STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, Washington 98504-7600 • 360-407-6300

April 18, 2025

Jeff Johnstone
City of Olympia
601 4th Avenue East
Olympia, WA 98507
sent by email: jjohnsto@ci.olympia.wa.us

Re: No Further Action opinion for the following contaminated Site

Site Name:	Carpenter Road Olympia PD Shooting Range
Site Address:	6530 Martin Way E, Lacey, Thurston County, WA 98516
Cleanup Site ID:	14692
Facility/Site ID:	50400
VCP Project ID:	XS0008

Dear Jeff Johnstone:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the Carpenter Road Olympia PD Shooting Range site (Site).

The Site was enrolled in the expedited Voluntary Cleanup Program (VCP) process on February 25, 2022. Following enrollment, Ecology provided comments on a Remedial Investigation, Feasibility Study, and Cleanup Action Plan dated February 2, 2022, and issued a No Further Action (NFA) Likely letter on March 22, 2022. Cleanup work was conducted between September 2024 and January 2025. Ecology received a Cleanup Action Construction Completion Report[1] documenting the cleanup work on April 8, 2025.

This letter provides our opinion and analysis. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA),[2] chapter 70A.305[3] Revised Code of Washington (RCW).

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[1] Dated March 28, 2025.
[2] https://apps.ecology.wa.gov/publications/SummaryPages/9406.html
[3] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305

Opinion

Ecology has determined that no further remedial action is necessary at the Site.

Ecology bases this opinion on an analysis of whether the remedial action meets the substantive requirements of MTCA and its implementing regulations, which are specified in chapter 70A.305 RCW and chapter 173-340 WAC[4] (collectively called "MTCA").

Site Description

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

- Metals (lead, copper, and antimony) into the soil.

The Site is defined by the area of contamination. Enclosure A includes Site description, history, and diagrams. Additional information regarding the Site can also be found in Ecology's March 22, 2022, NFA Likely letter.

The Site is associated with Thurston County parcel # 11815210500, an 8.45-acre irregular-shaped parcel most recently used by the City of Olympia Police Department with an 18,000 square foot indoor shooting range. The area surrounding the shooting range structure was largely forested until recently (the property was regraded following cleanup work in 2024).

The lead in soil contamination (and lesser copper and antimony) is believed to be attributable to spent bullets at the firing range. The firing range activities resulted in lead contaminated dust on the interior building components and lead contaminated soil both inside and outside the building.

The City of Oympia completed cleanup work between September 2024 and January 2025 in preparation of construction of new solid waste operations facility infrastructure, offices, maintenance shops, truck washing facilities, and parking areas.

Please note that releases from multiple sites can affect a parcel of real property. The parcels of real property associated with this Site are also located within the projected boundaries of the Tacoma Smelter Plume (TSP) site (CSID: 643), mapped with 20 to 40 parts per million (ppm)

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

arsenic in soil. Soil sampling was conducted to evaluate potential impacts from the TSP site in November 2022 and no impacts above MTCA cleanup levels were found (see further discussion below under "Characterization of the Site").

Ecology has no information that other sites affect the parcel associated with this Site.

Basis for the Opinion

Ecology bases this opinion on the information contained in the following documents:

1. GeoEngineers. *Cleanup Action Construction Completion Report, Carpenter Road Site, Lacey, Washington*. March 28, 2025.
2. GeoEngineers. *Soil Sampling and Analytical Results Summary, Tacoma Smelter Plume Evaluation, Carpenter Road Property, Lacey, Washington*. January 11, 2023.
3. Ecology. *Opinion on Proposed Cleanup of the following Site, Carpenter Road Olympia PD Shooting Range (NFA Likely Opinion Letter)*. March 22, 2022.
4. GeoEngineers. *Remedial Investigation/Feasibility Study and Cleanup Action Plan, Carpenter Road Site, Lacey Washington*. February 2, 2022.
5. GeoEngineers. *Environmental Investigation, Carpenter Road Site, Lacey Washington*. July 3, 2017.

You can request these documents by filing a records request.[5] For help making a request, contact the Public Records Officer at publicrecordsofficer@ecy.wa.gov or call 360-407-6040. Before making a request, check whether the documents are available on Ecology's Cleanup Site Search web page.[6]

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

[5] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
[6] https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=14692

Analysis of the Cleanup

Ecology has concluded that no further remedial action is necessary to clean up contamination at the Site. Ecology bases its conclusion on the following analysis:

Characterizing the Site

Ecology has determined your completed Site characterization was sufficient for setting cleanup standards and selecting a cleanup action for the Site. **Enclosure A** describes the Site. Additional information is also found in Ecology's March 22, 2022, NFA Likely opinion letter.

Site Contaminants and Affected Media

Lead, copper, and antimony were found in soil at concentrations above MTCA cleanup levels at the Site. Like lead, copper and antimony are metals that are used in ammunition. Soil and construction materials within the shooting range were the only media affected by the release. The Site contaminants have relatively low mobility under normal pH conditions (as expected at the Site). Impacts to groundwater are unlikely, as discussed in Ecology's March 22, 2022, NFA Likely opinion letter.

Contaminated Soil Characterization

Soils outside of the shooting range building and soils and construction materials inside the building were characterized in 2017, including the collection of 51 soil samples at 19 locations.

Lead was found above the Method A cleanup level of 250 milligrams per kilogram (mg/kg) in five (5) soil samples collected inside the structure and in three (3) soil samples collected outside of the structure. Copper and antimony were found in interior soil samples at concentrations above their respective MTCA Method B (noncancer-based) cleanup levels (one for copper and two for antimony); however, lead was also found at elevated concentrations in these soil samples. Ecology determined within our March 22, 2022, NFA Likely letter that lead could serve as an indicator hazardous substance under WAC 173-340-703 for cleanup at the Site, since cleanup of lead in soil is expected to result in cleanup of soil with copper or antimony above their respective cleanup levels.

Except for the interior north wall sloped soil berm which may have included bullets penetrating into the soil, all of the soil contamination was believed to be attributable to deposition of lead dust, either aerially deposited, or transported from the roof via runoff to soils adjacent to the east and west.

Additional soil characterization was conducted during excavation cleanup work conducted at the Site, as discussed below.

2022 Tacoma Smelter Plume Soil Characterization

Shallow soil and forest duff characterization was conducted in November 2022 at Ecology's request, since the site is located within the area of the Tacoma Smelter Plume (TSP) site with arsenic in soil mapped as 20 to 40 mg/kg. A total of 43 soil and 5 forest duff samples were collected to supplement 12 shallow soil samples collected in April 2017. The sampling resulted in average arsenic and lead concentrations in shallow soil of 3.3 mg/kg and 41.9 mg/kg, respectively. Maximum concentrations were 11 mg/kg, and 240 mg/kg, respectively. All results were below the respective Method A cleanup levels for arsenic and lead of 20 mg/kg and 250 mg/kg.

The maximum concentration for lead of 240 mg/kg was believed to be biased high due to the soil sample being collected in proximity to the shooting range structure. Forest duff arsenic and lead concentrations were similar to the shallow soil concentrations. Ecology concluded that potential impacts from the TSP had been sufficiently characterized throughout the Property, and since no exceedances of MTCA cleanup levels were found, no further actions were needed.

Setting Cleanup Standards

Ecology has determined the cleanup levels and points of compliance set for the Site meet the substantive requirements of MTCA. The following cleanup levels have been selected for soil, groundwater, and indoor air at the Site:

Table 1. Cleanup Levels and Cleanup Level Exceedances in Soil from the Remedial Investigation

Contaminant	Method A Soil Cleanup Level (mg/kg)	Method B Soil Cleanup Level (mg/kg)	Number of Exceedances in Soil/ Number of Samples	Maximum Soil Detection (mg/kg)
Lead	250	3,000*/NA†	8/24	2,500
Copper	NA	280*/3,200†	1/24	7,800‡
Antimony	NA	5.4*/32†	2/24	43

NA = no cleanup level available.

* Soil-protective-of-groundwater based cleanup level.

† Direct contact (non-cancer) based cleanup level.

‡ The maximum concentration for copper was an anomalous result from one location. The next highest copper concentration was 200mg/kg.

As discussed above, Ecology has concluded that lead can be considered an indicator hazardous substance, such that the cleanup of any soils with lead concentrations exceeding the Method A cleanup level of 250 mg/kg would be expected to address any copper or antimony cleanup level exceedances.

Points of Compliance

The points of compliance are throughout the Site. Cleanup levels based on the direct contact pathway apply to soils to a depth of 15 feet below ground surface (ft bgs), whereas cleanup levels for the soil-to-groundwater pathway apply without regard to depth. The maximum depth of soil contamination found was at a depth of 2.5 ft bgs.

Terrestrial Ecological Evaluation (TEE)

Prior to the clearing of forest areas at the Property, approximately eight acres of forested land were located within 500 feet of the Site. However, following the clearing work conducted in 2024, approximately 1.5 acres of open space are located within 500 feet of the Site. Hence, the simplified TEE evaluation via Table 749-1[7] indicates that the TEE process can be ended. Risk to ecological receptors at the Site appears to be low.

[7] WAC 173-340-7492(2)(a)(ii)

Selecting the cleanup action

Ecology has determined the cleanup actions you selected for the Site meets the substantive requirements of MTCA. The selected cleanup action was discussed, and Ecology provided our concurrence within our NFA Likely letter dated March 22, 2022. The selected cleanup action was excavation and offsite disposal of contaminated soil. Since this cleanup action is considered a permanent cleanup action under MTCA, no disproportionate cost analysis (DCA) was needed.

Implementing the cleanup action

Ecology has determined the cleanup actions you implemented at the Site meets the substantive requirements of MTCA.

Soil Cleanup

Excavation and offsite disposal of contaminated soil and construction materials took place between September 2024 and January 2025. Excavation areas are shown in Figure 5 in Enclosure A and included areas within, and areas to the north, northwest, and northeast of the former shooting range building. The depths of the excavations ranged from 0.5 to 2.5 ft bgs.

Soils were segregated to the extent possible prior to sending them for offsite disposal. The following is from the March 2025 Cleanup Action Construction Completion Report regarding the north sloped wall, where bullets had penetrated soils:

> *Soil from the north wall sloped soil berm was stockpiled separately from the rest of the contaminated material for the recovery of bullets/bullet fragments. The contaminated stockpile resulting from excavation of the north wall sloped soil berm contained a mix of soil, gravel and bullets/bullet fragments. To the extent practicable, coarse gravel was separated from the stockpile by using a series of mechanical screens and the resulting material (segregated gravel) was stockpiled separately for treatment (see Section 4.3.4). The remaining contaminated material (mix of fine gravel, soil and bullets/bullet fragments) was transported offsite for permitted disposal at Chemical Waste Management Subtitle C (Hazardous Waste) Landfill located in Arlington, Oregon, under Waste Management's profile number OR362079. Disposal weight tickets issued by Chemical Waste Management are included in Appendix D. Based on the disposal weight tickets, a total of 47.65 tons of material was disposed of…*

Soils from excavations were pre-treated prior to disposal as discussed in the March 2025 report:

> *Excavated soil from the remedial excavations, pea gravel generated from the French floor drain excavation, and the segregated gravel as described in Section 4.3.3 were stockpiled on the existing concrete floor within the material management area for on-Site soil treatment. The goal of soil treatment was to reduce the lead Toxicity Characteristics Leaching Procedure (TCLP) concentration of excavated material to a level below the hazardous/dangerous waste criteria of 5 milligrams per liter (mg/l) such that the material can be designated as non-hazardous/non-dangerous waste.*
>
> *Prior to performing the on-Site treatment, a representative sample of contaminated soil from the Site was collected by the contractor to perform a bench scale treatability study. The treatability study was performed using different dosage rates of a reagent, EnviroBlend® CS, which is manufactured by EnviroBlend®, a subsidiary of Premier Magnesia, LLC, and primarily consists of course-sized magnesium oxide. The results of the treatability study identified an optimal dosage rate of EnviroBlend® CS at 3 percent by mass of treated soil. The initial TCLP lead concentration in the sample was at 610 mg/l. Following the treatability study using EnviroBlend® CS at 3 percent by mass, the TCLP lead concentration in the sample reduced to 0.41 mg/l, which is below the hazardous/dangerous waste criteria of 5 mg/l…*
>
> *Treatment was performed on the Site by the contractor by adding approximately 3 percent EnviroBlend® CS by mass of the soil being treated. EnviroBlend® CS was imported on Site in 1-ton super sacs and a total of 10 tons were used for the treatment of stockpiled soil. EnviroBlend® CS was mixed with stockpiled soil using an excavator bucket within the materials management area…*
>
> *Based on the results of post-treatment lead TCLP analysis, on site treatment was able to successfully reduce the lead TCLP concentrations to below the hazardous/dangerous waste level (i.e., 5 mg/L). The maximum TCLP lead concentration in post-treatment stockpile soil samples was at 1.2 mg/l…*

Treated soil was transported offsite for disposal at the Republic Service's Roosevelt Regional Landfill located in Roosevelt, Washington. A total of 456.93 tons of material was disposed of at this facility. Disposal receipts were provided within the March 2025 report.

Sufficiency of soil cleanup was verified through confirmation soil sampling. A total of 68 excavation sidewall and 23 excavation base (91 samples total) confirmed the sufficiency of the cleanup work, with no remaining soil samples having lead concentrations exceeding the Method A cleanup level of 250 mg/kg.

The Property is currently being developed with a new solid waste operations facility, including offices, maintenance shops, truck washing facilities, and parking areas.

Long-Term Protectiveness of the Implemented Cleanup Action

Ecology has determined that the completed cleanup work constitutes a permanent cleanup solution under MTCA. All contaminated soil was removed as part of the excavation cleanup work and has been properly disposed of at permitted facilities.

Listing of the Site

Based on this opinion, Ecology will delete the Site from the Contaminated Sites List and add the Site to the No Further Action Sites List.

Limitations of the Opinion

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 chapter 70A.305.040(4) RCW.[8]

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 chapter 70A.305.080 RCW[9] and chapter 173-340-545 WAC.[10]

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 chapter 70A.305.170(6) RCW.[11]

[8] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.040
[9] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.080
[10] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-545
[11] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.170

Termination of Agreement

Thank you for cleaning up the Site under the VCP. This opinion terminates the VCP Agreement governing VCP Project No. XS0008. Ecology will deduct labor charges and the applicable close-out fees from the prepayment deposit and refund the remaining balance to you in the near future.

Questions

If you have any questions about this opinion, please contact me at frank.winslow@ecy.wa.gov or 509-424-0543.

Sincerely,

Frank P. Winslow, LHG
Cleanup Project Manager
Headquarters Section

FPW/tam

Enclosure: A – Site Description, History, and Diagrams

cc by email: Iain Wingard, GeoEngineers iwingard@geoengineers.com
Erik Snyder, Ecology, erik.snyder@ecy.wa.gov
Treasure Mitchell, Ecology, treasure.mitchell@ecy.wa.gov
VCP Fiscal Analyst, Ecology, ecyrevcp@ecy.wa.gov
Ecology Site File

Enclosure A

Site Description, History, and Diagrams

Site Description

Site

The Site is defined by lead, copper, and antimony in soil. The Site is associated with a former police department firing range and is from the historical use of ammunition containing lead, with lesser copper, and antimony.

Area and Property Description

The Site is located on one parcel of land previously occupied by the City of Olympia Police Department shooting range. Parcel #11815210500 (the Property) is an 8.45-acre irregular-shaped parcel that had been occupied by the approximately 18,000 square foot shooting range structure. The Property is being developed with a new solid waste operations facility, including offices, maintenance shops, truck washing facilities, and parking areas.

To the south of the previous structure on the Property is a parking area. Immediately west and north were forested areas. To the east was a topographic depression where dumpsters had been stored by the City of Olympia's waste management department. Beyond the Property to the southwest, south, and east are commercial operations that include Tacoma Screw Products to the east, a medical equipment supplier to the southeast, and a used car dealership to the south and southwest. To the west of the Property is a yard owned by Thurston County Roads Department and to the north is a gravel quarry.

Site History

The Property has been occupied by the City of Olympia Police Department Firing Range since 1987. Prior to 1987, sand and gravel quarrying reportedly took place on the Property between about 1941 and 1980. The sand and gravel quarrying evidently resulted in the irregular topography found on the Property prior to regrading work that was conducted in 2024. Development of the Property with a new solid waste operations facility began in late 2024, concurrent with the Site cleanup work.

Sources of Contamination

The lead, copper, and antimony found in soils and dust at the Site are from the ammunition used at the firing range between 1987 and present. The lead contamination in soils includes aerially and runoff deposited dust as well as soil containing bullets in the north sloped berm inside the structure.

Physiographic Setting

The Site is located in Lacey, Washington, approximately five (5) miles east of downtown Olympia and approximately five (5) miles south of the Nisqually Reach of Puget Sound. The Site is in an area of undulating glacial terrain within the Puget Lowland Physiographic Province.

Surface/Storm Water

The nearest surface water body is Woodland Creek, located about 1,800 feet to the west of the Site. Stormwater is expected to generally flow to the south to southwest at the Site, though topography was quite variable and local stormwater flow directions varied. The Property surface topography ranged in elevation from 157 feet above mean sea level (ft amsl) at the southwest corner to 216 ft amsl to the northeast (an approximately 60 feet of rise across 700 feet of distance). There are two topographic “bowls” on the Property, a western bowl recently occupied by the firing range, and an eastern bowl occupied by dumpsters in the Google Earth aerial photo dated June 26, 2021,(see oblique aerial photograph in Enclosure A). The western bowl appeared to drain to the south and then to the west, and the eastern bowl appeared to be a topographic depression with a bottom elevation at about 162 ft amsl. These topographic bowls appear to have likely originated from sand and gravel mining at the Property. The Property was regraded in 2024.

Ecological Setting

The Site has approximately 1.5 acres of forest within 500 feet. Hence, under MTCA Table 749-1, the TEE process can be ended. Risk to ecological receptors appears to be low.

Geology and Hydrogeology

The following text is from the February 2022 RI/FS/CAP report.

> *Two primary geologic units are mapped at and near the Site that include Vashon recessional outwash (Qgo) and Vashon advance outwash (Qga). Both geologic units are glacial deposits. Advance outwash deposits were deposited by streams and rivers emanating from the glaciers during periods of glacial advance. After deposition, the advance outwash soils were overridden by the advancing glacier. Recessional outwash deposits were deposited during period of glacial retreat. Because the advance outwash deposits are glacially overridden, they are generally more compacted and consolidated than the overlying recessional outwash. Locally, the two outwash deposits are similar in composition, generally consisting of sand and gravel with variable silt content.*

Groundwater was found in piezometers at the Site at depths ranging from 10 to 28 ft bgs. Risk to groundwater from the lead in soils is considered low.

Water Supply

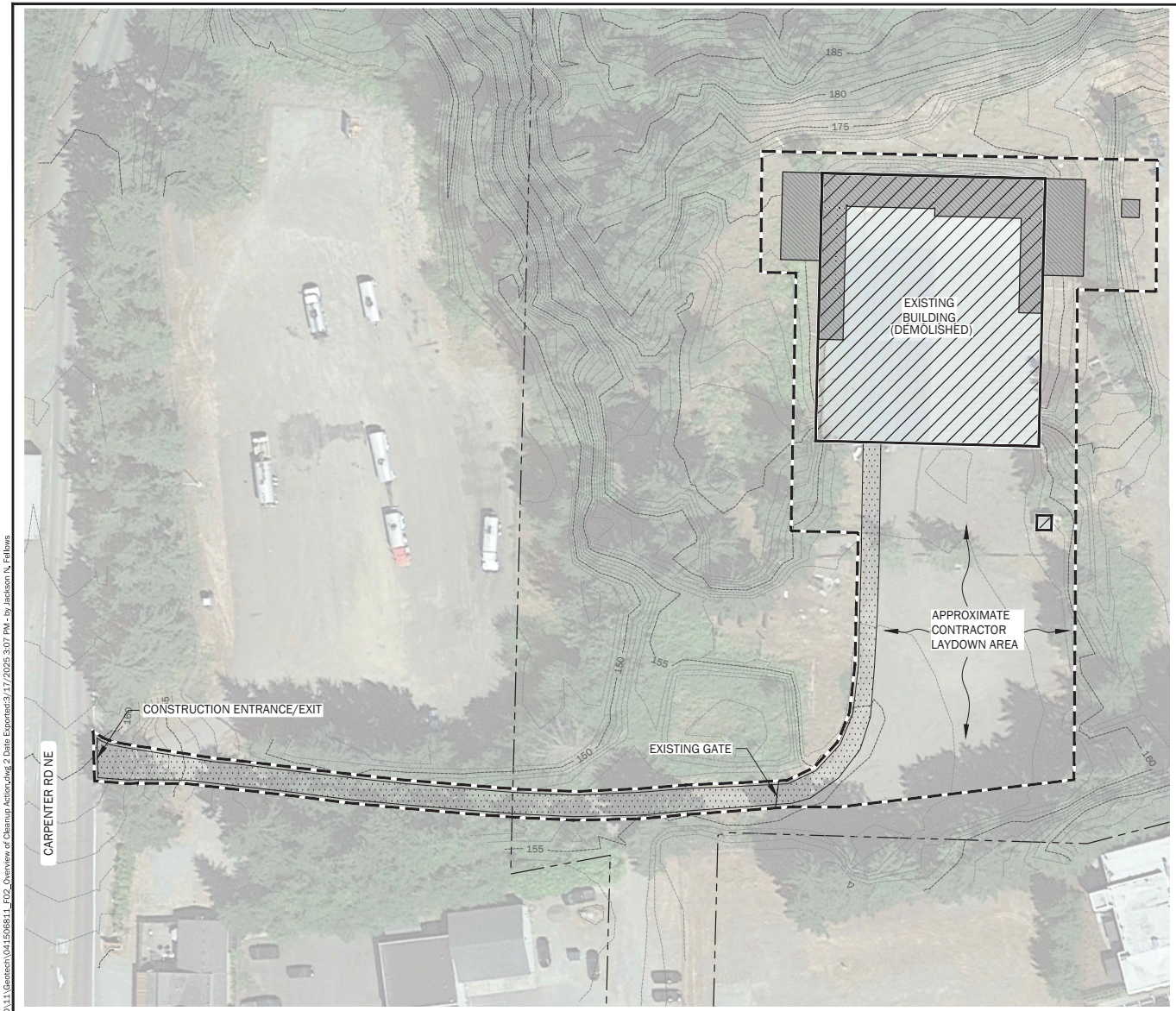
Potable water is provided to the subject property by the City of Lacey. The Site is on the edge of a wellhead protection zone that is located approximately 2,800 feet to the southeast. Several Group A/B wells are located in the vicinity of the Site, including one well labeled "Northwest Foreign Auto Parts" which was mapped on the eastern part of the Property. This well location appears to likely have been incorrectly mapped and appears to not be located on the Property. Based on the nature of the contamination at the Site, risks to water supply wells are considered low.

Extent of Contamination

The extent of soil contamination was sufficiently defined during the remedial investigation (RI) for the identification of cleanup levels and for the development of a cleanup action plan. The vertical extent of lead in soils was limited to approximately 30 inches bgs, and the lateral extent had been defined to within the structure and in soils to the east and west of the structure where runoff from the roof had carried lead-containing dust. Confirmation soil sampling was conducted during cleanup in all areas with lead contaminated soils to verify that all contaminated soils had been removed.

Site Diagrams

The following figures are from the Cleanup Action Construction Completion Report dated March 28, 2025:



LEGEND

- CITY OF OLYMPIA PROPERTY BOUNDARY
- APPROXIMATE PROJECT LIMITS
- EXISTING CONTOUR (FEET NGVD 29)
- REMEDIAL EXCAVATION LIMIT
- BUILDING DEMOLITION LIMIT
- APPROXIMATE INTERNAL HAUL ROUTE

Coordinate System: WA State Plane, North Zone, NAD83, US Foot

N

0 60

Feet

Overview of Cleanup Action

Carpenter Road Site Cleanup Action
Lacey, Washington

GeoEngineers

Figure 2

LEGEND

- CITY OF OLYMPIA PROPERTY BOUNDARY
- APPROXIMATE PROJECT LIMITS
- EXISTING CONTOUR (FEET NGVD 29)
- EXISTING CHAIN LINK FENCE
- POWER VAULT
- TRANSFORMER
- LIGHT JUNCTION BOX
- LIGHT POLE
- TELECOMMUNICATIONS PEDESTAL
- FIRE HYDRANT
- WATER VALVE
- SANITARY SEWER/SEPTIC MAN HOLE
- SANITARY SEWER/SEPTIC CLEAN OUT
- FIR OR DECIDUOUS TREE AS NOTED
- SANITARY SEWER
- WATER LINE
- UNDERGROUND POWER
- OVERHEAD POWER
- UNDERGROUND TELECOMMUNICATIONS
- ASPHALT
- GRAVEL

Coordinate System: WA State Plane, North Zone, NAD83, US Foot

N

0 60

Feet

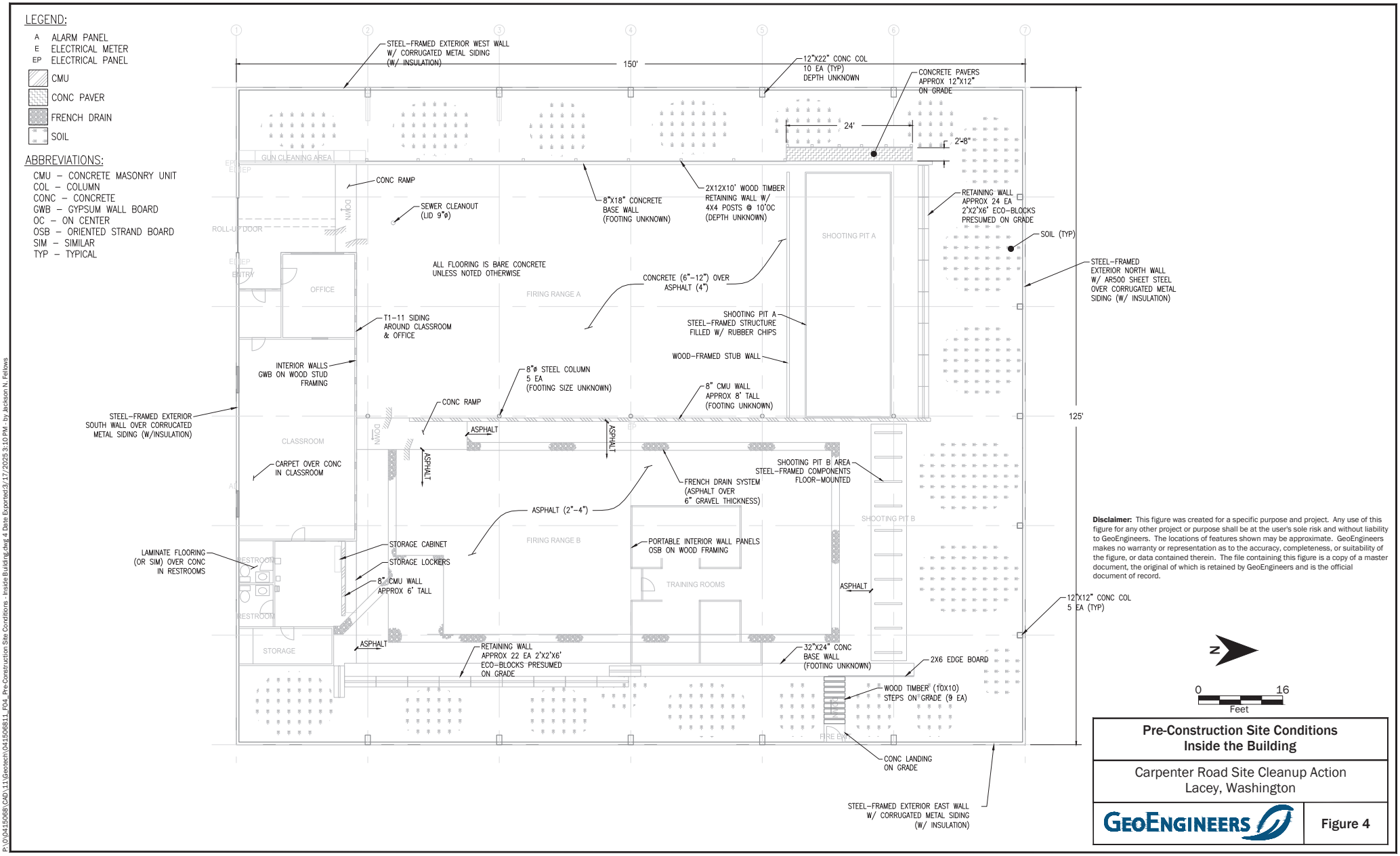
Pre-Construction Site Conditions Outside the Building

Carpenter Road Site Cleanup Action
Lacey, Washington

GeoEngineers

Figure 3

P:\0\04150683\CAD\11\Geotech\04150683-11_F03_Pre-Construction Site Conditions - Outside Building.dwg 3 Date Exported:3/17/2025 3:09 PM - by Jackson N. Fellows



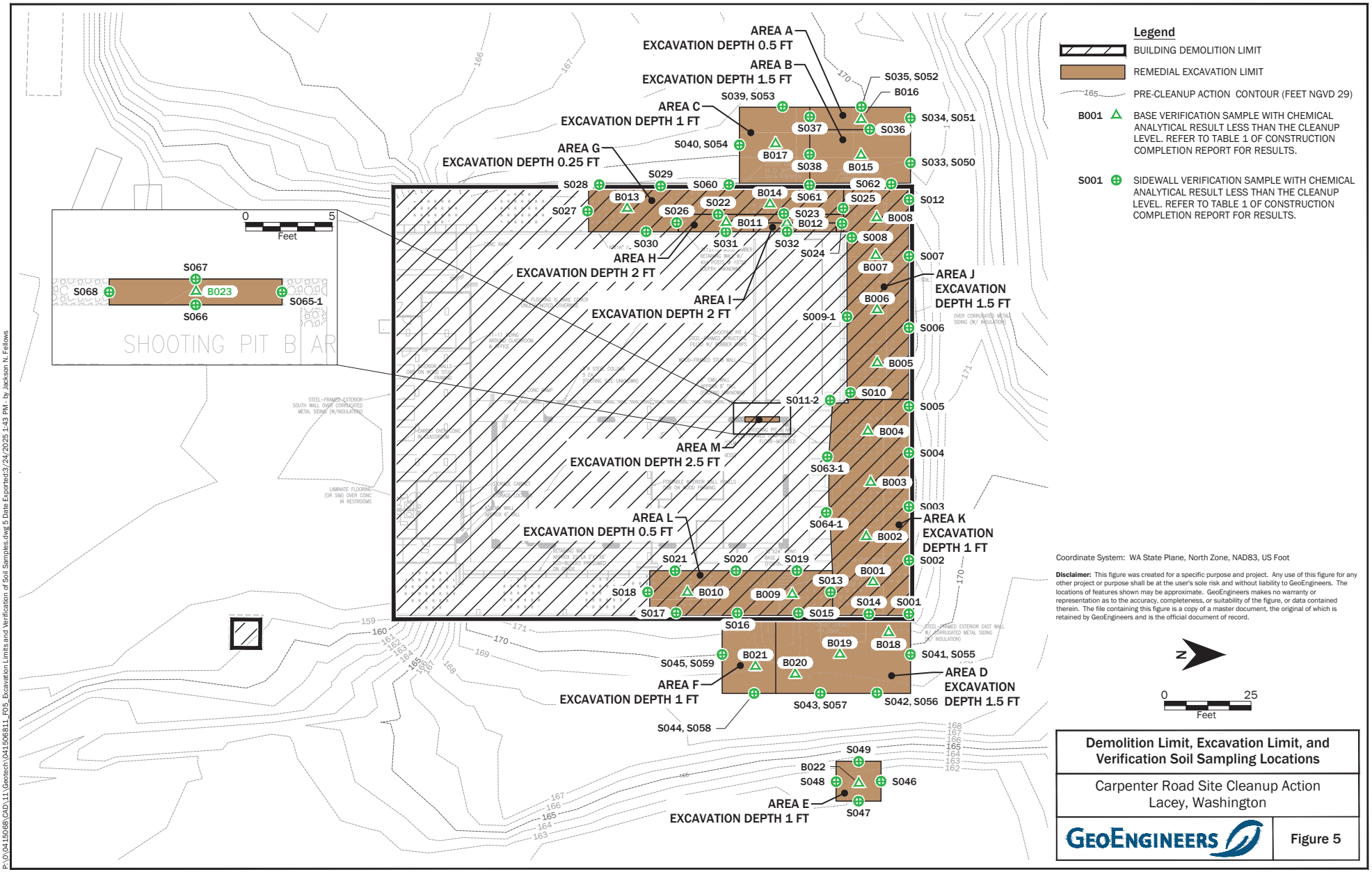
Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

Pre-Construction Site Conditions Inside the Building

Carpenter Road Site Cleanup Action
Lacey, Washington

GeoEngineers

Figure 4



Demolition Limit, Excavation Limit, and Verification Soil Sampling Locations

Carpenter Road Site Cleanup Action
Lacey, Washington

GeoEngineers

Figure 5

P:\0\04150668\CAD\11\Geotech\04150681l_F05_Excavation Limits and Verification of Soil Samples.dwg 5 Date Exported:3/24/2025 1:43 PM - by Jackson N. Fellows