STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

March 16, 2023

John Parker
Central Valley School District
2218 North Molter Road
Liberty Lake, WA 99019

Re: Opinion on Proposed Cleanup of the following Site:

Site Name:	Spokane Gun Club
Site Address:	19615 E Sprague Ave #9656, Spokane Valley
Cleanup Site ID:	14851
Facility/Site ID:	50340
VCP Project ID:	EA0374

Dear John Parker:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the Spokane Gun Club facility (Site) under the Voluntary Cleanup Program (VCP)[1]. This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70A.305[2] RCW.

Issue Presented and Opinion

Ecology has determined that, upon completion of your proposed cleanup, no further remedial action will likely be 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, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided as follows.

[1] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Voluntary-Cleanup-Program
[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305

Site Description

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

- Arsenic into the soil.
- Lead into the soil.
- Naphthalenes into the soil.
- Polycyclic aromatic hydrocarbons (PAHs) into the soil.

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

Please note 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 following documents:

1. Hart-Crowser, Inc., Remedial Investigation/Feasibility Study, Spokane Gun Club, September 20, 2021.
2. Hart-Crowser, Inc., Results of Surface Soil Sampling, Test Pits 66, 67, and 68, February 14, 2019.
3. Hart-Crowser, Inc., Interim Action Report, Former Spokane Gun Club Property, January 4, 2019.
4. Hart-Crowser, Inc., Focused Phase II Environmental Site Assessment; North Henry Road and East Sprague Avenue, Greenacres, Washington, October 22, 2018.
5. Hart-Crowser, Inc., Phase I Environmental Site Assessment; North Henry Road and East Sprague Avenue, Greenacres, Washington, October 12, 2018.

You can request these documents by filing a records request.[3] 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 the Site webpage.[4]

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

[3] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
[4] https://apps.ecology.wa.gov/cleanupsearch/site/14851

Analysis of the Cleanup

Ecology has concluded that, upon completion of your proposed cleanup, **no further remedial action** will likely be necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

Characterizing 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.**

Beginning in 2018, soil characterization consisting of shallow samples, test pits, and borings indicated the presence of arsenic, lead, PAHs, and naphthalenes impacting soil from the ground surface to a maximum depth of approximately 10 feet below ground surface (bgs), with the largest volume of impacted soil occurring from 0 to 2 feet bgs. Select soil samples were also analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) approved under WAC 173-300-110(3)(a) for testing dangerous waste criteria, which indicated the presence of leachable lead and designates the soil as a Washington State Dangerous Waste (DW) under WAC 173-303-100. Approximately 3,906,295 cubic feet (144,684 cubic yards) of soil exceeding MTCA Method A cleanup levels and 152,000 cubic feet (5,630 cubic yards) of soil exceeding DW toxicity characteristic occur in an area extending approximately 40 acres. Groundwater at the Site occurs approximately 98 feet bgs and is considered unlikely to be at risk of impact from contaminated soil due to the age of release and observed migration depth of contaminants.

Establishing cleanup standards

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

For soil, the cleanup levels were established using MTCA Method A and are based on protection of groundwater. The current land use is classified as light industrial (LI) by Spokane County; however, potential future land use includes residential development. Therefore, MTCA Method A unrestricted land use cleanup levels were deemed appropriate. The point of compliance for soils is throughout the lateral and vertical extent of the Site. This is the standard point of compliance. The cleanup levels are as follows:

Contaminant	Cleanup Level (mg/kg)
Arsenic	20
Lead	250
Naphthalenes	5
PAHs (based on toxicity equivalency normalized to	0.1

Contaminant	Cleanup Level (mg/kg)
benzo(a)pyrene)	

mg/kg = milligrams per kilogram

Selecting the cleanup action

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

The proposed cleanup action includes the following components:

- Excavation of all soils with concentrations of lead or PAHs exceeding MTCA Method A cleanup levels
- Treatment of soils with total lead concentrations greater than 3,250 mg/kg using a stabilizing reagent to limit solubility and mobility of DW constituents
- Confirmation sampling and analysis of stabilized soils using the TCLP method to demonstrate soils no longer exhibit the DW toxicity characteristic of lead exceeding 5 mg/L
- Construction of a below-grade, on-site repository with an area of approximately 5 acres and up to 30 feet deep
- Backfilling of the repository with stabilized soils and all other soils with contaminant concentrations exceeding MTCA Method A cleanup levels
- Installation of an engineered cap consisting of a high-density polyethylene (HDPE) liner, drainage controls, and vegetated cover
- Recording of institutional controls to restrict land use, protect the remedial actions, and define procedures for operation and maintenance of all engineered controls

Ecology concurs with the proposed cleanup action under MTCA. This determination is based on the following requirements:

- Excavated soils will be properly screened and segregated prior to treatment so that soils with contaminants exceeding the MTCA Method A cleanup levels and soils exhibiting the DW toxicity characteristic will not be mixed or diluted with clean soil
- The proposed treatability study will provide sufficient evidence that the stabilizing reagent is effective in treating soils to remove the DW toxicity characteristic, and the proposed remediation level of 3,250 mg/kg is suitable for ensuring that soils with lead concentrations less than the remediation level will not exhibit the toxicity characteristic, otherwise the waste will be subject to the land disposal restrictions described in WAC 173-303-140

- A representative number of composite soil samples are collected and analyzed from each treated soil stockpile to ensure that the DW characteristic has been removed prior to land disposal. Ecology's Tacoma Smelter Plume Model Remedies Guidance[5] provides recommendations for waste sampling based on stockpile volume and contaminant concentration
- The cleanup action allows for sufficient compliance monitoring as described in WAC 173-340-410, including protection monitoring during implementation of the cleanup action, performance monitoring to ensure the completed cleanup was effective in meeting the cleanup standards established for the Site, and confirmational monitoring to ensure the long-term protectiveness of the cleanup action once cleanup standards have been attained

In addition, all soils must be managed in accordance with the Solid Waste Handling Standards in WAC 173-350 and Dangerous Waste Regulations in WAC 173-303, or qualify for an exclusion. The conditions of these rules and their exclusions include:

The Solid Waste Handling Standards and requirements for limited purpose landfills in WAC 173-350 do not apply to:

- -020(2)(x) Management of soil within a contaminated site as part of a removal or remedial action under Chapter 70.105D (MTCA)
- -020(2)(y) Contaminated soil, as defined in WAC 173-350-100, removed from the ground, not altered by additional contaminants, and placed or stored back at or near the location of generation within a project site. This exclusion is not meant to allow distant movement of materials within large or linearly long project sites to new locations that could potentially create new environmental impacts

WAC 173-303-170(2)(b) describes the conditions for onsite DW Treatment by Generator[6] that must be met in order to avoid being subject to Hazardous Waste Treatment, Storage, and Disposal Facility (TSDF) permitting requirements. To qualify for an exemption to these requirements and the land disposal restrictions described in WAC 173-303-140, the following conditions must be met:

- Treating waste in accumulation tanks, containers, or containment buildings
- Maintaining a log with the dates and amount of waste treated on-site
- Complying with the requirements of WAC 173-303-283(3) (Performance standards) and the conditions for exemption in WAC 173-303-174 (Satellite accumulation area regulations), 173-303-200, and 173-303-201, which include waste accumulation regulations and emergency planning guidelines

[5] https://apps.ecology.wa.gov/publications/SummaryPages/1909101.html
[6] https://apps.ecology.wa.gov/publications/documents/2004017.pdf

Electronic submittal of all sampling data into Ecology's Environmental Information Management (EIM) database[7] is a requirement in order to receive a final Ecology opinion for this Site. The Toxics Cleanup Program Policy 840[8] describes data submittal requirements. Please visit the EIM Submit Data webpage for data submittal instructions.

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 RCW 70A.305.040(4).

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 proposed will be substantially equivalent. Courts make that determination. *See* RCW 70A.305.080 and WAC 173-340-545.

Opinion is limited to proposed cleanup

This letter does not provide an opinion on whether further remedial action will actually be necessary at the Site upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the Voluntary Cleanup Program (VCP).

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.

Contact Information

Thank you for choosing to clean up the Site under the VCP. As you conduct your cleanup, please do not hesitate to request additional services. We look forward to working with you.

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[7] https://ecology.wa.gov/eim
[8] https://fortress.wa.gov/ecy/publications/SummaryPages/1609050.html

For more information about the VCP and the cleanup process, please visit our webpage [9]. If you have any questions about this opinion, please contact me by phone at 509-342-5564 or e-mail at ted.uecker@ecy.wa.gov.

Sincerely,

Ted M. Uecker
ERO Toxics Cleanup Program

tmu:hg

Enclosures (1): A – Site Description, history, and diagrams

cc: Jay Rowell, CVSD
John Haney, Haley & Aldrich
Nicholas Acklam, Ecology
Eric McConnell, Ecology

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

Enclosure A

Site Description, History, and Diagrams

Site Description

The Site is located in Spokane Valley near the intersection of E Sprague Avenue and N Henry Lane, and consists of 40.13 acres of undeveloped land adjacent to the Spokane Gun Club trap/skeet range. The range has been in operation since 1948. The nature and extent of contamination involves arsenic, lead, and PAHs in shallow soil trending NW to SE along the shooting range boundary, associated with lead shot and clay pigeon debris. Previous shot recovery activities resulted in several soil stockpiles along the boundary. The property was purchased by the Central Valley School District in 2018 and separated into two cleanup units. The northwestern parcel (55174.9186) was characterized and remediated during the initial investigation. It was given a No Further Action determination, and was subsequently developed into Ridgeline High School. The remaining parcels (55174.9011, 55174.9012, 55174.9014, 55174.9043, 55174.9042, 55174.9022, and 55174.9021) were characterized and are awaiting cleanup. The shooting range remained in operation until the second phase of cleanup began in July 2021.

Site soils generally consist of silty gravel with sand, clay, and occasional cobbles to a depth of nine (9) feet below ground surface (bgs). Site geology includes Pleistocene Lake Missoula alluvium consisting of poorly-to-moderately sorted boulders, cobbles, gravel, and sand with interbedded silt lenses. Paleozoic Hauser Lake Gneiss occurs approximately sixty (60) feet bgs. The Site is within the boundary of the Spokane Valley-Rathdrum Prairie (SVRP) Aquifer, with the static groundwater level occurring at approximately ninety-eight (98) feet bgs and variable groundwater flow direction.

Site History

A Phase I environmental site assessment (ESA) was conducted in August 2018, and identified several recognized environmental conditions (RECs), including:

- Four stockpiles of unknown origin consisting of soil, wood, concrete, and clay target/shotgun shell debris
- Shallow soil samples from the concurrent Phase II ESA containing arsenic, lead, and polycyclic aromatic hydrocarbon (PAH) concentrations exceeding the MTCA Method A cleanup levels and lead exceeding WA State DW criteria
- Shot recovery areas on the shooting range property, which included settling ponds contained in earthen berms

Phase II ESA activities were conducted concurrent to the Phase I from July 2018 to February 2021, and initially included excavation of 23 test pits and collection of soil samples between 6 and 12 inches below ground surface (bgs) in each test pit. Clay pigeon debris was encountered in three of the test pits, but no lead shot was observed. The test pits were backfilled with the excavated material. All soil samples were analyzed

for metals, while samples from test pits containing clay pigeon debris were also analyzed for PAHs. Samples from 12 inches bgs were held for analysis until contaminants were detected in the 6-inch bgs samples. Five samples from four test pits (TP-12, TP-17, TP-18, and TP-19) contained lead concentrations exceeding the MTCA Method A unrestricted soil cleanup level at 6 inches bgs. Only TP-19 exceed the lead cleanup level at 12 inches bgs. Six soil samples from four test pits (TP-17, TP-18, TP-19, and TP-20) contained PAHs exceeding the cleanup level, with TP-18 and TP-19 also exceeding the cleanup level at 12 inches bgs. The arsenic concentration in the 6-inch bgs sample from TP-19 also exceeded the cleanup level. Additional Phase II ESA activities conducted between 2018 and 2021 included an additional 69 test pits (TP-28 through TP-63 and TP-66 through TP-98), 19 direct-push soil borings, and 20 sonic soil borings, all completed to between 6 inches and 9 feet bgs.

An interim cleanup action was conducted between September and November 2018, which included excavation of four additional test pits, stockpile removal, and remediation of lead-contaminated soil near test pit TP-12. TP-24 through TP-27 were excavated near TP-12 to constrain the extent of lead contamination identified in the Phase II. Samples collected at 6 inches bgs in the three test pits were below the MTCA Method A cleanup level. Approximately 19.6 tons of soil were excavated from a 400 square foot area around TP-12 to a depth of approximately 8 inches. Two discrete samples were collected from the excavation bottom, as well as a composite sample from the temporary stockpile. All samples were below the lead cleanup level, and the stockpile was disposed at a Subtitle D facility.

Composite samples were collected from the four unknown stockpiles (SP-1 through SP-4) identified in the Phase I. These samples were analyzed for lead, arsenic, total petroleum hydrocarbons, and PAHs. Based on the results of these analyses, the stockpile samples were also analyzed for RCRA 8 metals, leachable lead, diesel- and oil-range hydrocarbons, VOCs, and one sample for PCBs. SP-1 (approximately 358 tons) contained arsenic above the MTCA Method A cleanup level and leachable lead above the Washington State Dangerous Waste (DW) criteria, and SP-2 (approximately 84 tons) contained diesel and oil above cleanup levels as well as leachable lead. Both were disposed at a Subtitle C landfill. SP-3 (approximately 91 tons) contained non-leachable lead above the cleanup level and was disposed at a Subtitle D landfill, and SP-4 did not exceed cleanup levels for any contaminants. Discrete soil samples were collected from beneath each stockpile to confirm that no contaminants remained following excavation. Surface soil samples were collected between 0-6 inches bgs from the locations of TP-64 through TP-68 to confirm that the NW parcel where the high school development is planned met MTCA cleanup standards. All samples were below the respective cleanup levels. A chain-link fence was installed to separate the Gun Club property (west), remaining contaminated soil (south), and the future high school property (northwest), which was given an NFA determination from Ecology during the initial investigation process.

Based on the characterization data from the Phase II ESA, it was determined that a total lead concentration of 3,550 mg/kg or greater would result in a leachable lead concentration exceeding the DW criteria. Therefore, a DW remediation level of 3,250 mg/kg was established for the conceptual site model (CSM) to assess the potential contaminant exposure pathways and receptors. The contaminants of concern for the CSM included arsenic, lead, and PAHs, transport mechanisms and exposure pathways evaluated included infiltration, erosion/stormwater, erosion/wind, erosion/anthropogenic transport, and bioaccumulation.

A feasibility study (FS) was completed in September 2021 to evaluate remedial alternatives. The estimated volume of contaminated soil used in the FS included 152,000 cubic feet (5,630 cubic yards) of soil exceeding the WA State DW criteria, and 3,906,600 cubic feet (144,684 cubic yards) of hazardous waste soil exceeding MTCA cleanup levels. The total volume of contaminated soil was estimated at 4,058,600 cubic feet (150,313 cubic yards) to a total depth of 10 feet bgs.

Remedial technologies evaluated in the FS report included:

- Soil washing- physical and chemical removal of contaminants with washing fluids
- Phytoremediation- stabilization and uptake of contaminants by plants
- In Situ or Ex Situ solidification/stabilization- mixing of contaminated soils with a binding agent to prevent leaching of contaminants
- Thermal treatment- combustion of volatile organic contaminants

Remedial techniques evaluated in the FS report included:

- Excavation and disposal- removal, potential treatment, and placement of soil in an on-site repository or offsite waste disposal facility
- Capping- installation of an engineered barrier to prevent direct contact and stormwater infiltration

The remedial alternatives were screened for protectiveness, permanence, long-term effectiveness, short-term risk, implementability, consideration of public concern, restoration timeframe, and cost. These criteria were applied to the following scenarios:

- Alternative 1A- excavation of materials with contaminants above cleanup levels, stabilization of lead in materials with lead greater than 3,250 mg/kg, confirmation sampling, and disposal offsite at a Subtitle D landfill
- Alternative 1B- excavation of materials with contaminants above cleanup levels, disposal of dangerous waste at a Subtitle C landfill, disposal of all other materials at a Subtitle D landfill
- Alternative 2A- excavation of materials with contaminants above cleanup levels, stabilization of lead in materials with lead greater than 3,250 mg/kg, confirmation sampling, construction of a below-grade, on-site repository, backfill of treated and untreated materials in the repository, installation of an engineered cap, and institutional controls
- Alternative 2B- excavation of materials with contaminants above cleanup levels, confirmation sampling, construction of a below-grade, on-site repository, backfill

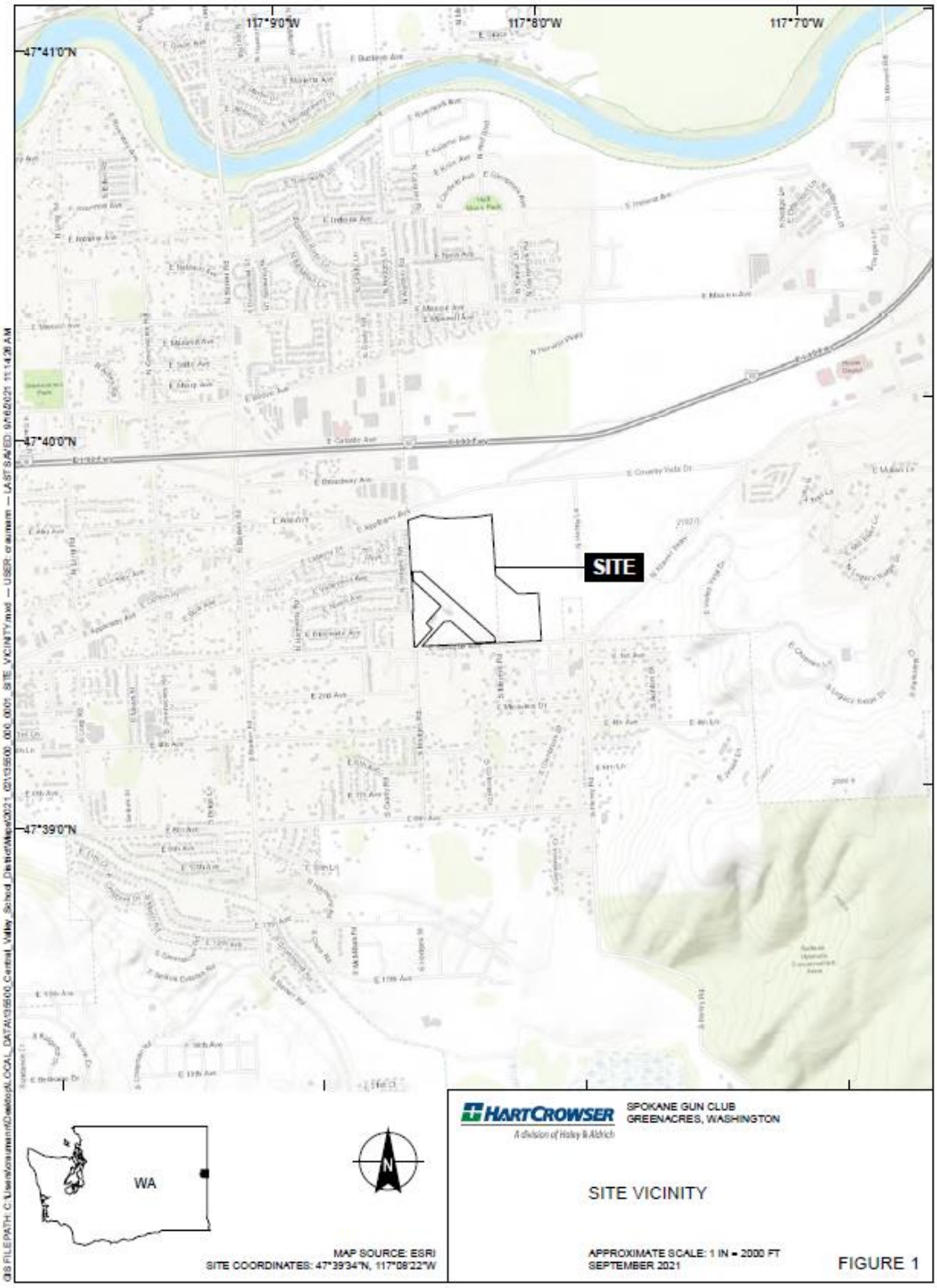
of hazardous materials in the repository, installation of an engineered cap, disposal of dangerous waste materials at Subtitle C landfill, and institutional controls

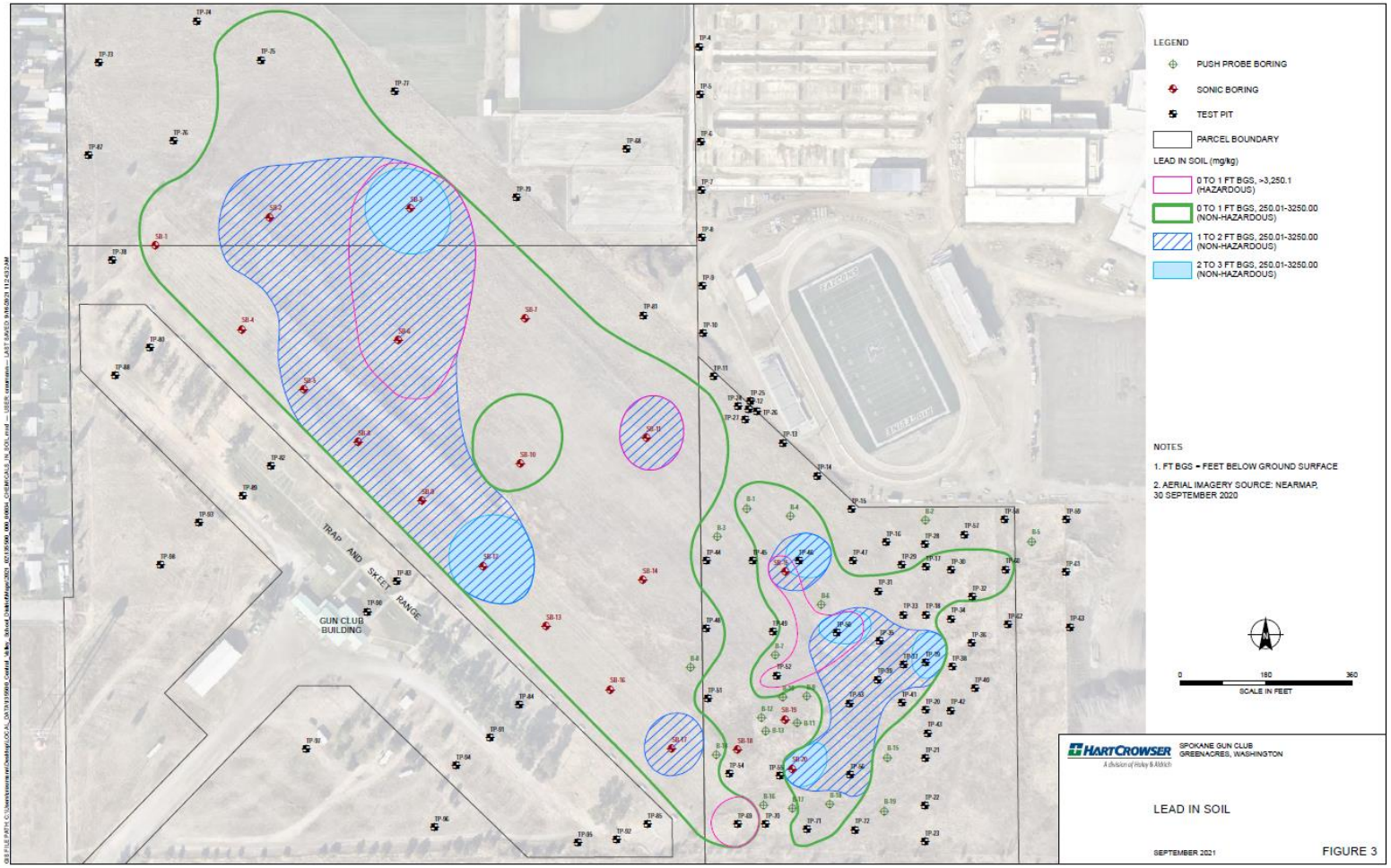
- Alternative 2C- excavation of materials with contaminants above cleanup levels, stabilization of lead in materials with lead greater than 3,250 mg/kg, confirmation sampling, construction of an above-grade, on-site repository, backfill of treated and untreated materials in the repository, installation of an engineered cap, and institutional controls
- Alternative 2D- excavation of materials with contaminants above cleanup levels, confirmation sampling, construction of an above-grade, on-site repository, backfill of hazardous materials in the repository, installation of an engineered cap, disposal of dangerous waste materials at Subtitle C landfill, and institutional controls

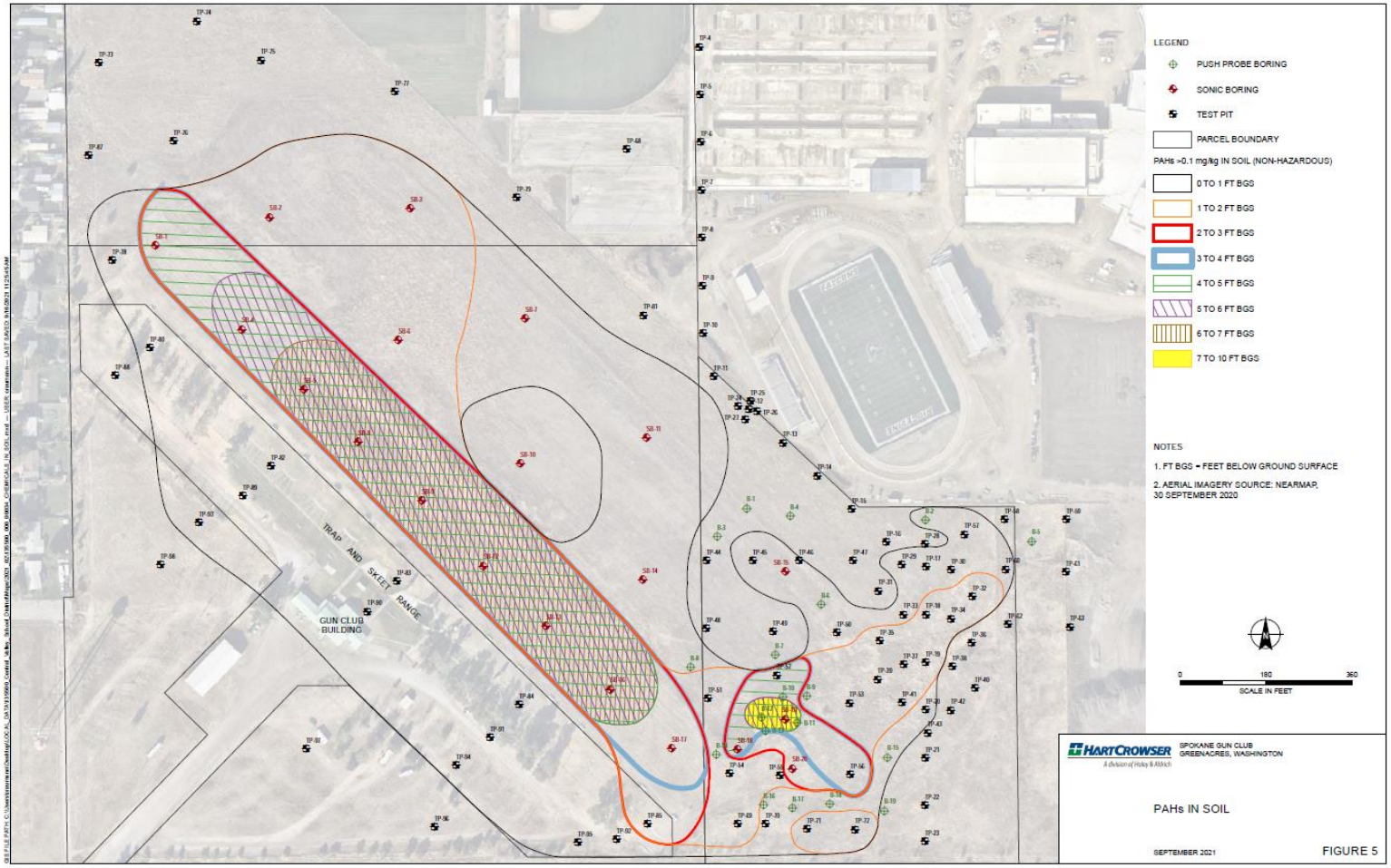
Alternative 2A was selected and will be detailed in the upcoming cleanup action plan.

(Hart-Crowser, Inc., 2018-2021)

Site Diagrams




LEGEND
PUSH PROBE BORING
SONIC BORING
TEST PIT
PARCEL BOUNDARY
LEAD IN SOIL (mg/kg)
0 TO 1 FT BGS, >3,250.1 (HAZARDOUS)
0 TO 1 FT BGS, 250.01-3250.00 (NON-HAZARDOUS)
1 TO 2 FT BGS, 250.01-3250.00 (NON-HAZARDOUS)
2 TO 3 FT BGS, 250.01-3250.00 (NON-HAZARDOUS)
NOTES
1. FT BGS = FEET BELOW GROUND SURFACE
2. AERIAL IMAGERY SOURCE: NEARMAP, 30 SEPTEMBER 2020
0
180
360
SCALE IN FEET
TRAP AND SKEET RANGE
GUN CLUB BUILDING
HARTCROWSER
A division of Haley & Aldrich
SPOKANE GUN CLUB
GREENACRES, WASHINGTON
LEAD IN SOIL
SEPTEMBER 2021
FIGURE 3


LEGEND
PUSH PROBE BORING
SONIC BORING
TEST PIT
PARCEL BOUNDARY
PAHs >0.1 mg/kg IN SOIL (NON-HAZARDOUS)
0 TO 1 FT BGS
1 TO 2 FT BGS
2 TO 3 FT BGS
3 TO 4 FT BGS
4 TO 5 FT BGS
5 TO 6 FT BGS
6 TO 7 FT BGS
7 TO 10 FT BGS
NOTES
1. FT BGS = FEET BELOW GROUND SURFACE
2. AERIAL IMAGERY SOURCE: NEARMAP, 30 SEPTEMBER 2020
0
180
360
SCALE IN FEET
TRAP AND SKEET RANGE
GUN CLUB BUILDING
HARTCROWSER
A division of Haley & Aldrich
SPOKANE GUN CLUB
GREENACRES, WASHINGTON
PAHs IN SOIL
SEPTEMBER 2021
FIGURE 5