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December 20, 2021

Danette Brannin
Mason Transit Authority
790 E Johns Prairie Rd
Shelton, WA 98584
dbrannin@masontransit.org

Re: No Further Action at the following Site:

- **Site Name:** Mason County Public Trans Site (a.k.a. Radich Property)
- **Site Address:** 536 W Railroad Ave., Shelton Washington, Mason County, 98584
- **Facility/Site No.:** 69807
- **Cleanup Site No.:** 14444
- **VCP Project No.:** SW1634

Dear Danette Brannin:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Mason County Public Trans Site (a.k.a. Radich Property) facility (Site). This letter provides our opinion and analysis. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), chapter 70A.305 RCW.[1]

Issue Presented and Opinion

Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, chapter 70A.305 RCW, and its implementing regulations, Washington Administrative Code (WAC) chapter 173-340[2] (collectively "substantive requirements of MTCA"). The analysis is provided below.

[1] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305
[2] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340

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:

- Diesel range and Oil range total petroleum hydrocarbons (TPH-D, TPH-O, collectively TPH-D/O) into the soil.
- Metals into the soil (arsenic, barium, chromium, lead, and mercury).
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) into the soil.
- Polychlorinated biphenyls (PCBs) into the soil.

A detailed description of the Site and history of activities can be found in the 2021, Landau Associates' *2021 Revised Site Investigation and Cleanup Report* (the Report). **Enclosure A** includes a brief description and diagrams of the Site.

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

Basis for the Opinion

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

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.[3] Some site documents may be available on Ecology's Cleanup Site Search web page.[4]

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

Analysis of the Cleanup

Ecology has concluded that **no further remedial action** is 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.**

Figures and Tables referenced below are included in **Enclosure A**.

[3] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
[4] https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=14444

Landau Associates (Landau) has sufficiently defined the Site for all media and demonstrated that all exposure pathways are incomplete. Ecology discussed concerns with certain aspects of the Site cleanup in the November 9, 2020, opinion letter. Landau has addressed those issues in the Report and the May 21, 2021, *Request for No Further Action and Response to Ecology Comments* (the Response Letter) and demonstrated that the Site has sufficiently met the substantive requirements of MTCA.

Although the Site has not been defined to laboratory method detection limits (MDLs) or Site background concentrations, Landau has demonstrated that laboratory reporting limits (RLs) meet or exceed established practical quantitation limits (PQL) such that it is more likely than not that the extents of contamination are understood and that the Site does not create a risk to human health and the environment. Landau's Table 1 and Table 2 present the laboratory PQL or PQL ranges for all relevant hazardous substances in relation to the Sites cleanup levels (CULs) and PQLs published in the *Guidance for Remediation of Petroleum Contaminated Sites*.[5]

Contaminated Site soils have been excavated to below established CULs and a permeable pavement parking lot and pedestrian corridor have been constructed on the property. Landau Figure 5 presents the Site and shows the areas of excavation. Landau Table 8 and Table 9 demonstrate the compliance to Site cleanup levels.

Groundwater at the Site has been shown to be unaffected by hazardous substances at the Site at levels that exceed the laboratory RLs (Landau Table 5).

Due to the urban location of the Site and absence of large contiguous green spaces near the Site, the terrestrial ecological evaluation (TEE) of the Site is sufficient to demonstrate that exclusion from further evaluation is appropriate.

The exposure pathways for the Site as Ecology currently understands them are:

Soil-Direct Contact: Ecology concurs that there is an incomplete pathway to receptors of concern by direct contact soil.

Soil-Leaching: Ecology concurs that there is an incomplete pathway to receptors of concern by soil-leaching to groundwater.

Soil-Vapor: Ecology concurs that there is an incomplete pathway to receptors of concern by vapor intrusion (VI) from soil-vapor.

Groundwater: Ecology concurs that there is an incomplete pathway to receptors of concern by groundwater.

Ecological: Ecology concurs that there is an incomplete pathway to ecological receptors of concern.

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

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

Cleanup Standards: Under MTCA, cleanup standards consist of three primary components; points of compliance, cleanup levels, and applicable state and federal laws.

a. Points of Compliance. Standard points of compliance listed below are being applied to the Site. Points of compliance are the specific locations at the Site where cleanup levels have been attained.

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.[6]
Soil-Protection of Groundwater	Based on the protection of groundwater, the standard point of compliance is throughout the Site.[7]
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.[8]

b. Cleanup Levels. Cleanup levels are the concentrations of a hazardous substance in soil, water, air, and/or sediment that are determined to be protective of human health and the environment. At this Site, MTCA Method B cleanup screening levels were used to evaluate contamination detected at the Site in soil and MTCA Method A cleanup screening levels were used to evaluate relevant hazardous substances in groundwater at the Site.

For some hazardous substances in soil, the MTCA Method A CUL is being used instead of the Method B CUL published in Cleanup Levels and Risk Calculation[9] (CLARC) Tables or because there is not a Method B CUL published in CLARC. MTCA Method B cleanup screening level were used to rule out potential hazard to indoor air for the building located on the Site.

The unrestricted land use cleanup standards for the Site are as follows:

- For direct contact soils, Method B CULs were used as screening levels.
    - The total TPH concentration, 1,500 milligrams per kilogram (mg/kg), established in *Model Remedies for Sites with Petroleum Contaminated Soils*[10] is being used to evaluate total TPH-D and TPH-O.

[6] WAC 173-340-740(6)(d)
[7] WAC 173-340-747
[8] WAC 173-340-720(8)(b)
[9] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC/Data-tables
[10] https://apps.ecology.wa.gov/publications/SummaryPages/1509043.html

- Method B CULs are being applied to barium, cadmium, chromium, selenium, and silver. The barium CUL has been adjusted downward to account for total hazard quotient (HQ) and is discussed further in the Total Site Risk Assessment section below.

- Method A CULs are being used as Method B CULs for lead and mercury, because they do not have Method B CULs established. The Method A CUL for arsenic is also being used for the site. Using MTCA Method A CULs as Method B CULs is permitted as explained in the *Concise Explanatory Statement*[11] (CES) item GQ 9.1.4. Risks associated with using the higher 20 mg/kg CUL for arsenic instead of the Method B cancer CUL of 0.67 mg/kg are addressed in the Total Site Risk Assessment section below.

- Standard Method B CULs published in CLARC are being used to assess polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs).

- For soils protective of groundwater, it has been established by empirical demonstration that current contamination levels are protective of groundwater.

- For groundwater, Method A CULs are being applied. Because all detectible concentrations of constituents of concern have been below Method A CULs, Ecology concurs that this will be protective of groundwater.

A full list of the CULs applied to groundwater can be found in Landau's Table 1.
A full list of the CULs applied to soil can be found in Landau's Table 2.

Total Site Risk Assessment

A total HQ assessment was conducted by Landau (Table 3), and the barium CUL was reduced from 16,000 mg/kg to 10,000 mg/kg to assure that the HQ for the relevant system (Urinary) did not exceed a value of 1.

Ecology evaluated the total cancer risk for the Site. Ecology determined that achieving a total cancer risk no greater than $1X10^{-5}$ for the Site is not feasible. This is due to the presence of arsenic at the Site. Because the natural background level of 7 mg/kg for arsenic has a cancer risk of $1.1X10^{-5}$ on its own, and Method B CULs do not have to be adjusted "at levels below the practical quantitation limit or natural background, whichever is higher."[12]

[11] Washington Department of Ecology, Concise Explanatory Statement for the Amendments to the Model Toxics Control Act Cleanup Regulation Chapter 173-340 WAC, Publication No.: 01-09-043, February 12, 2001. https://fortress.wa.gov/ecy/publications/summarypages/0109043.html
[12] WAC 173-340-705(6)

Total cancer risk calculations for the Site at both a CUL of 7 mg/kg and 20 mg/kg for arsenic are included in **Enclosure C**. Given the remaining arsenic at the Site (Landau Table 8 and Table 9) ranging from 2.1 mg/kg to 7.3 mg/kg it seems likely that the Site could achieve compliance with the natural background concentration of 7 mg/kg using a statistical approach.

Ecology completed a statistical evaluation of arsenic concentrations in soil at the Site in comparison to the natural background concentration of 7 mg/kg. Based on the results of our evaluation, arsenic in soil at the Site does meet the natural background level at a 95 upper confidence level (UCL). Ecology's UCL evaluation is included in **Enclosure C**.

Because there are only two other hazardous substances associated with the Site that have a cancer risk (cPAHs [benzo(a)pyrene (BaP)] and PCBs) they cannot exceed a total cancer risk greater than $1X10^{-5}$ on their own using standard Method B CULs calculated at a single substance cancer risk of $1X10^{-6}$.

No other adjustments were necessary for the total risk assessment at this Site.

c. <u>Applicable Laws and Regulations</u>. The following applicable state and federal laws for the cleanup action have been identified by Landau:

- Washington Solid Waste Management Act (RCW 70.95) and its implementing regulation; Criteria for Municipal Solid Waste Landfills (Chapter 173-351 WAC).
- Hazardous Waste Operations (WAC 296-843).

Ecology concurs with the applicable laws and regulations identified.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

Cleanup actions at the Site to date have included excavation and proper off Site disposal of contaminated soils at permitted facilities Columbia Ridge Landfill and Waller Road Inert Landfill.

Ecology believes that the cleanup action meets the threshold requirements of WAC 173-340-360(2)[13] in that:

- It is protective of human health and the environment, complies with cleanup standards, and complies with applicable state and federal laws. Compliance monitoring is not required at this Site.
- Ecology believes that the cleanup method used is permanent to the maximum extent practicable, and provided for cleanup in a reasonable time frame.

[13] https://apps.leg.wa.gov/wac/default.aspx?cite=173-340-360

- Groundwater contamination levels were below laboratory RLs and Method A CULs for all samples collected. Groundwater does not appear to have been impacted.
- The Site is not expected to be used as a school or residential property. Planned future use of the Site is as a parking lot.
- Institutional controls are not being required at the Site.
- The source of the contamination has been removed and hazardous substances in excess of the CULs have been removed. Cleanup actions have prevented any future release and minimized any future migration.
- Cleanup actions are not relying on dilution or dispersion.
- Remediation levels are not being used for this Site.

4. Cleanup.

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

Contaminated soils in excess of the CULs established for the Site have been excavated and properly disposed of at permitted facilities.

Listing of the Site

Based on this opinion, Ecology will remove the Site from our Confirmed and Suspected Contaminated Sites List.

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).

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1634).

For more information about the VCP and the cleanup process, please visit our Voluntary Cleanup Program web page.[14] If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at (360) 584-6212 or e-mail at aaren.fiedler@ecy.wa.gov.

Sincerely,

Aaren Fiedler

Aaren Fiedler, LG
Toxics Cleanup Program
Southwest Regional Office

AF/tm

Enclosures: A – Description, Diagrams, and Tables of the Site
B – Basis for Opinion – List of Documents
C – Ecology Assessments

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Ecology Site File

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

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Enclosure A

Description, Diagrams, and Tables of the Site

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Site Description

The Site known as Mason County Public Trans Site is located north of the intersection of W Railroad Ave and S 6th St in Shelton, Mason County, Washington. The Site is located in a commercial area of the City of Shelton that transitions to mixed commercial and residential to the north, west, and south of the Site, and commercial/industrial to the east.

The Site is comprised of two parcels, 320196503905 (3905), and 320196503005 (3005). Parcel 3905 has a building located in its southwest corner. The remainder of parcel 3905 and the entirety of parcel 3005 are used as a gravel parking lot and storage area. The building on parcel 3905 is used by the United Way of Mason County as administrative offices. Adjacent to the Site on the west is a hotel and restaurant. North of the Site, across a city alleyway, are the Mason County Transit Community center and a movie theater. Adjacent to the Site on the east is a Century Link Cable/Internet provider building. Across W Railroad Ave from the Site are a Credit Union (east of 6th St) and a commercial building (west of 6th St).

The source or sources of the contamination have not been specifically determined other than coming from historical property uses and imported fill material. Historical property uses have been identified as a materials staging, storage, and loading area for the Simpson Timber Company and a historical railroad that ran adjacent to the property. From the limited sampling conducted as part of the 2017 Phase II Environmental Site Assessment, oil range petroleum hydrocarbons (TPH-O), barium, chromium, and lead are present at the Site.

Materials Testing & Consulting, Inc.'s (MTC's) boring logs report the Site geology as consisting of various sands, silts, and gravels down to a depth of 10 feet with fill material located at shallow depths (0 to 3 feet below ground surface [bgs]). Depth to groundwater was reported at approximately 10 feet to 12 feet bgs. The Site specific groundwater flow direction has not been determined. Shelton Creek is located approximately 340 feet north of the Site. Goldsborough Creek is located approximately 900 feet south of the Site. Oakland Bay is located approximately 0.7 miles east of the Site.

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Site Diagrams

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Legend

- ⊕ Investigation/Performance Sampling Location
- ▲ Confirmation Sampling Location
- Subject Property

2020 Excavated Site Surface

- 1-ft Excavation - Gravel Walkway (2020)
- 1-ft Excavation - Planter Area (2020)
- 3-ft Excavation - Permeable Pavement Area (2020)

I	Investigation
P	Performance
C	Confirmation

Grayed Shaded Samples Represent Soil that has been Removed

0 20 40

Scale in Feet

Notes

1. Investigation samples were collected during the investigation phase of work. Soil represented by these samples remains in place at the site.
2. Performance samples were collected during the investigation phase of work. Soil represented by these samples has since been removed from the site.
3. Confirmation samples were collected after the investigation phase of work. Soil represented by these samples remains in place at the site.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Google Earth Pro.

LANDAU ASSOCIATES

Mason Transit Authority T-CC Parking Lot Shelton, Washington	**Summary of 2019 and 2020 Soil Sampling Locations**	Figure 5

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Site Tables

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Table 1
Groundwater Cleanup Levels
Mason Transit Authority
Shelton, Washington

Analyte	MTCA Method A CUL	Laboratory Reporting Limit (µg/L)	Ecology Practical Quantitation Limit (a) (µg/L)
Petroleum Hydrocarbons (µg/L; NWTPH-Gx, -Dx)			
Gasoline Range Organics	800/1,000	0.25	250
Diesel Range Organics	500	0.24	250
Oil Range Organics	500	0.40	500
Dissolved Metals (µg/L; SW-846 6020D, 7470A)			
Arsenic	5	0.0050	N/A
Barium	N/A	0.0060	N/A
Cadmium	5	0.0020	0.1
Chromium, Total	50	0.0020	0.5
Lead	15	0.0040	0.1
Mercury	2	0.00030	N/A
Selenium	N/A	0.040	N/A
Silver	N/A	0.0020	N/A
Polychlorinated Biphenyls (µg/L; SW-846 8082A)			
Aroclor 1016	N/A	0.10	0.1
Aroclor 1221	N/A	0.10	0.1
Aroclor 1232	N/A	0.10	0.1
Aroclor 1242	N/A	0.10	0.1
Aroclor 1248	N/A	0.10	0.1
Aroclor 1254	N/A	0.10	0.1
Aroclor 1260	N/A	0.10	0.1
Total PCBs	0.1	N/A	N/A
Select Volatile Organic Compounds (µg/L; SW-846 8011, 8260C)			
1,2-Dibromoethane (EDB)	0.01	0.0099 - 0.020	0.01
1,2-Dichloroethane	5	0.20	1
Benzene	5	0.20	1
Ethylbenzene	700	0.20	1
m-&p-Xylenes	N/A	0.50	1
Methyl-tert-butyl ether	20	0.30	1
o-Xylene	N/A	0.50	1
Toluene	1,000	0.20	1
Total Xylenes	1,000	N/A	N/A
Semivolatile Organic Compounds (µg/L; SW-846 8270D SIM)			
Benzo(a)anthracene	N/A	0.091 - 0.093	0.02
Benzo(a)pyrene	0.1	0.091 - 0.093	0.02
Benzo(b)fluoranthene	N/A	0.091 - 0.093	0.02
Benzo(k)fluoranthene	N/A	0.091 - 0.093	0.02
Chrysene	N/A	0.091 - 0.093	0.02
Dibenzo(a,h)anthracene	N/A	0.091 - 0.093	0.02
Indeno(1,2,3-cd)pyrene	N/A	0.091 - 0.093	0.02
cPAH TEQ	0.1	N/A	N/A

Notes:

(a) PQLs referenced from Ecology 2016. Guidance for Remediation of Petroleum Contaminated Sites. Publication No. 10-09-057. June 2016.

Bold text indicates detected analyte

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

Acronyms/Abbreviations:

CUL = cleanup level
EDB = ethylene dibromide
FD = field duplicate
ft = feet
ID = Identification
µg/L = micrograms per liter
MTCA = Model Toxics Control Act
N = primary sample
N/A = not applicable
ND = not detected
PAH = polycyclic aromatic hydrocarbon
SIM = selected ion monitoring
TEQ = toxicity equivalency quotient

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Table 2
Soil Cleanup Levels
Mason Transit Authority
Shelton, Washington

Analyte	Method A Unrestricted (mg/kg)	Method B		Soil CUL (mg/kg)	Basis for Soil CUL	Laboratory Reporting Limit (mg/kg)	Ecology Practical Quantitation Limit (e) (mg/kg)
		Method B Non-Cancer Direct Contact (mg/kg)	Method B Cancer Direct Contact (mg/kg)				
Gasoline Range Organics	30/100	NA	NA	--		4.2 - 5.9	5
Diesel Range Organics	2,000	NA	NA	--		9.8 - 58	25
Oil Range Organics	2,000	NA	NA	--		25 - 58	100
Total Petroleum Hydrocarbons	NA	1,500 (b)		1,500	Generic TPH Method B Cleanup Level	N/A	N/A
Arsenic	20	24	0.67	20	Method A	2.0 - 3.0	N/A
Barium	N/A	16,000	--	10,000	Method B Non-cancer Direct Contact; adjusted downward based on total site hazard index calculations, see Table 3.	0.71 - 0.78	N/A
Cadmium	2	80	--	80	Method B Non-cancer Direct Contact	1.4 - 1.6	0.1
Chromium, Trivalent (c)	2,000	120,000	--	120,000	Method B Non-cancer Direct Contact	1.9 - 2.0	0.5 (d)
Chromium, Hexavalent	19	240	--	240	Method B Non-cancer Direct Contact	5.1 - 6.0	0.5 (d)
Lead	250	--	--	250	Method A	2.1 - 2.4	0.1
Mercury	2	--	--	2	Method A	0.019 - 0.030	N/A
Selenium	N/A	400	--	400	Method B Non-cancer Direct Contact	7.1 - 7.8	N/A
Silver	N/A	400	--	400	Method B Non-cancer Direct Contact	3.6 - 3.9	N/A
Aroclor 1016	N/A	5.6	14	5.6	Method B Non-cancer Direct Contact	0.0096 - 0.023	0.04
Aroclor 1221	N/A	--	--	--		0.0096 - 0.023	0.04
Aroclor 1232	N/A	--	--	--		0.0096 - 0.023	0.04
Aroclor 1242	N/A	--	--	--		0.0096 - 0.023	0.04
Aroclor 1248	N/A	--	--	--		0.0096 - 0.023	0.04
Aroclor 1254	N/A	1.6	0.5	0.5	Method B Cancer Direct Contact	0.0096 - 0.023	0.04
Aroclor 1260	N/A	--	0.5	0.5	Method B Cancer Direct Contact	0.0096 - 0.023	0.04
Total PCBs	1	--	0.5	0.5	Method B Cancer Direct Contact	N/A	N/A
1,2-Dibromoethane (EDB)	0.005	720	0.5	0.5	Method B Cancer Direct Contact	0.00076 - 0.0012	0.001
1,2-Dichloroethane	N/A	480	11	11	Method B Cancer Direct Contact	0.00076 - 0.0012	0.001
Benzene	0.03	320	18	18	Method B Cancer Direct Contact	0.0015 - 0.0024	0.005
Ethylbenzene	6	8,000	--	8000	Method B Cancer Direct Contact	0.0015 - 0.0024	0.005
m-&p-Xylenes	N/A	16,000	--	16000	Method B Cancer Direct Contact	0.0076 - 0.012	0.005 for each isomer
Methyl-tert-butyl ether	0.1	--	560	560	Method B Non-cancer Direct Contact	0.0015 - 0.0024	0.001
o-Xylene	N/A	16,000	--	16,000	Method B Cancer Direct Contact	0.0038 - 0.006	0.005
Toluene	7	6,400	--	6,400	Method B Cancer Direct Contact	0.0076 - 0.012	0.005
Total Xylenes	9	16,000	--	16,000	Method B Cancer Direct Contact	N/A	N/A
Benzo(a)anthracene	N/A	--	--	--		0.0049 - 0.028	0.05
Benzo(a)pyrene	0.1	24	0.19	0.19	Method B Cancer Direct Contact	0.0049 - 0.028	0.05
Benzo(b)fluoranthene	N/A	--	--	--		0.0049 - 0.11	0.05
Benzo(k)fluoranthene	N/A	--	--	--		0.0049 - 0.028	0.05
Chrysene	N/A	--	--	--		0.0049 - 0.11	0.05
Dibenzo(a,h)anthracene	N/A	--	--	--		0.0049 - 0.028	0.05
Indeno(1,2,3-cd)pyrene	N/A	--	--	--		0.0049 - 0.028	0.05
cPAH TEQ	0.1	24	0.19	0.19	Method B Cancer Direct Contact	N/A	N/A

Notes:

(a) Washington State 90th percentile value as determined by the total method (USGS. 1995. *Background Concentrations of Metals in Soils from Selected Regions in the State of Washington* . Ames, Kenneth C. and Edumd A. Prych. U.S. Geological Survey (USGS), Water Resources Investigations Report 95-4018.)

(b) Generic Method B CUL value for TPH based on Ecology Model Remedies Guidance (Ecology. 2017. *Model Remedies for Sites with Petroleum Contaminated Soils;* edited by Toxics Cleanup Program: Washington State Department of Ecology).

(c) Hexavalent chromium was not detected above the laboratory reporting limit in any sample, therefore the trivalent chromium cleanup level is used for total chromium results.

(d) The Ecology practical quantitation limit is for total chromium.

(e) PQLs referenced from Ecology 2016. Guidance for Remediation of Petroleum Contaminated Sites. Publication No. 10-09-057. June 2016.

Acronyms/Abbreviations:

MTCA = Model Toxics Control Act
N/A = not applicable
cPAH = carcinogenic polycyclic aromatic hydrocarbon
TEQ = toxicity equivalency quotient
TPH = total petroleum hydrocarbons

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Table 3
Total Site Risk - Non-Carcinogenic Site Risk
TCC-Parking Lot
Shelton, Washington

Analyte (a)	Unadjusted pCUL (b)	Adjusted Soil CUL	Constituent Concentration in Soil at HQ = 1 (c)	HQ at Adjusted CUL (d)	Developmental Toxicity: HQ Risk at CUL	Urinary: HQ Risk at CUL	Immunological Toxicity: HQ Risk at CUL	Reproductive toxicity: HQ Risk at CUL	Other/Not Specified: HQ Risk at CUL
TOTAL METALS (mg/kg)									
Barium	16000	10000	16000	6.25E-01		6.25E-01			
Cadmium	2	2	80	2.50E-02		2.50E-02			
Chromium	2000	2000	120000	1.67E-02					1.67E-02
PAHs (mg/kg)									
Total cPAH TEQ	1.9	1.9	24	7.92E-02	7.92E-02		7.92E-02	7.92E-02	
Total HI at Adjusted Soil pCUL (e)					**7.92E-02**	**6.50E-01**	**7.92E-02**	**7.92E-02**	**1.67E-02**

Notes:

(a) Non-carcinogenic indicator hazardous substance.
(b) Unadjusted pCUL is after adjustment for carcinogenic risk as shown on Table 9, if constituent is a carcinogen.
(c) Constituent concentration in soil or groundwater at HQ = 1 is equal to the direct contact CUL.
(d) HQ at adjusted CUL = adjusted soil CUL divided by the constituent concentration at HQ = 1.
(e) Total HI at surface water CUL.
(f) Total HI at soil CUL.
(g) No associated HQ risk for this toxic effect.

Abbreviations/Acronyms:

CUL = cleanup level
HI = hazard index
HQ = hazard quotient
µg/L = micrograms per liter
mg/kg = milligrams per kilogram
pCUL = preliminary cleanup level

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Table 5
2019 Subsurface Investigation Groundwater Analytical Results
Mason Transit Authority
Shelton, Washington

Analyte	MTCA Method A CUL	Sample Location, Sample End Depth, Sample Date, Sample Type, Laboratory Sample ID			
		MTA-B02 14 ft 6/26/2019 N 580-87205-6	MTA-B02 14 ft 6/26/2019 FD 580-87205-7	MTA-B07 14 ft 6/26/2019 N 580-87205-9	MTA-B08 14 ft 6/25/2019 N 580-87175-6
Sample Type:		Inestigation	Inestigation	Inestigation	Inestigation
Petroleum Hydrocarbons (µg/L; NWTPH-Gx, -Dx)					
Gasoline Range Organics	800/1,000	250 U	250 U	250 U	250 U
Diesel Range Organics	500	240 U	240 U	240 U	240 U
Oil Range Organics	500	400 U	400 U	400 U	400 U
Dissolved Metals (µg/L; SW-846 6020D, 7470A)					
Arsenic	5	5.0 U	5.0 U	5.0 U	5.0 U
Barium	N/A	6.0 U	6.0 U	6.0 U	6.0 U
Cadmium	5	2.0 U	2.0 U	2.0 U	2.0 U
Chromium, Total	50	2.0 U	2.0 U	2.0 U	2.0 U
Lead	15	4.0 U	4.0 U	4.0 U	4.0 U
Mercury	2	0.30 U	0.30 U	0.30 U	0.30 U
Selenium	N/A	40 U	40 U	40 U	40 U
Silver	N/A	2.0 U	2.0 U	2.0 U	2.0 U
Polychlorinated Biphenyls (µg/L; SW-846 8082A)					
Aroclor 1016	N/A	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor 1221	N/A	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor 1232	N/A	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor 1242	N/A	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor 1248	N/A	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor 1254	N/A	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor 1260	N/A	0.10 U	0.10 U	0.10 U	0.10 U
Total PCBs	0.1	0.10 U	0.10 U	0.10 U	0.10 U
Select Volatile Organic Compounds (µg/L; SW-846 8011, 8260C)					
1,2-Dibromoethane (EDB)	0.01	0.010 U	0.020 U	0.0099 U	0.0099 U
1,2-Dichloroethane	5	0.20 U	0.20 U	0.20 U	0.20 U
Benzene	5	0.20 U	0.20 U	0.20 U	0.20 U
Ethylbenzene	700	0.20 U	0.20 U	0.20 U	0.20 U
m-&p-Xylenes	N/A	0.50 U	0.50 U	0.50 U	0.50 U
Methyl-tert-butyl ether	20	0.30 U	0.30 U	0.30 U	0.30 U
o-Xylene	N/A	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1,000	0.20 U	0.20 U	0.20 U	0.20 U
Total Xylenes	1,000	0.50 U	0.50 U	0.50 U	0.50 U
Semivolatile Organic Compounds (µg/L; SW-846 8270D SIM)					
Benzo(a)anthracene	N/A	0.091 U	0.093 U	0.091 U	0.091 U
Benzo(a)pyrene	0.1	0.091 U	0.093 U	0.091 U	0.091 U
Benzo(b)fluoranthene	N/A	0.091 U	0.093 U	0.091 U	0.091 U
Benzo(k)fluoranthene	N/A	0.091 U	0.093 U	0.091 U	0.091 U
Chrysene	N/A	0.091 U	0.093 U	0.091 U	0.091 U
Dibenzo(a,h)anthracene	N/A	0.091 U	0.093 U	0.091 U	0.091 U
Indeno(1,2,3-cd)pyrene	N/A	0.091 U	0.093 U	0.091 U	0.091 U
cPAH TEQ (ND=1/2 RL)	0.1	0.069 U	0.070 U	0.069 U	0.069 U

Notes:

Bold text indicates detected analyte

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

Acronyms/Abbreviations:

CUL = cleanup level
EDB = ethylene dibromide
FD = field duplicate
ft = feet
ID = Identification
µg/L = micrograms per liter
MTCA = Model Toxics Control Act
N = primary sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
SIM = selected ion monitoring
TEQ = toxicity equivalency quotient

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Table 8
2020 Soil Confirmation Analytical Results
Mason Transit Authority
Shelton, Washington

Analyte	CUL	Sample Location, Sample Depth Interval, Sample Date, Sample Type, Lab Sample ID								
		MTA-B13 1 ft 5/11/2020 N 580-94618-1	MTA-B14 1 ft 5/11/2020 N 580-94618-1	MTA-B15 1 ft 5/11/2020 N 580-94618-1	MTA-B16 1 ft 5/21/2020 N 580-94853-1	MTA-B17 3 ft 5/21/2020 N 580-94853-2	MTA-B18 3 ft 5/21/2020 N 580-94853-3	MTA-B19 3 ft 5/21/2020 N 580-94853-4	MTA-B20 3 ft 5/21/2020 N 580-94853-5	MTA-B21 3 ft 5/21/2020 N 580-94853-6
Sample Type:		Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Petroleum Hydrocarbons (mg/kg; NWTPH-Dx)										
Diesel Range Organics	N/A	53 U	56 U	58 U	52 U	51 U	49 U	52 U	51 U	52 U
Oil Range Organics	N/A	**170**	**220**	**120**	52 U	**140**	**54**	**170**	**110**	**97**
Total Petroleum Hydrocarbons	1,500	**170**	**220**	**120**	52 U	**140**	**54**	**170**	**110**	**97**
Total Metals (mg/kg; SW-846 6020C, 7470A)										
Arsenic	20	**7.3**	**3.4**	**3.1**	4.7 U	4.7 U	4.3 U	**5.1**	4.7 U	4.6 U
Barium	10,000	**86 J**	**93**	**95**	**47**	**73**	**54**	**80**	**78**	**77**
Cadmium	80	0.70 U	0.80 U	0.81 U	1.6 U	1.6 U	1.4 U	1.6 U	1.6 U	1.5 U
Chromium, Total (a)	120,000	**69**	**94**	**95**	**52**	**93**	**70**	**82**	**94**	**83**
Lead	250	**140**	**170**	**62**	**14 J**	**63**	**26**	**56**	**43**	**35**
Mercury	2	**0.10 J**	**0.039**	**0.039**	0.025 U	0.027 U	**0.026**	**0.033**	**0.029**	0.029 U
Selenium	400	3.5 U	4.0 U	4.1 U	7.8 U	7.8 U	7.1 U	7.8 U	7.8 U	7.6 U
Silver	400	1.8 U	2.0 U	2.0 U	3.9 U	3.9 U	3.6 U	3.9 U	3.9 U	3.8 U
Polychlorinated Biphenyls (mg/kg; SW-846 8082A)										
Aroclor 1016	5.6	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1221	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1232	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1242	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1248	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1254	0.5	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1260	0.5	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Total PCBs	0.5	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Semivolatile Organic Compounds (mg/kg; SW-846 8270D SIM)										
Benzo(a)anthracene	N/A	**0.095**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.034**	**0.049**	**0.026**	**0.011**
Benzo(a)pyrene	0.19	**0.082**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.027**	**0.037**	**0.017**	**0.0076**
Benzo(b)fluoranthene	N/A	**0.11**	**0.028**	0.027 U	**0.0096**	**0.042**	**0.043**	**0.076**	**0.038**	**0.018**
Benzo(k)fluoranthene	N/A	**0.033**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.016**	**0.022**	**0.0077**	**0.0054**
Chrysene	N/A	**0.12**	**0.03**	0.027 U	**0.0067**	**0.040**	**0.043**	**0.072**	**0.033**	**0.019**
Dibenzo(a,h)anthracene	N/A	0.027 U	0.028 U	0.027 U	0.0049 U	0.025 U	**0.0059**	**0.0083**	0.0051 U	0.0053 U
Indeno(1,2,3-cd)pyrene	N/A	**0.059**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.025**	**0.036**	**0.016**	**0.0088**
cPAH TEQ (ND=1/2 RL)	0.19	**0.11**	**0.023**	0.020 U	**0.0045**	**0.022**	**0.040**	**0.057**	**0.026**	**0.012**

Notes:

Bold text indicates detected analyte

Green shading indicates detected analyte exceeds applicable cleanup level

1. For summing purposes if the sample results were all non-detect, the greatest reporting limit is used for the total value.

(a) Hexavalent chromium was not detected above the laboratory reporting limit in any sample, therefore total chromium values are representative of trivalent chromium.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Acronyms/Abbreviations:

-- = not analyzed
µg/kg = micrograms per kilogram
CUL = cleanup level
ft = feet
ID = Identification
MTCA = Model Toxics Control Act
N = primary sample
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
RL = Reporting Limit
SIM = selected ion monitoring
TEQ = toxicity equivalency quotient

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Table 9
Summary of Soil Analytical Results - Soil Remaining in Place
Mason Transit Authority
Shelton, Washington

Analyte	CUL	Sample Location, Sample Depth Interval, Sample Date, Sample Type, Lab Sample ID										
		MTA-B01 0-3 ft 6/25/2019 N	MTA-B01 7.3-8.3 ft 6/25/2019 N	MTA-B02 5.5-6.5 ft 6/26/2019 N	MTA-B03 0-3 ft 6/25/2019 N	MTA-B03 7-10.5 ft 6/25/2019 N	MTA-B04 10.5-11.5 ft 6/25/2019 N	MTA-B05 8-9 ft 6/25/2019 N	MTA-B06 7.5-8.5 ft 6/25/2019 N	MTA-B07 6.5-7.5 ft 6/26/2019 N	MTA-B08 0-2.5 ft 6/25/2019 N	MTA-B08 7.5-8.5 ft 6/25/2019 N
		580-87175-12	580-87175-13	580-87205-5	580-87175-7	580-87175-3	580-87175-11	580-87175-10	580-87175-8	580-87205-8	580-87175-4	580-87175-5
Sample Type:		Investigation	Investigation	Investigation	Investigation	Investigation	Investigation	Investigation	Investigation	Investigation	Investigation	Investigation
Petroleum Hydrocarbons (mg/kg; NWTPH-Gx, -Dx)												
Gasoline Range Organics	N/A	4.5 U	4.4 U	5.5 U	4.8 U	4.7 U	4.2 UJ	4.2 U	4.4 U	5.1 U	5.0 U	4.3 U
Diesel Range Organics	N/A	**10**	10 U	10 U	**13**	10 U	9.9 U	9.9 U	9.8 U	11 U	**87**	9.9 U
Oil Range Organics	N/A	**69**	25 U	25 U	**71**	25 U	25 U	25 U	25 U	27 U	**480**	25 U
Total Petroleum Hydrocarbons	1,500	**79**	25 U	25 U	**84**	25 U	25 U	25 U	25 U	27 U	**567**	25 U
Total Metals (mg/kg; SW-846 6020C, 7470A)												
Arsenic	20	2.2 U	2.1 U	2.3 U	**2.8**	2.3 U	2.2 U	**2.7**	**2.5**	2.5 U	2.2 U	2.2 U
Barium	10,000	**45**	**23**	**33**	**64**	**22**	**22**	**21**	**24**	**33**	**64**	**21**
Cadmium	80	**0.83**	0.71 U	0.77 U	**0.86**	**0.76**	**0.73**	0.68 U	0.81 U	0.82 U	**0.79**	0.74 U
Chromium, Total (a)	120,000	**56**	**36**	**63**	**53**	**33**	**39**	**35**	**42**	**54 J**	**60**	**41**
Chromium, Hexavalent	240	--	--	--	--	--	--	--	--	--	5.1 UJ	--
Lead	250	**41**	**1.1**	**9.3**	**81**	**2.2**	1.1 U	**1.2**	1.2 U	1.2 U	**100**	1.1 U
Mercury	2	**0.028**	0.025 U	0.026 U	**0.034**	0.025 U	0.019 U	0.019 U	0.024 U	0.025 U	**0.040**	0.020 U
Selenium	400	3.7 U	3.5 U	3.8 U	3.6 U	3.8 U	3.6 U	3.4 U	4.1 U	4.1 U	3.6 U	3.7 U
Silver	400	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.7 U	2.0 U	2.1 U	1.8 U	1.9 U
Polychlorinated Biphenyls (mg/kg; SW-846 8082A)												
Aroclor 1016	5.6	0.0096 U	0.01 U	0.011 U	0.01 U	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Aroclor 1221	N/A	0.0096 U	0.01 U	0.011 U	0.01 U	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Aroclor 1232	N/A	0.0096 U	0.01 U	0.011 U	0.01 U	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Aroclor 1242	N/A	0.0096 U	0.01 U	0.011 U	0.01 U	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Aroclor 1248	N/A	0.0096 U	0.01 U	0.011 U	0.01 U	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Aroclor 1254	0.5	**0.01**	0.01 U	0.011 U	**0.021**	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Aroclor 1260	0.5	0.0096 U	0.01 U	0.011 U	0.01 U	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Total PCBs	0.5	**0.01**	0.01 U	0.011 U	**0.021**	0.0097 U	0.01 U	0.0096 U	0.0097 U	0.01 U	0.01 U	0.0098 U
Select Volatile Organic Compounds (mg/kg; SW-846 8260C)												
1,2-Dibromoethane (EDB)	0.5	0.00076 UJ	0.0012 U	0.0011 U	0.00085 UJ	0.00096 UJ	0.00089 U	0.00085 U	0.00086 U	0.00089 UJ	0.00093 U	0.00086 U
1,2-Dichloroethane	11	0.00076 UJ	0.0012 U	0.0010 U	0.00085 UJ	0.00096 UJ	0.00089 U	0.00085 U	0.00086 U	0.00092 UJ	0.00093 U	0.00086 U
Benzene	18	0.0015 UJ	0.0024 U	0.0020 U	0.0017 UJ	0.0019 UJ	0.0018 U	0.0017 U	0.0017 U	0.0018 UJ	0.0019 U	0.0017 U
Ethylbenzene	8,000	0.0015 UJ	0.0024 U	0.0020 U	0.0017 UJ	0.0019 UJ	0.0018 U	0.0017 U	0.0017 U	0.0018 UJ	0.0019 U	0.0017 U
m-&p-Xylenes	16,000	0.0076 UJ	0.012 U	0.01 U	0.0085 UJ	0.0096 UJ	0.0089 U	0.0085 U	0.0086 U	0.0092 UJ	0.0093 U	0.0086 U
Methyl-tert-butyl ether	560	0.0015 UJ	0.0024 U	0.0022 U	0.0017 UJ	0.0019 UJ	0.0018 U	0.0017 U	0.0017 U	0.0018 UJ	0.0019 U	0.0017 U
o-Xylene	16,000	0.0038 UJ	0.0060 U	0.0051 U	0.0043 UJ	0.0048 UJ	0.0045 U	0.0042 U	0.0043 U	0.0046 UJ	0.0046 U	0.0043 U
Toluene	6,400	0.0076 UJ	0.012 U	0.01 U	0.0085 UJ	0.0096 UJ	0.0089 U	0.0085 U	0.0086 U	0.0092 UJ	0.0093 U	0.0086 U
Total Xylenes	16,000	0.0076 UJ	0.012 U	0.01 U	0.0085 UJ	0.0096 UJ	0.0089 U	0.0085 U	0.0086 U	0.0092 UJ	0.0093 U	0.0086 U
Semivolatile Organic Compounds (mg/kg; SW-846 8270D SIM)												
Benzo(a)anthracene	N/A	0.0099 U	0.01 U	0.01 U	**0.017**	0.01 U	0.01 U	0.0098 U	0.01 U	0.01 U	**0.021**	0.0099 U
Benzo(a)pyrene	0.19	0.0099 U	0.01 U	0.01 U	**0.021**	0.01 U	0.01 U	0.0098 U	0.01 U	0.01 U	**0.025**	0.0099 U
Benzo(b)fluoranthene	N/A	**0.023**	0.01 U	0.01 U	**0.034**	0.01 U	0.01 U	0.0098 U	0.01 U	0.01 U	**0.029**	0.0099 U
Benzo(k)fluoranthene	N/A	0.0099 U	0.01 U	0.01 U	**0.013**	0.01 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.01 U	0.0099 U
Chrysene	N/A	**0.017**	0.01 U	0.01 U	**0.027**	0.01 U	0.01 U	0.0098 U	0.01 U	0.01 U	**0.032**	0.0099 U
Dibenzo(a,h)anthracene	N/A	0.0099 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.01 U	0.01 U	0.01 U	0.0099 U
Indeno(1,2,3-cd)pyrene	N/A	0.0099 U	0.01 U	0.01 U	**0.015**	0.01 U	0.01 U	0.0098 U	0.01 U	0.01 U	**0.013**	0.0099 U
cPAH TEQ (ND=1/2 RL)	0.19	**0.0094**	0.0076 U	0.0076 U	**0.030**	0.0076 U	0.0076 U	0.0074 U	0.0076 U	0.0076 U	**0.033**	0.0075 U

Table 9
Summary of Soil Analytical Results - Soil Remaining in Place
Mason Transit Authority
Shelton, Washington

Analyte	CUL	Sample Location, Sample Depth Interval, Sample Date, Sample Type, Lab Sample ID								
		MTA-B13 1 ft 5/11/2020 N 580-94618-1	MTA-B14 1 ft 5/11/2020 N 580-94618-1	MTA-B15 1 ft 5/11/2020 N 580-94618-1	MTA-B16 1 ft 5/21/2020 N 580-94853-1	MTA-B17 3 ft 5/21/2020 N 580-94853-2	MTA-B18 3 ft 5/21/2020 N 580-94853-3	MTA-B19 3 ft 5/21/2020 N 580-94853-4	MTA-B20 3 ft 5/21/2020 N 580-94853-5	MTA-B21 3 ft 5/21/2020 N 580-94853-6
Sample Type:		Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Petroleum Hydrocarbons (mg/kg; NWTPH-Gx, -Dx)										
Gasoline Range Organics	N/A	--	--	--	--	--	--	--	--	--
Diesel Range Organics	N/A	53 U	56 U	58 U	52 U	51 U	49 U	52 U	51 U	52 U
Oil Range Organics	N/A	**170**	**220**	**120**	52 U	**140**	**54**	**170**	**110**	**97**
Total Petroleum Hydrocarbons	1,500	**170**	**220**	**120**	52 U	**140**	**54**	**170**	**110**	**97**
Total Metals (mg/kg; SW-846 6020C, 7470A)										
Arsenic	20	**7.3**	**3.4**	**3.1**	4.7 U	4.7 U	4.3 U	**5.1**	4.7 U	4.6 U
Barium	10,000	**86 J**	**93**	**95**	**47**	**73**	**54**	**80**	**78**	**77**
Cadmium	80	0.70 U	0.80 U	0.81 U	1.6 U	1.6 U	1.4 U	1.6 U	1.6 U	1.5 U
Chromium, Total (a)	120,000	**69**	**94**	**95**	**52**	**93**	**70**	**82**	**94**	**83**
Chromium, Hexavalent	240	--	--	--	--	--	--	--	--	--
Lead	250	**140**	**170**	**62**	**14 J**	**63**	**26**	**56**	**43**	**35**
Mercury	2	**0.10 J**	**0.039**	**0.039**	0.025 U	0.027 U	**0.026**	**0.033**	**0.029**	0.029 U
Selenium	400	3.5 U	4.0 U	4.1 U	7.8 U	7.8 U	7.1 U	7.8 U	7.8 U	7.6 U
Silver	400	1.8 U	2.0 U	2.0 U	3.9 U	3.9 U	3.6 U	3.9 U	3.9 U	3.8 U
Polychlorinated Biphenyls (mg/kg; SW-846 8082A)										
Aroclor 1016	5.6	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1221	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1232	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1242	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1248	N/A	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1254	0.5	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Aroclor 1260	0.5	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Total PCBs	0.5	0.021 U	0.022 U	0.023 U	0.020 U	0.021 U	0.022 U	0.022 U	0.022 U	0.021 U
Select Volatile Organic Compounds (mg/kg; SW-846 826										
1,2-Dibromoethane (EDB)	0.5	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	11	--	--	--	--	--	--	--	--	--
Benzene	18	--	--	--	--	--	--	--	--	--
Ethylbenzene	8,000	--	--	--	--	--	--	--	--	--
m-&p-Xylenes	16,000	--	--	--	--	--	--	--	--	--
Methyl-tert-butyl ether	560	--	--	--	--	--	--	--	--	--
o-Xylene	16,000	--	--	--	--	--	--	--	--	--
Toluene	6,400	--	--	--	--	--	--	--	--	--
Total Xylenes	16,000	--	--	--	--	--	--	--	--	--
Semivolatile Organic Compounds (mg/kg; SW-846 8270										
Benzo(a)anthracene	N/A	**0.095**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.034**	**0.049**	**0.026**	**0.011**
Benzo(a)pyrene	0.19	**0.082**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.027**	**0.037**	**0.017**	**0.0076**
Benzo(b)fluoranthene	N/A	**0.11**	**0.028**	0.027 U	**0.0096**	**0.042**	**0.043**	**0.076**	**0.038**	**0.018**
Benzo(k)fluoranthene	N/A	**0.033**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.016**	**0.022**	**0.0077**	**0.0054**
Chrysene	N/A	**0.12**	**0.03**	0.027 U	**0.0067**	**0.040**	**0.043**	**0.072**	**0.033**	**0.019**
Dibenzo(a,h)anthracene	N/A	0.027 U	0.028 U	0.027 U	0.0049 U	0.025 U	**0.0059**	**0.0083**	0.0051 U	0.0053 U
Indeno(1,2,3-cd)pyrene	N/A	**0.059**	0.028 U	0.027 U	0.0049 U	0.025 U	**0.025**	**0.036**	**0.016**	**0.0088**
cPAH TEQ (ND=1/2 RL)	0.19	**0.11**	**0.023**	0.020 U	**0.0045**	**0.022**	**0.040**	**0.057**	**0.026**	**0.012**

Table 9
Summary of Soil Analytical Results - Soil Remaining in Place
Mason Transit Authority
Shelton, Washington

Notes:

Bold text indicates detected analyte

Green shading indicates detected analyte exceeds applicable cleanup level

1. Investigations samples were collected to investigate site conditions. Performance samples were also collected to investigate site conditions, but the soil has since been excavated and is no longer in place.

1. For summing purposes if the sample results were all non-detect, the greatest reporting limit is used for the total value.

(a) Hexavalent chromium was not detected above the laboratory reporting limit in any sample, therefore total chromium values are representative of trivalent chromium.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Acronyms/Abbreviations:

CUL = cleanup level
EDB = ethylene dibromide
FD = field duplicate
ft = feet
ID = Identification
µg/kg = micrograms per kilogram
MTCA = Model Toxics Control Act
N = primary sample
-- = not analyzed
N/A = not applicable
PAH = polycyclic aromatic hydrocarbon
SIM = selected ion monitoring
TCLP = toxicity characteristic leaching procedure
TEQ = toxicity equivalency quotient

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Enclosure B

Basis for the Opinion – List of Documents

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List of Documents

1. Landau Associates (Landau), *Request for No Further Action and Response to Ecology Comments*, letter, addressed to Washington State Department of Ecology, May 21, 2021.

2. Landau, *2021 Revised Site Investigation and Cleanup Report*, May 21, [2021].[15]

3. Washington State Department of Ecology (Ecology), *Further Action at the following Site*, letter, addressed to Danette Brannin, November 9, 2020.

4. Landau, *Site Investigation and Cleanup Report*, July 6, 2020.

5. Landau, *Site Investigation and Cleanup Report*, April 16, 2020.

6. Ecology, *Further Action at the following Site*, letter, addressed to Danette Brannin, February 21, 2019.

7. Materials Testing & Consulting, Inc. (MTC), *Phase II Environmental Site Assessment; MTA Community Center – Proposed Parking Area*, letter, addressed to Danette Brannin, November 30, 2017.

8. Jerome W. Morrissette & Associates Inc., P.S. (JWM&A), *Professional Services Report*, letter, addressed to Mr. Robert Johnson, March 15, 2012.

[15] Report is dated May 21, 2020, on the Report cover, but was submitted along with the 2021 Request for No Further Action and Response to Ecology Comments and has "2021" indicated in its title, with the signatures on the signature page, and in the Report footer.

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Enclosure C

Ecology Assessments

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Total Cancer Risk

Calculated Total Cancer Risk for the Mason County Public Trans Site at Natural Background Arsenic CUL of 7 mg/kg.

CAS#	Hazardous Substance	Method B Soil CUL Cancer	Proposed Modified Method B Soil CUL	Equation 740-2 Calculated Single Substance Cancer Risk For Proposed Modified Method B CULs	Final Single Substance Cancer Risk Values Method B		
7440-38-2	arsenic, inorganic	0.67	7	1.1E-05	1.1E-05		Total Cancer Risk = 1.3E-05
50-32-8	BENZO[a]PYRENE	0.19	NONE		1.0E-06		
1336-36-3	polychlorinated biphenyls (PCBs)	0.5	NONE		1.0E-06		

Calculated Total Cancer Risk for the Mason County Public Trans Site at MTCA Method A Arsenic CUL of 20 mg/kg.

CAS#	Hazardous Substance	Method B Soil CUL Cancer	Proposed Modified Method B Soil CUL	Equation 740-2 Calculated Single Substance Cancer Risk For Proposed Modified Method B CULs	Final Single Substance Cancer Risk Values Method B		
7440-38-2	arsenic, inorganic	0.67	20	3.0E-05	3.0E-05		Total Cancer Risk = 3.2E-05
50-32-8	BENZO[a]PYRENE	0.19	NONE		1.0E-06		
1336-36-3	polychlorinated biphenyls (PCBs)	0.5	NONE		1.0E-06		

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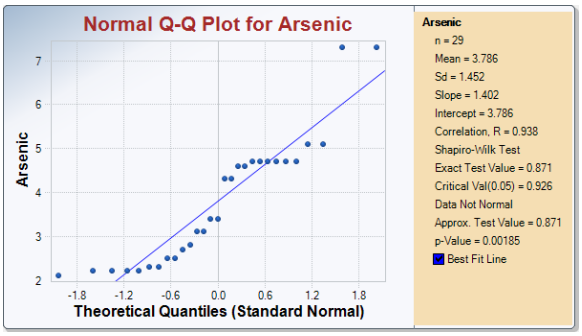
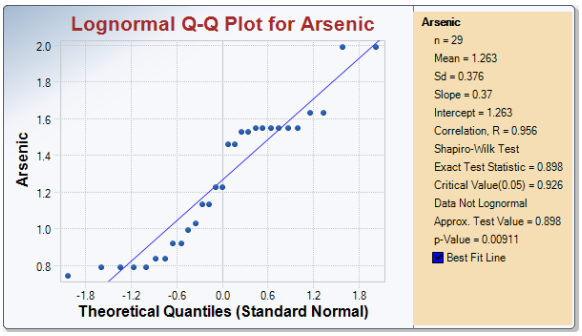
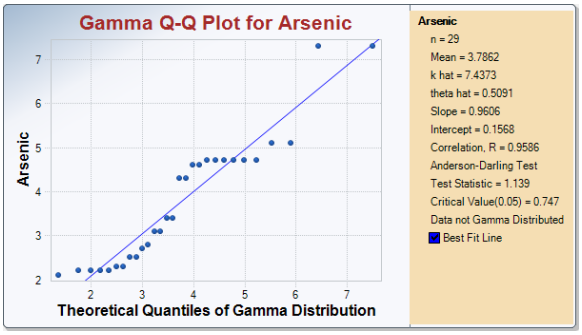
Compliance with Natural Background for Arsenic at a 95 UCL

Because the laboratory analytical results are not reported to the method detection limit (MDL) Ecology evaluated the 95 upper confidence limit (UCL) using a 'worst case scenario' methodology and assuming that the results being reported to the practical quantitation limit (PQL) are non-censored analytical results. The analytical results summarized in Landau's Table 8 and Table 9 are used to determine the UCL using ProUCL 5.1 software.

The analytical data do not fit a standard distribution; Normal, Lognormal or Gamma (ProUCL Figures included below).







Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.19/10/21 8:06:09 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	28	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	2.1	Mean	3.825
Maximum	7.3	Median	3.85
SD	1.463	Std. Error of Mean	0.277
Coefficient of Variation	0.383	Skewness	0.728
Mean of logged Data	1.272	SD of logged Data	0.38

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.296	95% Adjusted-CLT UCL (Chen-1995)	4.321
		95% Modified-t UCL (Johnson-1978)	4.302

Nonparametric Distribution Free UCLs

95% CLT UCL	4.28	95% Jackknife UCL	4.296
95% Standard Bootstrap UCL	4.274	95% Bootstrap-t UCL	4.315
95% Hall's Bootstrap UCL	4.37	95% Percentile Bootstrap UCL	4.279
95% BCA Bootstrap UCL	4.307		
90% Chebyshev(Mean, Sd) UCL	4.655	95% Chebyshev(Mean, Sd) UCL	5.03
97.5% Chebyshev(Mean, Sd) UCL	5.552	99% Chebyshev(Mean, Sd) UCL	6.576

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.