June 18, 2018. Included in Enclosure D.
[21] 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[22] 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[23] 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).[24] 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

[22] WAC 173-340-900, Table 740-1
[23] WAC 173-340-900
[24] 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 [µg/L] vs. the 15 µg/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 µg/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.

AOC	Monitoring Well ID	Temporary Boring ID
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:[25]

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[26] 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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[25] See Areas of Concern and Current Investigation Figure, July 2013.
[26] 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[27] 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

[27] 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.[28] 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 constituent 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.[29] Plant growth is extensive across the Site; including areas were 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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[28] 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.

[29] 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).[30] There are no residual petroleum or volatile organic compounds at the Site at concentrations (e.g., exceeds the MTCA Method A cleanup level[31] 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.[32]

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[30] 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

[31] 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

[32] 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,[33] (b.) cleanup levels,[34] and (c.) applicable state and federal laws.[35] 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.[36]
Soil- Protection of Groundwater	Based on the protection of groundwater, the standard point of compliance is throughout the Site.[37]
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.[38]
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.[39]
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.[40]
Air Quality	Based on the protection of air quality, the point of compliance is indoor and ambient air throughout the Site.[41]
Sediment	Based on the protection of sediment quality, compliance with the requirements of 173-204 WAC.[42]

[33] WAC 173-340-200 "Point of Compliance."
[34] WAC 173-340-200 "Cleanup level."
[35] WAC 173-340-200 "Applicable state and federal laws," WAC 173-340-700(3)(c)
[36] WAC 173-340-740 (6)(d)
[37] WAC 173-340-747
[38] WAC 173-340-7490(4)(b)
[39] WAC 173-340-720(8)(b)
[40] WAC 173-340-730(6)
[41] WAC 173-340-750(6)
[42] 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[43]	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.

[43] 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[44] 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.[45]

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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[44] WAC 173-340-200, -706 and -745.

[45] 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 potion 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[46] (acute)
Lead	65[47] (chronic)
cPAHs	0.035[48]

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.[49] 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[50] 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.[51] The person conducting a cleanup action shall identify all applicable local, state, and federal laws.

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46 Clean Water Act value for acute risk to freshwater aquatic life.
47 Clean Water Act value for chronic risk to freshwater aquatic life.
48 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.
49 p. 12 in the Robinson-Noble's *Supplemental Remedial Investigation/Cleanup Action*, May 15, 2020
50 https://apps.oria.wa.gov/opas/index.asp
51 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.[52,53]

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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[52] WAC 173-340-710(2)

[53] 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.[54] 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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[54] 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,[55] 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:

Excavation	Location	Contaminant	Concentration (mg/kg)
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.

[55] 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,[56] or for any Site by following WAC 173-340-720(9).

[56] 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,[57] 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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[57] 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

1. Opinion Does Not Settle Liability with the State.

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

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

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

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

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

3. State is Immune from Liability.

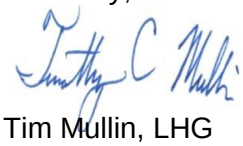
The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion.
See RCW 70A.305.170(6).

Contact Information

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

For more information about the VCP and the cleanup process, please visit our Voluntary Cleanup Program web site.[58] If you have any questions about this opinion, please contact me at (360) 407-6265 or tim.mullin@ecy.wa.gov.

Sincerely,



Tim Mullin, LHG
Toxics Cleanup Program
Southwest Regional Office

TCM/tam

Enclosures (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
Nicholas Acklam, Ecology, nicholas.acklam@ecy.wa.gov
Zachary Meyer, Ecology, zachary.meyer@ecy.wa.gov
Carol Serdar, Ecology, carol.serdar@ecy.wa.gov
Ecology Site File

[58] https://www.ecy.wa.gov/vcp

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Enclosure A

Site Description

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Site Description

The John's Auto Wrecking (Site) is located at 411 93rd 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).[59]

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.[60] 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."[61] 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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[59] Zoning current as of September 10, 2020.
[60] https://www.ci.tumwater.wa.us/home/showpublisheddocument?id=3918
[61] 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

Document List

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Basis for the Opinion – List of Documents.

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 93rd 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

Hopkins Ditch Photographs

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Enclosure D

Email Correspondence

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From:	Max Wills
To:	Mullin, Tim (ECY)
Cc:	JudithWirth206@gmail.com; Philip Grafious (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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Hi Tim,

Sorry the delay in responding; I had to do some digging and review (this project has be 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

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www.robinson-noble.com

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

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

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

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 geologist 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-ax 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.
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www.robinson-noble.com

From: Mullin, Tim (ECY) [mailto:TMUL461@ECY.WA.GOV]
Sent: Wednesday, October 14, 2020 4:41 PM
To: Judith Wirth <judithwirth206@gmail.com>; Max Wills <MWills@robinson-noble.com>; Philip Grafious <pgrafious@gmail.com>
Cc: Mullin, Tim (ECY) <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
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Olympia, WA 98504-7775
O: 360-407-6265
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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>
Sent: Wednesday, October 14, 2020 9:46 AM
To: Mullin, Tim (ECY) <TMUL461@ECY.WA.GOV>; Max Wills <MWills@robinson-noble.com>; Philip Grafious <pgrafious@gmail.com>
Subject: Re: wrecking yard

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> 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

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) 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

DEPARTMENT OF ECOLOGY
State of Washington

From: Koberstein, Marla (ECY)
Sent: Monday, June 18, 2018 9:11 AM
To: Max Wills <MWills@robinson-noble.com>; Serdar, Carol (ECY) <cser461@ECY.WA.GOV>
Cc: Mullin, Tim (ECY) <TMUL461@ECY.WA.GOV>; Meyer, Zachary (ECY) <ZMEY461@ECY.WA.GOV>; Moon, Amy (ECY) <amym461@ECY.WA.GOV>; Montague-Breakwell, Chris (ECY) <cmon461@ECY.WA.GOV>; Judith Wirth <judithwirth206@gmail.com>; Carpenter, Honor (ECY) <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

From: Max Wills [mailto:MWills@robinson-noble.com]
Sent: Friday, June 15, 2018 3:15 PM
To: Serdar, Carol (ECY) <cser461@ECY.WA.GOV>
Cc: Mullin, Tim (ECY) <TMUL461@ECY.WA.GOV>; Meyer, Zachary (ECY) <ZMEY461@ECY.WA.GOV>; Moon, Amy (ECY) <amym461@ECY.WA.GOV>; Montague-Breakwell, Chris (ECY) <cmon461@ECY.WA.GOV>; Judith Wirth <judithwirth206@gmail.com>; Koberstein, Marla (ECY) <mkob461@ECY.WA.GOV>; Carpenter, Honor (ECY) <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

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

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

Max Wills

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 by 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 fort 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

* 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

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.

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

Environmental Covenant Reference Information

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Environmental Covenant Reference Information

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.[62] 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 (µg/L) for groundwater, and microgram per meter cubed (µg/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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[62] 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 or (360) 407-6754 for direction on evaluating financial assurance requirements.[63] 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).[64]

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

[64] 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.

APPENDIX B

Stream Sample Photos

Site photographs for John's Auto Wrecking
Hopkins Ditch Surface Water Sampling Locations (April 28, 2021)

General area of SurWtr-1; photo looking east-northeast
(MW-1 is in the distance, Hopkins Ditch is out of the photo to the right of the cooler).

Looking south-southeast at Hopkins Ditch and SurWtr-1 sample location.

SurWtr-1 sample location.

General area of SurWtr-2; photo looking east
(MW-1 is in far distance near the center of the photo).

General area of SurWtr-2; photo looking southeast (the area of south excavation #2 is in the foreground of the photo, Hopkins Ditch is on the right of the photo).

SurWtr-2 sample location.

General area of SurWtr-3; photo looking northeast
(the area of south excavation #1 is in the lower left of the photo).

Hopkins Ditch and SurWtr-3 sample location; photo is looking west.

SurWtr-3 sample location.

APPENDIX C

Laboratory Reports

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 6, 2021

Max Wills
Robinson Noble
17625 130th Avenue NE, Suite 102
Woodinville, WA 98072

Dear Mr. Wills:

Please find enclosed the analytical data report for the Havens Project located in Olympia, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 4/28/21 Page: 1 of 1

Client: ROBINSON NOBLE
Address: 17625 130th AVE NE SUITE 102
City: WOODINVILLE State: WA Zip: 98072
Phone: (206) 550-7215 Fax:
Client Project # 2491-001G

Project Manager: MAX WILLS
Project Name: HAVENS
Location: OLYMPIA City, State: WA
Collector: MTW Date of Collection: 4/28/21
Email: MWILLS@ROBINSON-NOBLE.COM

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	DLS LEAD	Total LEAD	Field Notes
1 Sur Wtr-1	-	1400	Sur wtr	AMB/POLY										X			X	X	
2 Sur Wtr-2	-	1410	"	"										X			X	X	
3 Sur Wtr-3	-	1420	"	"										X			X	X	
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	4/28/21 1525	[signature]	4/28/21 1525
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:
STD TURN
EIM $

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

HAVENS PROJECT
Robinson Noble
Olympia, Washington
Libby Project # L210428-5
Client Project # 2491-001G

Analyses of Total Lead in Water by EPA 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)
Method Blank	4/30/2021	nd
Sur Wtr-1	4/30/2021	nd
Sur Wtr-1 Dup	4/30/2021	nd
Sur Wtr-2	4/30/2021	nd
Sur Wtr-3	4/30/2021	nd
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

QA/QC for Total Lead in Water by EPA 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)
LCS	4/30/2021	102%
Sur Wtr-1 MS	4/30/2021	87%
Sur Wtr-1 MSD	4/30/2021	96%
RPD	4/30/2021	10%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

HAVENS PROJECT
Robinson Noble
Olympia, Washington
Libby Project # L210428-5
Client Project # 2491-001G

Analyses of Dissolved Lead in Water by EPA 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)
Method Blank	4/30/2021	nd
Sur Wtr-1	4/30/2021	nd
Sur Wtr-1 Dup	4/30/2021	nd
Sur Wtr-2	4/30/2021	nd
Sur Wtr-3	4/30/2021	nd
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

QA/QC for Dissolved Lead in Water by EPA 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)
LCS	4/30/2021	87%
Sur Wtr-1 MS	4/30/2021	109%
Sur Wtr-1 MSD	4/30/2021	105%
RPD	4/30/2021	4%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

HAVENS PROJECT
Robinson Noble
Libby Project # L210428-5
Date Received 4/28/21 15:25

Received By PB

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	1.6 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	5.3 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☐ Yes	☐ No	☑ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Libby Environmental
Kodey Eley
3322 South Bay Road NE
Olympia, WA 98506

RE: Havens
Work Order Number: 2104407

May 04, 2021

Attention Kodey Eley:

Fremont Analytical, Inc. received 3 sample(s) on 4/29/2021 for the analyses presented in the following report.

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *05/06/2021*

CLIENT: Libby Environmental
Project: Havens
Work Order: 2104407

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2104407-001	Sur Wtr-1	04/28/2021 2:00 PM	04/29/2021 11:12 AM
2104407-002	Sur Wtr-2	04/28/2021 2:10 PM	04/29/2021 11:12 AM
2104407-003	Sur Wtr-3	04/28/2021 2:20 PM	04/29/2021 11:12 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Revision v1

Case Narrative

WO#: **2104407**
Date: **5/4/2021**

CLIENT: Libby Environmental
Project: Havens

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2104407**
Date Reported: **5/4/2021**

Client: Libby Environmental
Collection Date: 4/28/2021 2:00:00 PM
Project: Havens
Lab ID: 2104407-001
Matrix: Water
Client Sample ID: **Sur Wtr-1**

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 32154			Analyst: SB
Benz(a)anthracene	ND	0.0985	0.0315		µg/L	1	05/03/21 14:07:55
Chrysene	ND	0.0985	0.0312		µg/L	1	05/03/21 14:07:55
Benzo(b)fluoranthene	ND	0.0985	0.0269		µg/L	1	05/03/21 14:07:55
Benzo(k)fluoranthene	ND	0.0985	0.0310		µg/L	1	05/03/21 14:07:55
Benzo(a)pyrene	ND	0.0985	0.0325		µg/L	1	05/03/21 14:07:55
Indeno(1,2,3-cd)pyrene	ND	0.0985	0.0235		µg/L	1	05/03/21 14:07:55
Dibenz(a,h)anthracene	ND	0.0985	0.0266		µg/L	1	05/03/21 14:07:55
Surr: 2-Fluorobiphenyl	63.8	47.6 - 142	0		%Rec	1	05/03/21 14:07:55
Surr: Terphenyl-d14	77.7	15.9 - 137	0		%Rec	1	05/03/21 14:07:55

Client: Libby Environmental
Collection Date: 4/28/2021 2:10:00 PM
Project: Havens
Lab ID: 2104407-002
Matrix: Water
Client Sample ID: **Sur Wtr-2**

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 32154			Analyst: SB
Benz(a)anthracene	ND	0.0990	0.0316		µg/L	1	05/03/21 15:12:39
Chrysene	ND	0.0990	0.0313		µg/L	1	05/03/21 15:12:39
Benzo(b)fluoranthene	ND	0.0990	0.0271		µg/L	1	05/03/21 15:12:39
Benzo(k)fluoranthene	ND	0.0990	0.0311		µg/L	1	05/03/21 15:12:39
Benzo(a)pyrene	ND	0.0990	0.0327		µg/L	1	05/03/21 15:12:39
Indeno(1,2,3-cd)pyrene	ND	0.0990	0.0236		µg/L	1	05/03/21 15:12:39
Dibenz(a,h)anthracene	ND	0.0990	0.0268		µg/L	1	05/03/21 15:12:39
Surr: 2-Fluorobiphenyl	61.9	47.6 - 142	0		%Rec	1	05/03/21 15:12:39
Surr: Terphenyl-d14	77.0	15.9 - 137	0		%Rec	1	05/03/21 15:12:39

Analytical Report

Work Order: **2104407**
Date Reported: **5/4/2021**

Client: Libby Environmental
Collection Date: 4/28/2021 2:20:00 PM
Project: Havens
Lab ID: 2104407-003
Matrix: Water
Client Sample ID: **Sur Wtr-3**

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 32154			Analyst: SB
Benz(a)anthracene	ND	0.0991	0.0317		µg/L	1	05/03/21 15:34:12
Chrysene	ND	0.0991	0.0314		µg/L	1	05/03/21 15:34:12
Benzo(b)fluoranthene	ND	0.0991	0.0271		µg/L	1	05/03/21 15:34:12
Benzo(k)fluoranthene	ND	0.0991	0.0312		µg/L	1	05/03/21 15:34:12
Benzo(a)pyrene	ND	0.0991	0.0327		µg/L	1	05/03/21 15:34:12
Indeno(1,2,3-cd)pyrene	ND	0.0991	0.0237		µg/L	1	05/03/21 15:34:12
Dibenz(a,h)anthracene	ND	0.0991	0.0268		µg/L	1	05/03/21 15:34:12
Surr: 2-Fluorobiphenyl	66.8	47.6 - 142	0		%Rec	1	05/03/21 15:34:12
Surr: Terphenyl-d14	69.9	15.9 - 137	0		%Rec	1	05/03/21 15:34:12

Work Order: 2104407
CLIENT: Libby Environmental
Project: Havens

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-32154**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **4/30/2021**	RunNo: **66957**
Client ID: **MBLKW**	Batch ID: **32154**		Analysis Date: **5/3/2021**	SeqNo: **1348606**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	0.0991									
Chrysene	ND	0.0991									
Benzo(b)fluoranthene	ND	0.0991									
Benzo(k)fluoranthene	ND	0.0991									
Benzo(a)pyrene	ND	0.0991									
Indeno(1,2,3-cd)pyrene	ND	0.0991									
Dibenz(a,h)anthracene	ND	0.0991									
Surr: 2-Fluorobiphenyl	1.47		1.982		74.2	47.6	142				
Surr: Terphenyl-d14	1.88		1.982		94.7	15.9	137				

Sample ID: **LCS-32154**	SampType: **LCS**	Units: **µg/L**	Prep Date: **4/30/2021**	RunNo: **66957**
Client ID: **LCSW**	Batch ID: **32154**		Analysis Date: **5/3/2021**	SeqNo: **1348607**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	3.25	0.0987	3.949	0	82.4	37.6	130				
Chrysene	2.89	0.0987	3.949	0	73.2	36.3	112				
Benzo(b)fluoranthene	3.16	0.0987	3.949	0	80.1	26.7	120				
Benzo(k)fluoranthene	2.78	0.0987	3.949	0	70.4	16.4	121				
Benzo(a)pyrene	3.13	0.0987	3.949	0	79.2	20.1	127				
Indeno(1,2,3-cd)pyrene	2.99	0.0987	3.949	0	75.8	14.6	106				
Dibenz(a,h)anthracene	3.09	0.0987	3.949	0	78.1	12.5	106				
Surr: 2-Fluorobiphenyl	1.35		1.974		68.5	47.6	142				
Surr: Terphenyl-d14	1.77		1.974		89.8	15.9	137				

Sample ID: **2104407-001AMS**	SampType: **MS**	Units: **µg/L**	Prep Date: **4/30/2021**	RunNo: **66957**
Client ID: **Sur Wtr-1**	Batch ID: **32154**		Analysis Date: **5/3/2021**	SeqNo: **1348929**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	2.95	0.107	4.292	0	68.7	28.5	109				

Work Order: 2104407
CLIENT: Libby Environmental
Project: Havens

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2104407-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **4/30/2021** RunNo: **66957**
Client ID: **Sur Wtr-1** Batch ID: **32154** Analysis Date: **5/3/2021** SeqNo: **1348929**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chrysene	2.68	0.107	4.292	0	62.5	25.8	96.9				
Benzo(b)fluoranthene	2.35	0.107	4.292	0	54.8	10.3	99.5				
Benzo(k)fluoranthene	2.27	0.107	4.292	0	52.9	6.1	98.9				
Benzo(a)pyrene	2.54	0.107	4.292	0	59.2	6.94	99.7				
Indeno(1,2,3-cd)pyrene	2.04	0.107	4.292	0	47.4	2.48	78.2				
Dibenz(a,h)anthracene	2.04	0.107	4.292	0	47.4	5	75				
Surr: 2-Fluorobiphenyl	1.04		2.146		48.7	47.6	142				
Surr: Terphenyl-d14	1.59		2.146		74.0	15.9	137				

Sample Log-In Check List

Client Name:	**LIBBY**	Work Order Number:	**2104407**
Logged by:	**Gabrielle Coeuille**	Date Received:	**4/29/2021 11:12:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☐	No	☑	NA ☐
		No cooler present				
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No	☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	6.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Chain of Custody Record

www.LibbyEnvironmental.com

2104407

Date: 4.28.21 Page: 1 of 1

Client: Libby Environmental, Inc.
Address: See Above
City: State: Zip:
Phone: Fax:
Client Project # L210423-S

Project Manager: Kaley Eley
Project Name: Havens
Location: City, State: Olympia, WA
Collector: MTW Date of Collection: 4.28.21
Email: libbyenv@gmail.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270			Field Notes
1 Sur wtr-1	-	1400	water	Amber										X					
2 Sur wtr-2	-	1410	"	"										X					
3 Sur wtr-3	-	1420	"	"										X					
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
	4.28.21 1545	UPS	
Relinquished by: UPS	Date / Time	Received by:	Date / Time
			4/29/21 1142
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks: 5 Day TAT

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - Originator

APPENDIX D

Disposal Tickets

Account #	Date
7384	8/31/19

Cowlitz County Public Works
1600 - 13th Avenue South
Kelso, WA 98626
TEL (360) 577-3035
www.co.cowlitz.wa.us/publicworks/

Billing Address

LANGSETH ENVIRONMENTAL SERVICE
Tom Langseth
7517 Portland Avenue
Tacoma, WA 98404

Tran #	Date	Site	Truck	PO	Description
542992	08-19-19	LF	10 HARLC		PCS - 8 : 11.52 TN
543000	08-19-19	LF	3 HARLO\		PCS - 8 : 13.23 TN
543029	08-19-19	LF	10 HARLC		PCS - 8 : 14.51 TN
543035	08-19-19	LF	3 HARLO\		PCS - 8 : 3.25 TN

Note

Total Tons
42.51

WASTE ACCEPTANCE APPLICATION
CONTAMINATED SOILS, DREDGE SPOILS, AND DEBRIS
COWLITZ COUNTY HEADQUARTERS LANDFILL

(Complete and application for each waste)

Customer: Langseth Environmental
Address: 7517 Portland Ave. E.
City/State/Zip: Tacoma, WA 98404
Contact: Tom Langseth, 253-536-6961, langsethenviro@gmail.com

Customer #: 7384
Material #: 5407

Delivery To: Direct to Landfill

General Information for waste disposal:

1) Project Address: Johns Auto Wrecking, Tumwater WA
2) Charge Account Number:
3) Estimated quantity (tons or cubic yards): est. 30-50 tons
4) Estimated start date: August 2019
5) Source Type "1" thru "4" (see Acceptance Process): 1
6) Waste current location: Same as project
7) Waste original location: Same as project
8) Please give a detailed description of activities which occurred on or near soils original location which may have impacted the soils: **Soil contamination for former auto wrecking yard.**

9) Analytical Testing:

Waste Oils and Unknown Oils:

- Analyze waste by NWTPH-Gx & NWTPH-Dx to identify contaminants. Additional testing may be required based on these results.

Gasoline Range Organics (C6 – C12):

- Analyze waste by NWTPH-Gx.
- Analyze waste for BTEX compounds with EPA Method 8021 or 8260.
- If TPH > 5000 ppm, analyze waste for TCLP metals.
- If TPH > 5000 ppm, analyze waste by EPA Method 8260 and 8270.

Diesel Range Organics (C12 – C24):

- Analyze waste by NWTPH-Dx.
- If TPH > 5000 ppm, analyze waste for TCLP metals.
- If TPH > 5000 ppm, analyze waste by EPA Method 8260 and 8270.

Heavy Oil Organics (>C24):

- Analyze waste for heavy fuel by NWTPH-Dx.
- Analyze waste for PCB's by EPA Method 8082 when there is a potential for PCB's to be present.
- If TPH > 5000 ppm, analyze waste for TCLP metals.
- If TPH > 5000 ppm, analyze waste by EPA Method 8260 and 8270.

7-18-19

10) List of possible additional analysis. Selected items depend on the potential contaminants, available analytical, and generator knowledge of process and/or history:

X a. Waste samples were collected in accordance with WAC 173-303-110(2).

X b. Lab analytical procedures complied with WAC 173-303-110(3).

☐ c. Waste has been analyzed and is non-corrosive per WAC 173-303-090(6)(a)(iii) [pH].

X d. Waste has been analyzed and is non-toxic per WAC 173-303-090(8) [TCLP analysis]:

Indicate the target characteristics: X RCRA Metals
☐ F-List Organics
☐ Acid/Base neutrals
☐ Pesticides and Herbicides

☐ e. Waste has been analyzed and is non-toxic per WAC 173-303-101(5) [Fish Bioassay].

X f. Waste has been analyzed and is non-persistent per WAC 173-303-102 [PAH only].

☐ g. Waste has been analyzed for PCB's per EPA Method 8082.

☐ h. Waste has been analyzed for diesel and/or heavy oil range organics per NWTPH-Dx.

☐ i. Waste has been analyzed for gasoline range organics per NWTPH-Gx.

☐ j. Waste has been analyzed for BTEX per EPA Method 8021 or 8260.

☐ k. Chain of custody and lab analytical data for required analyses is attached.

☐ l. Other:

11) Customer certifies that:

a) The waste sampled and intended for disposal under this certification is neither dangerous nor extremely hazardous waste as determined by WAC 173-303.

b) The waste has no free liquids per EPA Publication SW-846.

c) To the best of your knowledge, there have been no alterations to the waste that would affect the accuracy of the analyses performed above.

d) There have been no material changes in the character of the waste after the analyses were performed which would render those results inaccurate.

e) The samples analyzed are representative of the waste to be tendered to the Cowlitz County Headquarters Landfill for disposal.

Signature of Authorized Agent

3-18-19
Date

Tom Langseth / Langseth Environmental
Printed Name and Title of Authorized Agent

NOTES:

APPENDIX B

Analytical Reports and Field Data Sheet

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Robinson Noble
Max Wills
17625 130th Ave NE, Suite 102
Woodinville, WA 98072

RE: Havens
Work Order Number: 2109185

September 20, 2021

Attention Max Wills:

Fremont Analytical, Inc. received 1 sample(s) on 9/13/2021 for the analyses presented in the following report.

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *09/20/2021*

CLIENT: Robinson Noble
Project: Havens
Work Order: 2109185

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2109185-001	PS4-0.5	09/12/2021 9:00 AM	09/13/2021 3:51 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2109185**
Date: **9/20/2021**

CLIENT: Robinson Noble
Project: Havens

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2109185**
Date Reported: **9/20/2021**

Client: Robinson Noble
Collection Date: 9/12/2021 9:00:00 AM
Project: Havens
Lab ID: 2109185-001
Matrix: Soil
Client Sample ID: **PS4-0.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 33690		Analyst: SB
Naphthalene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
2-Methylnaphthalene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
1-Methylnaphthalene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Acenaphthylene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Acenaphthene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Fluorene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Phenanthrene	ND	53.4		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Anthracene	ND	53.4		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Fluoranthene	ND	53.4		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Pyrene	ND	53.4		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Benz(a)anthracene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Chrysene	ND	53.4		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Benzo(b)fluoranthene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Benzo(k)fluoranthene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Benzo(a)pyrene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Indeno(1,2,3-cd)pyrene	ND	53.4		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Dibenz(a,h)anthracene	ND	53.4		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Benzo(g,h,i)perylene	ND	26.7		µg/Kg-dry	1	9/14/2021 7:00:18 PM
Surr: 2-Fluorobiphenyl	48.9	27.9 - 129		%Rec	1	9/14/2021 7:00:18 PM
Surr: Terphenyl-d14 (surr)	62.5	39.1 - 145		%Rec	1	9/14/2021 7:00:18 PM
Sample Moisture (Percent Moisture)				Batch ID: R69950		Analyst: ALB
Percent Moisture	28.2	0.500		wt%	1	9/16/2021 9:29:56 AM

Work Order: 2109185
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-33690** SampType: **MBLK** Units: **µg/Kg** Prep Date: **9/14/2021** RunNo: **69920**
Client ID: **MBLKS** Batch ID: **33690** Analysis Date: **9/14/2021** SeqNo: **1417667**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	20.0									
2-Methylnaphthalene	ND	20.0									
1-Methylnaphthalene	ND	20.0									
Acenaphthylene	ND	20.0									
Acenaphthene	ND	20.0									
Fluorene	ND	20.0									
Phenanthrene	ND	40.0									
Anthracene	ND	40.0									
Fluoranthene	ND	40.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	20.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	20.0									
Benzo(k)fluoranthene	ND	20.0									
Benzo(a)pyrene	ND	20.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Benzo(g,h,i)perylene	ND	20.0									
Surr: 2-Fluorobiphenyl	711		1,000		71.1	27.9	129				
Surr: Terphenyl-d14 (surr)	895		1,000		89.5	39.1	145				

Sample ID: **LCS-33690** SampType: **LCS** Units: **µg/Kg** Prep Date: **9/14/2021** RunNo: **69920**
Client ID: **LCSS** Batch ID: **33690** Analysis Date: **9/14/2021** SeqNo: **1417668**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,740	20.0	2,000	0	87.0	61	110				
2-Methylnaphthalene	1,640	20.0	2,000	0	81.8	60	115				
1-Methylnaphthalene	1,700	20.0	2,000	0	85.0	63	112				
Acenaphthylene	1,710	20.0	2,000	0	85.5	57.4	113				
Acenaphthene	1,650	20.0	2,000	0	82.7	58.7	108				

Work Order: 2109185
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-33690** SampType: **LCS** Units: **µg/Kg** Prep Date: **9/14/2021** RunNo: **69920**
Client ID: **LCSS** Batch ID: **33690** Analysis Date: **9/14/2021** SeqNo: **1417668**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluorene	1,760	20.0	2,000	0	88.2	63	110				
Phenanthrene	1,680	40.0	2,000	0	84.1	60.3	111				
Anthracene	1,700	40.0	2,000	0	85.2	60.4	110				
Fluoranthene	1,720	40.0	2,000	0	86.1	62.3	115				
Pyrene	1,650	40.0	2,000	0	82.3	59.7	115				
Benz(a)anthracene	1,760	20.0	2,000	0	88.2	64.4	113				
Chrysene	1,670	40.0	2,000	0	83.4	57.3	113				
Benzo(b)fluoranthene	1,670	20.0	2,000	0	83.3	58.2	115				
Benzo(k)fluoranthene	1,780	20.0	2,000	0	89.1	53.4	121				
Benzo(a)pyrene	1,820	20.0	2,000	0	90.9	64.7	125				
Indeno(1,2,3-cd)pyrene	1,550	40.0	2,000	0	77.4	61.6	113				
Dibenz(a,h)anthracene	1,630	40.0	2,000	0	81.6	62.1	116				
Benzo(g,h,i)perylene	1,520	20.0	2,000	0	76.0	55.4	111				
Surr: 2-Fluorobiphenyl	707		1,000		70.7	27.9	129				
Surr: Terphenyl-d14 (surr)	850		1,000		85.0	39.1	145				

Sample ID: **2109181-006AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **9/14/2021** RunNo: **69920**
Client ID: **BATCH** Batch ID: **33690** Analysis Date: **9/14/2021** SeqNo: **1417670**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,300	19.4	1,945	0	66.7	35.2	107				
2-Methylnaphthalene	1,370	19.4	1,945	0	70.6	43.9	106				
1-Methylnaphthalene	1,340	19.4	1,945	0	68.7	46.4	105				
Acenaphthylene	1,330	19.4	1,945	0	68.2	42.7	104				
Acenaphthene	1,250	19.4	1,945	0	64.0	43.7	102				
Fluorene	1,340	19.4	1,945	0	68.7	46.8	106				
Phenanthrene	1,270	38.9	1,945	0	65.5	43.8	109				
Anthracene	1,280	38.9	1,945	0	65.8	45.2	107				
Fluoranthene	1,290	38.9	1,945	0	66.3	44.9	111				
Pyrene	1,240	38.9	1,945	0	63.8	41.8	109				

Work Order: 2109185
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2109181-006AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **9/14/2021** RunNo: **69920**
Client ID: **BATCH** Batch ID: **33690** Analysis Date: **9/14/2021** SeqNo: **1417670**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,360	19.4	1,945	0	69.9	45	110				
Chrysene	1,270	38.9	1,945	0	65.2	42.4	106				
Benzo(b)fluoranthene	1,310	19.4	1,945	0	67.5	43.7	108				
Benzo(k)fluoranthene	1,250	19.4	1,945	0	64.1	39.5	113				
Benzo(a)pyrene	1,350	19.4	1,945	0	69.3	44.1	122				
Indeno(1,2,3-cd)pyrene	1,090	38.9	1,945	0	55.8	40.2	109				
Dibenz(a,h)anthracene	1,160	38.9	1,945	0	59.5	31.4	126				
Benzo(g,h,i)perylene	1,040	19.4	1,945	5.844	53.2	28.8	108				
Surr: 2-Fluorobiphenyl	517		972.3		53.2	27.9	129				
Surr: Terphenyl-d14 (surr)	622		972.3		64.0	39.1	145				

Sample ID: **2109181-006AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **9/14/2021** RunNo: **69920**
Client ID: **BATCH** Batch ID: **33690** Analysis Date: **9/14/2021** SeqNo: **1417671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,370	19.4	1,945	0	70.6	35.2	107	1,297	5.63	30	
2-Methylnaphthalene	1,310	19.4	1,945	0	67.3	43.9	106	1,374	4.85	30	
1-Methylnaphthalene	1,360	19.4	1,945	0	70.1	46.4	105	1,336	2.08	30	
Acenaphthylene	1,370	19.4	1,945	0	70.6	42.7	104	1,325	3.50	30	
Acenaphthene	1,320	19.4	1,945	0	67.8	43.7	102	1,245	5.65	30	
Fluorene	1,400	19.4	1,945	0	72.2	46.8	106	1,336	4.98	30	
Phenanthrene	1,310	38.9	1,945	0	67.2	43.8	109	1,273	2.68	30	
Anthracene	1,320	38.9	1,945	0	67.8	45.2	107	1,279	3.04	30	
Fluoranthene	1,350	38.9	1,945	0	69.5	44.9	111	1,290	4.68	30	
Pyrene	1,300	38.9	1,945	0	66.8	41.8	109	1,240	4.65	30	
Benz(a)anthracene	1,410	19.4	1,945	0	72.4	45	110	1,359	3.56	30	
Chrysene	1,310	38.9	1,945	0	67.3	42.4	106	1,268	3.14	30	
Benzo(b)fluoranthene	1,300	19.4	1,945	0	66.6	43.7	108	1,313	1.37	30	
Benzo(k)fluoranthene	1,380	19.4	1,945	0	71.2	39.5	113	1,247	10.5	30	
Benzo(a)pyrene	1,380	19.4	1,945	0	71.1	44.1	122	1,347	2.52	30	

Work Order: 2109185
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2109181-006AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **9/14/2021** RunNo: **69920**
Client ID: **BATCH** Batch ID: **33690** Analysis Date: **9/14/2021** SeqNo: **1417671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	1,030	38.9	1,945	0	53.1	40.2	109	1,086	5.03	30	
Dibenz(a,h)anthracene	1,120	38.9	1,945	0	57.6	31.4	126	1,157	3.15	30	
Benzo(g,h,i)perylene	983	19.4	1,945	5.844	50.3	28.8	108	1,040	5.62	30	
Surr: 2-Fluorobiphenyl	567		972.3		58.3	27.9	129		0		
Surr: Terphenyl-d14 (surr)	659		972.3		67.8	39.1	145		0		

Sample Log-In Check List

Client Name:	**NOBLE**	Work Order Number:	**2109185**
Logged by:	**Gabrielle Coeuille**	Date Received:	**9/13/2021 3:51:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☑	No ☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
		Unknown prior to receipt		
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 9/13/2021 Page: 1 of: 1

Laboratory Project No (internal): 2109185

Project Name: Havens

Special Remarks: Need EIM

Client: Robinson Noble

Project No: 2491-001G

Address: 17625 130th Ave NE, Suite 102

Collected by: Max Wills

City, State, Zip: Woodinville, WA 98072

Location: Havens

Telephone: (206) 550-7215

Report To (PM): Max Wills

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mwills@robinson-noble.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Comments
1	PS4-0.5	9/12/21	9:00	S	1						X							
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x [signature]	Max Wills	9/13/21 14:30	x [signature]	Justine Mantz	9/13 15:51
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Robinson Noble
Max Wills
17625 130th Ave NE, Suite 102
Woodinville, WA 98072

RE: Havens
Work Order Number: 2109186

September 20, 2021

Attention Max Wills:

Fremont Analytical, Inc. received 2 sample(s) on 9/13/2021 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8
Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *09/20/2021*

CLIENT: Robinson Noble
Project: Havens
Work Order: 2109186

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2109186-001	MW5-2	09/12/2021 10:20 AM	09/13/2021 3:51 PM
2109186-002	MW5-3	09/12/2021 10:40 AM	09/13/2021 3:51 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2109186**
Date: **9/20/2021**

CLIENT: Robinson Noble
Project: Havens

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2109186**
Date Reported: **9/20/2021**

CLIENT: Robinson Noble
Project: Havens

Lab ID: 2109186-001 **Collection Date:** 9/12/2021 10:20:00 AM
Client Sample ID: **MW5-2** **Matrix:** Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 33686		Analyst: EH
Lead	ND	0.500		µg/L	1	9/14/2021 9:14:57 PM
Total Metals by EPA Method 200.8				Batch ID: 33684		Analyst: EH
Lead	ND	0.500		µg/L	1	9/14/2021 7:29:04 PM

Lab ID: 2109186-002 **Collection Date:** 9/12/2021 10:40:00 AM
Client Sample ID: **MW5-3** **Matrix:** Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 33686		Analyst: EH
Lead	ND	0.500		µg/L	1	9/14/2021 9:20:31 PM
Total Metals by EPA Method 200.8				Batch ID: 33684		Analyst: EH
Lead	ND	0.500		µg/L	1	9/14/2021 7:45:48 PM

Work Order: 2109186
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-33685FB**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **9/14/2021**		RunNo: **69913**		
Client ID: **MBLKW**	Batch ID: **33686**					Analysis Date: **9/14/2021**		SeqNo: **1417507**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500									

Sample ID: **MB-33686**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **9/14/2021**		RunNo: **69913**		
Client ID: **MBLKW**	Batch ID: **33686**					Analysis Date: **9/14/2021**		SeqNo: **1417508**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500									

Sample ID: **LCS-33686**	SampType: **LCS**			Units: **µg/L**		Prep Date: **9/14/2021**		RunNo: **69913**		
Client ID: **LCSW**	Batch ID: **33686**					Analysis Date: **9/14/2021**		SeqNo: **1417509**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50.2	0.500	50.00	0	100	85	115				

Sample ID: **2109111-003DDUP**	SampType: **DUP**			Units: **µg/L**		Prep Date: **9/14/2021**		RunNo: **69913**		
Client ID: **BATCH**	Batch ID: **33686**					Analysis Date: **9/14/2021**		SeqNo: **1417513**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500						0		30	

Sample ID: **2109111-003DMS**	SampType: **MS**			Units: **µg/L**		Prep Date: **9/14/2021**		RunNo: **69913**		
Client ID: **BATCH**	Batch ID: **33686**					Analysis Date: **9/14/2021**		SeqNo: **1417514**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	242	0.500	250.0	0	97.0	70	130				

Work Order: 2109186
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2109111-003DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **9/14/2021** RunNo: **69913**
Client ID: **BATCH** Batch ID: **33686** Analysis Date: **9/14/2021** SeqNo: **1417515**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	257	0.500	250.0	0	103	70	130	242.4	5.97	30	

Work Order: 2109186
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: **MB-33684**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **MBLKW**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417557**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500									

Sample ID: **LCS-33684**	SampType: **LCS**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **LCSW**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417558**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	54.3	0.500	50.00	0	109	85	115				

Sample ID: **2109174-001ADUP**	SampType: **DUP**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **BATCH**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417560**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500						0		30	

Sample ID: **2109174-001AMS**	SampType: **MS**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **BATCH**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417561**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	270	0.500	250.0	0.3005	108	70	130				

Sample ID: **2109174-001AMSD**	SampType: **MSD**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **BATCH**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417562**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	263	0.500	250.0	0.3005	105	70	130	269.8	2.70	30	

Sample Log-In Check List

Client Name:	**NOBLE**	Work Order Number:	**2109186**
Logged by:	**Gabrielle Coeuille**	Date Received:	**9/13/2021 3:51:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2.	How was the sample delivered?	Client			

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐	
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☑	No ☐	Not Present ☐	
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐	
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐	
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐		
10.	Are samples properly preserved?	Yes ☑	No ☐		
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐	
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑	
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐		
14.	Does paperwork match bottle labels?	Yes ☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐		
16.	Is it clear what analyses were requested?	Yes ☑	No ☐		
17.	Were all holding times able to be met?	Yes ☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑	

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 9/13/2021 Page: 1 of: 1

Laboratory Project No (internal): 2109186

Project Name: Havens

Special Remarks: Need EIM

Project No: 2491-001G

Client: Robinson Noble

Collected by: Max Wills

Address: 17625 130th Ave NE, Suite 102

Location: Havens

City, State, Zip: Woodinville, WA 98072

Report To (PM): Max Wills

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Telephone: (206) 550-7215

PM Email: mwills@robinson-noble.com

Fax:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	DISSOLVED LEAD	TOTAL LEAD			Comments
1 MW5-2	9/12/21	10:20	GW	2												X	X				
2 MW5-3	9/12/2	10:40	GW	2												X	X				
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x	Max Wills	9/13/21 14:30	x	Justine Manta	9/13 15:51
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Robinson Noble
Max Wills
17625 130th Ave NE, Suite 102
Woodinville, WA 98072

RE: Havens
Work Order Number: 2109187

September 20, 2021

Attention Max Wills:

Fremont Analytical, Inc. received 1 sample(s) on 9/13/2021 for the analyses presented in the following report.

Dissolved Metals by EPA Method 200.8
Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *09/20/2021*

CLIENT: Robinson Noble
Project: Havens
Work Order: 2109187

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2109187-001	MW5-1	09/12/2021 10:00 AM	09/13/2021 3:51 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2109187**
Date: **9/20/2021**

CLIENT: Robinson Noble
Project: Havens

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2109187**
Date Reported: **9/20/2021**

Client: Robinson Noble
Collection Date: 9/12/2021 10:00:00 AM
Project: Havens
Lab ID: 2109187-001
Matrix: Groundwater
Client Sample ID: **MW5-1**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 33686		Analyst: EH
Lead	ND	0.500		µg/L	1	9/14/2021 9:26:05 PM
Total Metals by EPA Method 200.8				Batch ID: 33684		Analyst: EH
Lead	ND	0.500		µg/L	1	9/14/2021 7:51:23 PM

Work Order: 2109187
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-33685FB**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **9/14/2021**	RunNo: **69913**
Client ID: **MBLKW**	Batch ID: **33686**		Analysis Date: **9/14/2021**	SeqNo: **1417507**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500									

Sample ID: **MB-33686**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **9/14/2021**	RunNo: **69913**
Client ID: **MBLKW**	Batch ID: **33686**		Analysis Date: **9/14/2021**	SeqNo: **1417508**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500									

Sample ID: **LCS-33686**	SampType: **LCS**	Units: **µg/L**	Prep Date: **9/14/2021**	RunNo: **69913**
Client ID: **LCSW**	Batch ID: **33686**		Analysis Date: **9/14/2021**	SeqNo: **1417509**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50.2	0.500	50.00	0	100	85	115				

Sample ID: **2109111-003DDUP**	SampType: **DUP**	Units: **µg/L**	Prep Date: **9/14/2021**	RunNo: **69913**
Client ID: **BATCH**	Batch ID: **33686**		Analysis Date: **9/14/2021**	SeqNo: **1417513**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500						0		30	

Sample ID: **2109111-003DMS**	SampType: **MS**	Units: **µg/L**	Prep Date: **9/14/2021**	RunNo: **69913**
Client ID: **BATCH**	Batch ID: **33686**		Analysis Date: **9/14/2021**	SeqNo: **1417514**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	242	0.500	250.0	0	97.0	70	130				

Work Order: 2109187
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2109111-003DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **9/14/2021** RunNo: **69913**
Client ID: **BATCH** Batch ID: **33686** Analysis Date: **9/14/2021** SeqNo: **1417515**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	257	0.500	250.0	0	103	70	130	242.4	5.97	30	

Work Order: 2109187
CLIENT: Robinson Noble
Project: Havens

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: **MB-33684**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **MBLKW**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417557**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500									

Sample ID: **LCS-33684**	SampType: **LCS**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **LCSW**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417558**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	54.3	0.500	50.00	0	109	85	115				

Sample ID: **2109174-001ADUP**	SampType: **DUP**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **BATCH**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417560**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500						0		30	

Sample ID: **2109174-001AMS**	SampType: **MS**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **BATCH**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417561**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	270	0.500	250.0	0.3005	108	70	130				

Sample ID: **2109174-001AMSD**	SampType: **MSD**			Units: **µg/L**		Prep Date: **9/14/2021**			RunNo: **69915**	
Client ID: **BATCH**	Batch ID: **33684**					Analysis Date: **9/14/2021**			SeqNo: **1417562**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	263	0.500	250.0	0.3005	105	70	130	269.8	2.70	30	

Sample Log-In Check List

Client Name:	**NOBLE**	Work Order Number:	**2109187**
Logged by:	**Gabrielle Coeuille**	Date Received:	**9/13/2021 3:51:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☑	No ☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 9/13/2021 Page: 1 of: 1
Laboratory Project No (internal): 2109187
Project Name: Havens
Special Remarks: Need EIM
Project No: 2491-001G
Client: Robinson Noble
Collected by: Max Wills
Address: 17625 130th Ave NE, Suite 102
Location: Havens
City, State, Zip: Woodinville, WA 98072
Report To (PM): Max Wills
Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)
Telephone: (206) 550-7215
PM Email: mwills@robinson-noble.com
Fax:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	DISSOLVED LEAD	TOTAL LEAD			Comments
1 MW5-1	9/12/21	10:00	GW	2													X	X			
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x	Max Wills	9/13/21 14:30	x Justine Mantz	Justine Mantz	9/13 15:51
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Groundwater Sampling Record

Robinson Noble, Inc.
3011 S. Huson Street, Suite A
Tacoma, WA 98409
(253) 475-7711

Project Name: John's Auto Wrecking

Project Number: 2491-001G

Well Name: MW-5 **Date:** 9-12-2021

Physical Setting

Depth to water (ft)	5.23 toc / 2.53 bgs	**Date/Time collected:**	9-12-2021/10:00
Total well depth (ft)	14.0' bgs (on 9/1/21 after purging) Stick up = 2.70'	**Collected by:**	MTW
Screened interval (ft)	4-14 bgs (at const.)	**Weather:**	Sunny
Pumping method:	Bladder Pump	**Notes / Comments:**	Over purged to clear sediment (~ 12 gal), with pump set near base, then raised and decreased rate to sample.
Pump setting:	7' bgs (at final sampling)		

Water Quality Results

Time	t (min)	Volume (gal)	Turb (NTU)	Temp (°C)	Cond (µs/cm/°C)	TDS (g/L)	DO (mg/L)	pH	ORP (mV)	Notes
9:10	0	0	Started purge from base of well; moderately turbid at start then appeared to clear							
9:35	25	12	47.1	8.72	0.696	0.051	11.17	6.23	182	Raised pump, water relatively clear
9:40	30	13	23.5	8.59	0.751	0.049	10.41	6.44	150	
9:45	35	13.5	17.3	8.63	0.490	0.046	9.73	6.54	144	
9:50	40	14	15.6	8.49	0.037	0.049	9.15	6.13	114	
9:55	45	14.25	14.5	8.55	0.032	0.053	9.21	6.02	102	
10:00	50	14.5	14.0	8.53	0.032	0.041	9.30	6.01	91	

Sampling

Time sampled:	10:00	**Containers filled:**	2 poly
t (min) sampled:	50 minutes	**Sampled by:**	MTW
Analysis performed:	Total and Dis Lead	**Laboratory name:**	Freemont Analytical
Date of delivery:	9-13-2021	**Date of analysis:**	9-14-2021