Final
Phase II Environmental Site Assessment Report
Rockwell Apartments
Spokane Valley, WA

Prepared for:

U.S. Environmental Protection Agency, Region 10
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Phase II Environmental Site Assessment Report,
Rockwell Apartments
Spokane Valley, WA

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Acronyms and Abbreviations

%R	percent recovery
ABCA	Analysis of Brownfields Cleanup Alternatives
Alta	Alta Science & Engineering, Inc.
ASTM	ASTM International
bgs	below ground surface
DQO	data quality objective
Ecology	Washington Department of Ecology
EPA	U.S. Environmental Protection Agency
ERG	Eastern Research Group, Inc.
ESA	Environmental Site Assessment
IDW	investigation derived waste
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LESE	Limited Environmental Site Evaluation
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
MTCA	Washington Model Toxics Control Act
Pace	Pace Analytical
ppm	parts per million
QAPP	Quality Assurance Project Plan
QAO	Quality Assurance Officer
QA/QC	quality assurance/quality control
r^2	coefficient of determination
REC	recognized environmental condition
RPD	relative percent difference
TBA	Targeted Brownfields Assessment
USCS	Unified Soil Classification System
WA	Washington
WAC	Washington Administrative Code
XRF	X-Ray Fluorescence

Executive Summary

The U.S. Environmental Protection Agency (EPA) Region 10 Targeted Brownfields Assessment Program engaged Eastern Research Group, Inc. (ERG) to conduct a Targeted Brownfields Assessment (TBA) of the Rockwell Apartments Site located at 14502, 14503, 14517, and 14526 East Rockwell Avenue in Spokane Valley, Washington (WA). ERG partnered with Alta Science & Engineering, Inc. (Alta) to perform the assessment. The TBA included a Phase II Environmental Site Assessment (ESA) in January 2025 to acquire information regarding the nature of contamination (if present) and risks posed by that contamination to support future cleanup of the Site.

The subject property is located in Spokane Valley, WA, and consists of four parcels totaling 3.2 acres (Figure 1). The TBA Site is currently owned and operated by Community Frameworks. The Site is a residential complex comprised of five 2-story apartment buildings (with 28 total units), a garage building, two carports, a pool, paved parking, driveways, and landscaping.

The property was used as an orchard from at least 1938 until the late 1950s. Site use between the late 1950s and late 1960s is unknown but is depicted as undeveloped in aerial photographs until the current apartment complex was constructed between 1967 and 1969. In 2021, ALLWEST conducted a Phase I ESA and concurrent Limited Environmental Site Evaluation (LESE) of the northwest portion of the Site (parcel number 45022.5301) and identified arsenic in soils as a recognized environmental condition (REC), with arsenic detected in two soil samples at concentrations exceeding the Washington Model Toxics Control Act (MTCA) Method A Soil Cleanup Level for Unrestricted Use of 20 milligrams per kilogram (mg/kg).

In November 2024, Washington Department of Ecology (Ecology) collected 22 soil samples from the Site. The grab samples were dried and sieved for subsequent analysis with a hand-held X-Ray Fluorescence (XRF) detector for arsenic and lead. The XRF results identified 20 samples with arsenic levels exceeding the MTCA Method A cleanup level of 20 parts per million (ppm) and 3 samples that exceeded the MTCA Method A cleanup threshold for lead of 250 ppm.

ERG's Phase II ESA activities included subsurface soil sampling to characterize the current nature and extent of previously identified lead and arsenic impacts at the Site and a confirmatory analysis of the XRF soil screening samples collected by Ecology in November 2024.

Based on field observations, available information, and Site-specific data, ERG concludes the following:

- **Arsenic in Soil.** Arsenic was detected in subsurface soils at concentrations exceeding the MTCA Method A Cleanup Criteria of 20 mg/kg in certain portions of the Site. Average arsenic concentrations for surface soil samples collected from 0–0.5 feet bgs from the northwest and northeast portions of the Site (parcels 45022.5301 and 45022.5302) exceed the MTCA Method A Cleanup Level slightly, at 22.2 mg/kg and 22.9 mg/kg, respectively. One sample collected from 0.5-2 feet bgs on the northwest parcel (45022.5301) exceeded 40 mg/kg.
- **Lead in Soil.** Lead was not detected in subsurface soils at concentrations exceeding the MTCA Method A Cleanup Criteria.

Based on the findings and conclusions summarized above, ERG recommends the development of an Analysis of Brownfields Cleanup Alternatives (ABCA) to identify and evaluate cleanup alternatives to address arsenic contamination in Site soils in consideration of future Site uses.

1.0 Introduction

1.1 Purpose and Involved Parties

Eastern Research Group, Inc. (ERG) was contracted by the U.S. Environmental Protection Agency (EPA) on behalf of Community Frameworks (the Applicant) to conduct a Targeted Brownfields Assessment (TBA) of the Rockwell Apartments Site located at 14502, 14503, 14517, and 14526 East Rockwell Avenue (the "Site" or the "property") in Spokane Valley, Washington (WA). EPA's TBA program helps states, tribes, municipalities, and other eligible entities minimize the uncertainties of contamination often associated with brownfields sites. This program supplements other efforts under the Brownfields Program to promote the cleanup and redevelopment of brownfields sites. This report summarizes Phase II Environmental Site Assessment (ESA) activities that ERG completed in January 2025 in conformance with ASTM International's (ASTM's) E1903-19 *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process* (ASTM 2019).

ERG was contracted to complete this work under EPA Contract No. 68HERH19D0017, Task Order 16. ERG subcontracted with Alta Science & Engineering, Inc. (Alta) to provide additional technical and field support in conducting the Phase II ESA.

The purpose of the Phase II ESA was to characterize the current nature and extent of previously identified lead and arsenic impacts at the Site, and to acquire information regarding the nature of contamination (if present) and risks posed by that contamination to support future clean-up and reuse of the Site.

1.2 Background

The Rockwell Apartments Site, located within the City of Spokane Valley in eastern WA, totals 3.2 acres and is comprised of four parcels: Spokane County tax lots 45022.5301, 45022.5302, 45022.5401, and 45022.5402. The Site has been owned by Community Frameworks since 2009. Spokane County Assessor records refer to the property as Rockwell Apartments and East Valley Manor (Spokane County, 2025). The Site is a residential complex comprised of five 2-story apartment buildings (with 28 total units), a garage building, two carports, a pool, paved parking, driveways, and landscaping. The Site layout is shown in Figure 1.

Based on historical review, the property was used for agriculture until the apartment complex was constructed. Historic aerial photographs and topographic maps show the Site as an orchard from at least 1938 until the late 1950s. A 1962 aerial photograph depicts the Site as bare ground, and Spokane County Assessor records indicate that the apartment complex was constructed between 1967-1969. Historic topographic maps and aerial photographs compiled by Lightbox Environmental Data Resources (EDR; 2024a, 2024b) are included in Appendix A.

Previous environmental assessments conducted at the Site are briefly summarized below.

1.2.1 2009 Phase I ESA

In 2009, EnviroScience prepared a Phase I ESA of the Site for Community Frameworks and Spokane County. The assessment revealed no evidence of recognized environmental conditions (RECs), on the subject property (EnviroScience, 2009).

1.2.2 2021 Phase I ESA and Limited Environmental Site Evaluation (LESE)

In 2021, ALLWEST prepared a Phase I ESA for Community Frameworks for the northwest portion of the Site (parcel number 45022.5301). ALLWEST identified photographic evidence of a possible apple orchard present on the property from sometime before 1938 until sometime between the years 1953 and 1962. The Washington State Department of Ecology (Ecology) has identified the presence of lead and arsenic in orchard soils arising from the historic use of lead arsenate pesticides. Lead arsenate pesticides were widely used from the late 1800s to just before 1950 in central and eastern WA. Given that the Site was possibly an orchard during the time-period as seen on the historical aerial photographs, further sampling of subsurface soils was warranted (ALLWEST 2021a). ALLWEST concurrently performed a LESE and collected five soil samples from the grassy area located on the western portion of parcel 45022.5301 at depths ranging from 0.8 to 2.2 feet below ground surface (bgs). Arsenic was detected in two soil samples at concentrations of 23 and 27 mg/kg that exceed the Washington Model Toxics Control Act (MTCA) Method A Soil Cleanup Level for Unrestricted Use of 20 mg/kg (ALLWEST 2021b). The elevated levels of arsenic were considered a REC (ALLWEST 2021a).

1.2.3 2024 X-Ray Fluorescence (XRF) Soil Screening

In November 2024, Ecology collected 22 soil samples from 3-inch diameter hand-augured borings throughout the Site at depths ranging from 12 to 18 inches bgs. The grab samples were dried and sieved for subsequent analysis with a hand-held XRF detector for arsenic and lead. The XRF results identified twenty samples with arsenic levels exceeding the Washington MTCA Method A cleanup level of 20 parts per million (ppm). The exceedances ranged from 21 ppm to 63 ppm. Additionally, the XRF results identified three samples that exceeded the Washington MTCA Method A cleanup threshold for lead of 250 ppm, ranging from 258 ppm to 351 ppm (Ecology 2025a).

1.3 Scope of the Assessment

ERG completed the following tasks during the Phase II ESA of the Site:

- On January 16, 2025, Alta met with the private utility locator to delineate underground utilities. The Phase II ESA field sampling activities were conducted on January 17th and 20th, 2025.
- The field work consisted of the following samples:
    - Sixty (60) subsurface soil composite samples collected from twenty (20) soil borings to evaluate arsenic and lead concentrations; and
    - Ten (10) samples selected from the 22 XRF soil screening samples collected by Ecology in November 2024 were submitted to the laboratory for confirmatory analysis of arsenic and lead.
- Phase II ESA sampling was conducted in accordance with the Quality Assurance Project Plan (QAPP) approved by EPA on January 13, 2025 (ERG, 2024). Any deviations from the approved QAPP are described in Section 2.2.

1.4 Reliance and Limitations

This Phase II ESA has been prepared solely for the use and benefit of EPA and the Applicant. Any use of this document or information provided herein by persons or entities other than EPA and the Applicant without express written consent of ERG will be at the sole risk and liability of said person or entity.

The conclusions presented in this report represent ERG's best professional judgment based upon the information available and conditions existing as of the date of this report. In performing this work, ERG relies upon publicly available information, information provided by EPA and the Applicant, and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to ERG was accurate and complete. This review is not intended as legal advice, nor is it an exhaustive review of Site conditions. ERG makes no representations or warranties, expressed or implied, about the conditions of the Site.

2.0 Site Setting

The Site is located within the City of Spokane Valley in eastern WA. Spokane Valley is approximately ten miles east of Spokane, WA. The Site is located within the northwest quarter of Section 2, Township 25 North, Range 44 East of the Willamette Principal Meridian, WA, with a general central point at 47.69614° North Latitude and -117.20996° West Longitude. It comprises four parcels totaling 3.2 acres which are owned by the Applicant. The Site is accessible via East Rockwell Avenue, a cul-de-sac extending from North Ellen Road, a residential roadway running in a north-south direction accessible from East Trent Avenue (aka State Route 290). Figure 1 shows the Site layout.

According to the Spokane Valley Permit Center, the Site is currently zoned for multi-family residential use while surrounding properties are zoned for industrial mixed use, multi-family residential, or single-family residential use (Spokane Valley Permit Center, 2025). The Site is surrounded by a chain link fence. A vacant lot, a parking lot and various commercial establishments, including Hungree Bee Sandwiches, Swell Coffee, and Trent Harvest Foods convenience store and gas station are located to the south of the property along the northern side of East Trent Avenue. The Burlington Northern Santa Fe (BNSF) Railroad, which runs east-west, lies south of East Trent Avenue. Residential properties are located north and east of the Site. A swale is located between the property fence line and North Ellen Road on the western perimeter of the Site. Residential properties are located west of North Ellen Road.

2.1 Phase II ESA Field Activities

Phase II ESA field activities included the collection of subsurface composite soil samples as well as the delivery of samples to the selected laboratory for analysis. Additionally, ten of the soil samples that had been previously collected by Ecology for XRF screening in November 2024 were provided to ERG and subsequently submitted for laboratory analysis. The goal of the Phase II ESA was to build on previous assessments to identify, characterize, and delineate the extent of potential hazards associated with the RECs and/or areas of concern identified within the prior reports. Sampling data at the Site will help inform the Applicant of potential environmental challenges that may need to be addressed.

2.2 QAPP Deviations

Sampling procedures followed the *Quality Assurance Project Plan [QAPP] for Phase II Environmental Site Assessment – Rockwell Apartments, Spokane Valley, WA* (ERG 2024) except for the following deviations:

- The QAPP anticipated utilizing a track-mounted Geoprobe with a 2.5-inch diameter macro-core barrel. Due to field conditions resulting in lower sample recovery, modifications were made to utilize a 3-inch diameter split spoon barrel, to achieve the desired sample recovery.

2.3 Geology and Hydrology

The Site's lithology predominantly consists of Pleistocene silty gravels, ranging from gravels to boulders, with interbedded sandy lenses. These deposits were formed as benches along the main stem of the Snake River as a result of rapid draining of ice age floods originating from glacial Lake Bonneville and glacial Lake Missoula. These glaciolacustrine deposits host the 370 square mile unconfined Spokane Valley-Rathdrum Prairie (SVRP) aquifer, which serves as the region's sole source aquifer. Discontinuous clay layers common within the aquifer and Spokane Valley can lead to lower permeability perched aquifer conditions in some areas (Washington Department of Natural Resources 2022). Nearby well logs show static groundwater levels ranging from 77 to 102 feet bgs (Ecology 2025b). Groundwater was not encountered during Phase II field activities; but based on Site topography and regional knowledge of the SVRP aquifer, groundwater in the area generally flows from northeast to southwest.

2.4 Soil Sampling

ERG notified the Washington Utility Notification Center to identify underground public utilities within the area and subcontracted with a private utility locator, Advanced Underground Utility Locating LLC (AUUL) to locate underground utilities and a suspected septic system using ground penetrating radar prior to boring advancement.

The ERG field crew collected soil samples wearing clean nitrile gloves into the sampling containers described in the QAPP (ERG 2024) and placed all soil samples in a cooler immediately after collection. Samples were held under chain-of-custody documentation following ASTM D4840-99 *Standard Guide for Sample Chain-of-Custody Procedures* (ASTM 2018) until shipment to the laboratory, Pace Analytical (Pace), for analysis. All soil composite samples were analyzed for arsenic and lead by EPA Method 6010D (EPA 2018).

Appendix B includes photographs taken during the sampling activities. Appendix C summarizes the soil analytical results (expressed in mg/kg). Appendix D includes complete laboratory data sheets and chain-of-custody documentation.

2.4.1 Subsurface Soil Sampling

On January 17 and 20, 2025, the ERG field crew collected subsurface soil composite samples from discrete depth intervals in 20 boring locations. ERG's drilling subcontractor, Budinger & Associates, Inc. (Budinger) advanced the soil borings using a track mounted Geoprobe 7822DT Combo Rig equipped with a 140-pound automatic drop hammer to drive an interlocking split spoon sampler Geoprobe® 3-inch diameter, 2-foot length split spoon barrel in 2-foot rod intervals to the target depth of 5 feet bgs.

The ERG field crew logged borehole soils according to the Unified Soil Classification System (USCS); the boring logs are included in Appendix E. The ERG field crew utilized a decontaminated stainless-steel trowel and 5-gallon sample container to homogenize each discrete soil interval (0-0.5 feet bgs, 0.5-2 feet bgs, and 2-5 feet bgs) from each soil boring. When homogenizing the shallow soil interval (0-0.5 feet bgs), the field team attempted to remove organic matter. Once each discrete soil sample interval was homogenized, an approximate 60 percent sub-sample was collected.

The ERG field crew collected a total of 60 soil composite samples, plus 3 duplicate samples and 3 Site-specific matrix spike/matrix spike duplicate (MS/MSD) samples from the 20 soil boring locations (BH-1 through BH-20, Figure 1). Each composite soil sample was analyzed for total lead and total arsenic by

EPA Method 6010D (EPA 2018). Appendix C includes all subsurface soil sampling results (Tables C-1 and C-2).

2.4.2 XRF Confirmation Samples

Ecology provided ten samples from the 22 XRF screening soil grab samples collected in November 2024 (See Section 1.2.3). The ERG field team prepared one duplicate sample from the samples provided and submitted the ten samples plus the duplicate and one Site-specific MS/MSD to Pace for analysis of total arsenic and total lead by EPA Method 6010D (EPA 2018). Figure 1 shows the approximate locations of the XRF soil screening samples that were submitted for laboratory analysis. Laboratory results are included in Table C-3 in Appendix C.

2.5 Investigation Derived Waste (IDW)

IDW consisted of one 55-gallon drum of decontamination water. The drum was transported and hauled by a certified waste hauler and disposed of at a permitted facility. Appendix F includes the waste manifest documentation.

3.0 Phase II ESA Data Quality Assurance Evaluation

Section 2.5 of the QAPP outlines the data quality objectives (DQOs) and criteria (ERG 2024). Alta's Quality Assurance Officer (QAO) conducted a Stage 2A data validation for the soil sampling data. The QAO reviewed field documentation, results of field and laboratory quality assurance/quality control (QA/QC) samples, and data reported by Pace to ensure that the data had been recorded, transmitted, and processed correctly, and to determine that DQOs were met. Consistent with the QAPP, data validation was not conducted for the XRF screening results collected by Ecology; however, Alta did conduct a confirmatory analysis of the paired XRF and laboratory data (discussed in more detail in Section 4.2). Appendix G includes the Site-specific QA/QC Memorandum that summarizes the data validation and data quality assessment performed by Alta.

3.1 General Data Review

Alta's QAO did not qualify any data based on sample handling, tracking, and reporting. Data meet the DQOs for representativeness and comparability, with the exceptions discussed in the sections below.

3.2 Data Sensitivity

Alta's QAO did not qualify any data based on data sensitivity; however, the method detection limits (MDLs) and reporting limits (RLs) for certain samples were greater than requested. All MDLs were less than the associated MTCA Method A Cleanup Levels; therefore, sensitivity is not a concern.

3.3 Data Accuracy and Precision

Accuracy and precision are also considered acceptable, with the exceptions discussed in the subsections below.

3.3.1 Accuracy

Alta's QAO qualified the following data based on accuracy results (laboratory control sample [LCS] recoveries or MS recoveries).

- The lead result in field sample RWA-BH11-SC-0.5'-2' was qualified as estimated (J) due to matrix interference during the laboratory serial dilution test.

- The results for lead in field samples RWA-BH11-SC-0'-0.5' and RWA-XRF22-SG-15" are qualified as estimated due to percent recovery (%R) in the MS and/or MSD analysis.

3.3.2 Precision

Alta's QAO qualified the following data based on precision results MSD relative percent difference [RPD]), laboratory control sample duplicates [LCSD] RPD, or field duplicate RPD).

- The arsenic and lead results in sample RWA-XRF22-SG-15" are qualified as estimated (J) due to an RPD above the laboratory limit in the MS/MSD analysis.
- The lead and/or arsenic results were qualified as estimated (J) in certain field duplicate pairs due to an RPD in the field duplicate above the QAPP RPD goal of 50%, or the difference between the original and duplicate concentrate above the reporting limit.

3.4 Data Usability

The Alta QAO did not reject any results. Therefore, according to the QAPP (ERG 2024), the completeness for this sampling event is calculated at 100%.

4.0 Phase II ESA Sampling Results

This section summarizes the soil analytical results for the Site assessment activities completed on January 17 and 20, 2025 as well as the laboratory results of the XRF confirmation samples collected by Ecology in November 2024. Table 1 below displays the analytical results that exceeded applicable screening levels. This section also summarizes the regression analysis performed for the paired XRF and laboratory confirmation samples.

4.1 Soil Sampling Results

ERG compared target analyte concentrations in soil samples to MTCA (Washington Administrative Code [WAC] 173-340) Method A Cleanup Levels (Table 740-1, WAC 173-340-900), as listed in Appendix A of the QAPP (ERG 2024).

4.1.1 Subsurface Soil Sampling Results

ERG collected 60 composite soil samples, 3 duplicate samples, and 3 Site specific MS/MSD samples at depth from 20 boring locations (BH-1 through BH-20) for analysis of arsenic and lead.

Arsenic Results

Arsenic was detected at a concentration above the MTCA Method A Cleanup Level of 20 mg/kg (WAC 173-340-900) and regional background concentrations (9.34 mg/kg; Ecology 1994) in 14 composite soil samples. The maximum detected concentration of arsenic was 49.2 mg/kg at BH-4 collected from 0.5-2 feet bgs. Arsenic concentrations in ten composite samples collected from 0-0.5 feet bgs and four composite samples collected from 0.5-2 feet bgs exceeded the MTCA Method A Cleanup Level. No samples collected from 2-5 feet bgs had detections of arsenic greater than the MTCA Method A Cleanup Level.

Arsenic concentrations in all samples collected from 0-0.5 feet bgs ranged from 7.49 mg/kg to 37.8 mg/kg with an average concentration of 20.0 mg/kg. Arsenic concentrations in all samples collected from 0.5-2 feet bgs ranged from 7.01 mg/kg to 49.2 mg/kg, with an average concentration of 16.5

mg/kg. Arsenic concentrations in all samples collected from 2-5 feet bgs ranged from 3.15 mg/kg to 18.1 mg/kg, with an average concentration of 7.98 mg/kg.

A summary of the arsenic sample results by parcel is as follows:

- On Parcel No. 45022.5301, the average arsenic concentration was 22.2 mg/kg in samples collected from 0-0.5 feet bgs, 18.8 mg/kg in samples collected from 0.5-2 feet bgs, and 9.20 mg/kg in samples collected from 2-5 feet bgs. The maximum detected arsenic concentration was 49.2 mg/kg at BH-4 from 0.5-2 feet bgs).
- On Parcel No. 45022.5302, the average arsenic concentration was 22.9 mg/kg in samples collected from 0-0.5 feet bgs, 15.9 mg/kg in samples collected from 0.5-2 feet bgs, and 8.14 mg/kg in samples collected from 2-5 feet bgs. The maximum detected arsenic concentration was 26.5 mg/kg at BH-10 from 0-0.5 feet bgs.
- On Parcel No. 45022.5402, the average arsenic concentration was 17.6 mg/kg in samples collected from 0-0.5 feet bgs, 15.6 mg/kg in samples collected from 0.5-2 feet bgs, and 7.00 mg/kg in samples collected from 2-5 feet bgs. The maximum detected arsenic concentration was 26.0 mg/kg at BH-12 from 0-0.5 feet bgs.
- On Parcel No. 45022.5401, the average arsenic concentration was 16.3 mg/kg in samples collected from 0-0.5 feet bgs, 14.6 mg/kg in samples collected from 0.5-2 feet bgs, and 6.91 mg/kg in samples collected from 2-5 feet bgs. The maximum detected arsenic concentration was 21.6 mg/kg at BH-18 from 0-0.5 feet bgs.

Table 1 below summarizes analytical results that exceeded applicable screening levels.

Tables C.1 and C.2 in Appendix C contain the full subsurface soil analytical results (expressed in mg/kg). The laboratory report is provided in Appendix D. Figure 2 shows the sample locations and the results that exceeded the MTCA Method A Cleanup Level.

Lead Results

Lead was not detected at concentrations above the MTCA Method A Cleanup Level (250 mg/kg) in any location.

A summary of the lead sample results by parcel is as follows:

- On Parcel No. 45022.5301, lead concentrations ranged from 7.10 mg/kg to 164 mg/kg. The maximum detected lead concentration was 164 mg/kg at BH-4 from 0-0.5 feet bgs.
- On Parcel No. 45022.5302, lead concentrations ranged from 8.72 mg/kg to 114 mg/kg. The maximum detected lead concentration was 114 mg/kg at BH-10 from 0-0.5 feet bgs.
- On Parcel No. 45022.5402, lead concentrations ranged from 6.80 mg/kg to 111 mg/kg. The maximum detected lead concentration was 111 mg/kg at BH-12 from 0-0.5 feet bgs.
- On Parcel No. 45022.5401, lead concentrations ranged from 7.95 mg/kg to 91 mg/kg. The maximum detected lead concentration was 91 mg/kg at BH-20 from 0-0.5 feet bgs.

Tables C.1 and C.2 in Appendix C contain the full subsurface soil analytical results (expressed in mg/kg). The laboratory report is provided in Appendix D.

4.1.2 XRF Screening Sample Analytical Results

ERG submitted ten soil grab samples (plus one duplicate sample) from the 22 XRF screening samples collected by Ecology in November 2024 for analysis of arsenic and lead. Overall, XRF results are greater than laboratory confirmation sample results for both lead and arsenic (Table C.3).

Arsenic was detected at a concentration above the MTCA Method A Cleanup Level of 20 mg/kg (WAC 173-340-900) and regional background concentrations (9.34 mg/kg; Ecology 1994) in 6 soil samples. The maximum detected laboratory concentration of arsenic was 51.2 mg/kg at XRF location 13, which had an XRF reading of 58 ppm. The average concentration of laboratory-analyzed arsenic in the ten soil grab samples was 26.2 mg/kg.

Lead was not detected at a concentration above the MTCA Method A Cleanup Level (250 mg/kg) in any location. Tables C.3 in Appendix C summarizes the paired XRF and laboratory results (expressed in mg/kg). The laboratory report is provided in Appendix D. Figure 3 shows the sample locations and the results that exceeded the MTCA Method A Cleanup Level.

Table 1. Phase II ESA Summary of Soil Sample Regulatory Exceedances

Analyte	Sample Media	Sample ID (Sample Depth)	Sample Result (mg/kg)	MTCA Method A Regulatory Limit [1]	Background Concentration [2]
Arsenic	Subsurface Soil - Composite	RWA-BH1-SC-0'-0.5' (0-0.5 feet bgs)	31.7	20 mg/kg	9.34 mg/kg
		RWA-BH4-SC-0'-0.5' (0-0.5 feet bgs)	37.8		
		RWA-BH4-SC-0.5'-2' (0.5-2 feet bgs)	49.2		
		RWA-BH6-SC-0.5'-2' (0.5-2 f feet bgs)	23.9		
		RWA-BH7-SC-0'-0.5' (0-0.5 feet bgs)	26.0 J		
		RWA-BH8-SC-0'-0.5' (0-0.5 feet bgs)	24.3		
		RWA-BH9-SC-0'-0.5' (0-0.5 feet bgs)	23.3		
		RWA-BH10-SC-0'-0.5' (0-0.5 feet bgs)	26.5		
		RWA-BH12-SC-0'-0.5' (0-0.5 feet bgs)	26.0		
		RWA-BH13-SC-0'-0.5' (0-0.5 feet bgs)	23.4		

Table 1. Phase II ESA Summary of Soil Sample Regulatory Exceedances

Analyte	Sample Media	Sample ID (Sample Depth)	Sample Result (mg/kg)	MTCA Method A Regulatory Limit [1]	Background Concentration [2]
		RWA-BH13-SC-0.5'-2' (0.5-2 feet bgs)	22.3		
		RWA-BH14-SC-0.5'-2' (0.5-2 feet bgs)	22.2		
		RWA-BH18-SC-0'-0.5' (0-0.5 feet bgs)	21.6		
		RWA-BH20-SC-0'-0.5' (0-0.5 feet bgs)	21.4		
Arsenic	Subsurface Soil - Grab	RWA-XRF4-SG-13"	20.1	20 mg/kg	9.34 mg/kg
		RWA-XRF7-SG-13"	28.4		
		RWA-XRF13-SG-14"	51.2		
		RWA-XRF15-SG-13"	37.1		
		RWA-XRF20-SG-16"	32.9		
		RWA-XRF22-SG-15"	31.3		

[1] MTCA Method A Cleanup Level (WAC 173-340-900)
[1] Regional background concentrations from Ecology, 1994.
J = result is an estimate based on data validation (see Appendix G)
mg/kg = milligrams per kilogram

4.2 XRF Confirmation Sample Regression Analysis

From 22 XRF screening samples collected by Ecology, Alta field staff submitted 10 confirmation samples for laboratory analysis as guided in the QAPP (ERG 2024). Ecology staff air-dried, sieved and analyzed each sample using XRF prior to Alta submitting the samples for laboratory analysis. Ecology provided the XRF results to Alta for comparison to laboratory results. The XRF *Sampling Activities Summary and Variance Report* (Ecology 2025a) did not include quality assurance information; therefore, Alta did not confirm that the quality control checks outlined in EPA Method 6200 (e.g., analysis of blanks, calibration verification, or precision checks) were completed by Ecology during XRF analysis and did not include XRF results in the data quality review.

Alta conducted a confirmatory analysis of the paired XRF and laboratory data for both arsenic and lead. Paired results were evaluated using a least squares linear regression after log-transforming the data. The coefficient of determination (r^2) for the results should be 0.7 or greater for the XRF data to be considered screening level data (EPA 2007). Higher r^2 results indicate better correlation between the XRF data and the laboratory data. Soil heterogeneity is one factor that may contribute to lower correlations.

The r^2 for arsenic is 0.71, indicating that comparability is sufficient and the XRF data are considered screening level data.

The r^2 for lead is 0.0025, which does not meet the threshold for screening purposes.

Table C.3 in Appendix C summarizes the paired XRF and laboratory analytical results. Details of the regression analysis are included in the QA/QC Memorandum in Appendix G.

4.3 Discussion

Arsenic in Site Soils

Arsenic was detected at concentrations above the MTCA Method A Cleanup Level in fourteen of 60 soil samples. The majority of samples with arsenic concentrations above the MTCA Method A Cleanup Level were collected from surface soil (10 samples from 0-0.5 feet bgs) and the remaining samples were collected from shallow subsurface soil (4 samples from 0.5-2 feet bgs). One composite sample collected from parcel 45022.5301 from 0.5-2 feet bgs exceeded 40 mg/kg (49.2 mg/kg at BH-4).

The average arsenic concentrations of all laboratory-analyzed samples by depth are as follows: 20 mg/kg (0-0.5 feet bgs), 16.5 mg/kg (0.5-2 feet bgs), and 7.98 mg/kg (2-5 feet bgs). Overall, the average concentrations of arsenic decreases with depth.

Arsenic was detected in the laboratory-analyzed samples at concentrations above the MTCA Method A Cleanup Level in six subsurface soil grab samples collected by Ecology. One grab sample exceeded 40 mg/kg (51.2 mg/kg at XRF13).

Guidance from Ecology's 2021 Model Remedies for Former Orchard Properties (Ecology, 2021) indicates that arsenic levels are considered elevated if the average arsenic concentration of samples collected from 3-8 inches bgs is greater than 20 mg/kg or the maximum of any one sample is greater than 40 mg/kg. Table C-1 shows average arsenic concentrations for samples collected from 0-0.5 feet bgs across the Site and Table C-2 shows average arsenic concentrations for samples collected from 0-0.5 feet bgs for each of the four parcels on the Site.

The Site-wide average arsenic concentration for surface soils is 20 mg/kg, which is the same as the MTCA Method A Cleanup Level. Average arsenic concentrations for surface soils collected from 0-0.5 feet bgs on parcels 45022.5301 and 45022.5302 exceed the MTCA Method A Cleanup Level slightly, at 22.2 mg/kg and 22.9 mg/kg, respectively (Table C-2; Figure 2). The average arsenic concentrations for surface soils collected from 0-0.5 feet bgs on parcels 45022.5401 and 45022.5402 are below 20 mg/kg with no samples exceeding 40 mg/kg on these two parcels.

Lead in Site Soils

Lead was not detected in any soil samples at concentrations above the MTCA Method A Cleanup Level.

XRF Confirmation Samples

The confirmatory analysis of paired XRF and laboratory results indicates that XRF results can be used as screening level data for arsenic only.

5.0 Phase II ESA Conclusions and Recommendations

The analytical results for soil samples indicate that COCs are present at the Site above the MTCA Method A Cleanup Level (WAC 173-340-900). The following sections summarize ERG's conclusions and recommendations.

5.1 Conclusions

Based on field observations, available information, and Site-specific data collected, ERG concludes the following:

- **Arsenic in Soil.** Arsenic was detected in subsurface soils at concentrations exceeding the MTCA Method A Cleanup Criteria of 20 mg/kg in certain portions of the Site. Average arsenic concentrations for surface soil samples collected from 0–0.5 feet bgs from the northwest and northeast portions of the Site (parcels 45022.5301 and 45022.5302) exceed the MTCA Method A Cleanup Level slightly, at 22.2 mg/kg and 22.9 mg/kg, respectively. One sample collected from 0.5-2 feet bgs on the northwest parcel (45022.5301) exceeded 40 mg/kg.
- **Lead in Soil.** Lead was not detected in subsurface soils at concentrations exceeding the MTCA Method A Cleanup Criteria.

5.2 Recommendations

Based on the findings and conclusions summarized above, ERG recommends the development of an ABCA to identify and evaluate cleanup alternatives to address arsenic contamination in Site soils in consideration of future Site uses.

6.0 References

ALLWEST, 2021a. Phase I Environmental Site Assessment. Rockwell Addition. 14503 East Rockwell Avenue. Spokane Valley, Washington. September.

ALLWEST, 2021b. Limited Environmental Site Evaluation. Rockwell Addition. Spokane Valley, Washington. September.

ASTM International (ASTM), 2018. D4840-99: Standard Guide for Sample Chain-of-Custody Procedures.

ASTM, 2019. E1903-19: Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process.

City of Spokane Valley Permit Center, "Valley Viewer". Accessed online at https://www.spokanevalleywa.gov/267/Maps-GIS on March 1, 2025.

U.S. Environmental Protection Agency (EPA), 2007. Method 6200. Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment. February.

EPA, 2018. Method 6010D: Inductively Coupled Plasma-Optical Emission Spectrometry. Revision 5. July.

EPA, 2024. Regional Screening Level Summary Table for Resident Soil, May. Available online at https://semspub.epa.gov/src/document/HQ/405273

Eastern Research Group, Inc. (ERG), 2024. Quality Assurance Project Plan [QAPP] for Phase II Environmental Site Assessment – Rockwell Apartments, Spokane Valley, WA. Prepared for U.S. Environmental Protection Agency, Region 10 Brownfields & Land Revitalization Program. Revision 0. December.

EnviroScience, 2009. Phase I Environmental Site Assessment of Rockwell Apartments Property. Prepared for Community Frameworks and Spokane County. May.

Lightbox Environmental Data Resources (EDR), 2024a. EDR Historical Topo Map Report. Inquiry Number 7784096.4. October.

EDR, 2024b. The EDR Aerial Photo Decade Package. Inquiry Number 7784096.8. October.

Spokane County, 2025. Property Information Search. Accessed online at https://cp.spokanecounty.org/scout/SCOUTDashboard/ on March 1, 2025.

Washington Administrative Code (WAC) 173-340. Title 173, Chapter 173-340: Model Toxics Control Act – cleanup. Last update: 10/12/07, <http://apps.leg.wa.gov/wac/default.aspx?cite=173-340>.

Washington State Department of Ecology (Ecology), 1994. Natural Background Soil Metals Concentrations in Washington State. Toxics Cleanup Program, Publication #94-115, October.

Ecology, 2021. Model Remedies for Cleanup of Former Orchard Properties in Central and Eastern Washington. For the Toxics Cleanup Program. Publication 21-09-006. July.

Ecology, 2025a. Rockwell Apartment, 14521 E Rockwell Ave, Spokane Valley, WA 99216, Sampling Activities Summary and Variance Report. Revision 1. January.

Ecology, 2025b. Well Construction & Licensing. Accessed online at https://appswr.ecology.wa.gov/wellconstruction/map/WCLSWebMap/WellConstructionMapSearch.aspx on March 1, 2025.

Washington Department of Natural Resources, 2022. Washington Geologic Information Portal. Accessed online at https://geologyportal.dnr.wa.gov/2d-view#wigm?-13077373,-13040837,6045638,6063218?Surface_Geology,500k_Surface_Geology,Map_Units on March 1, 2025.

Figure 1. Site Layout and Phase II ESA Sample Locations

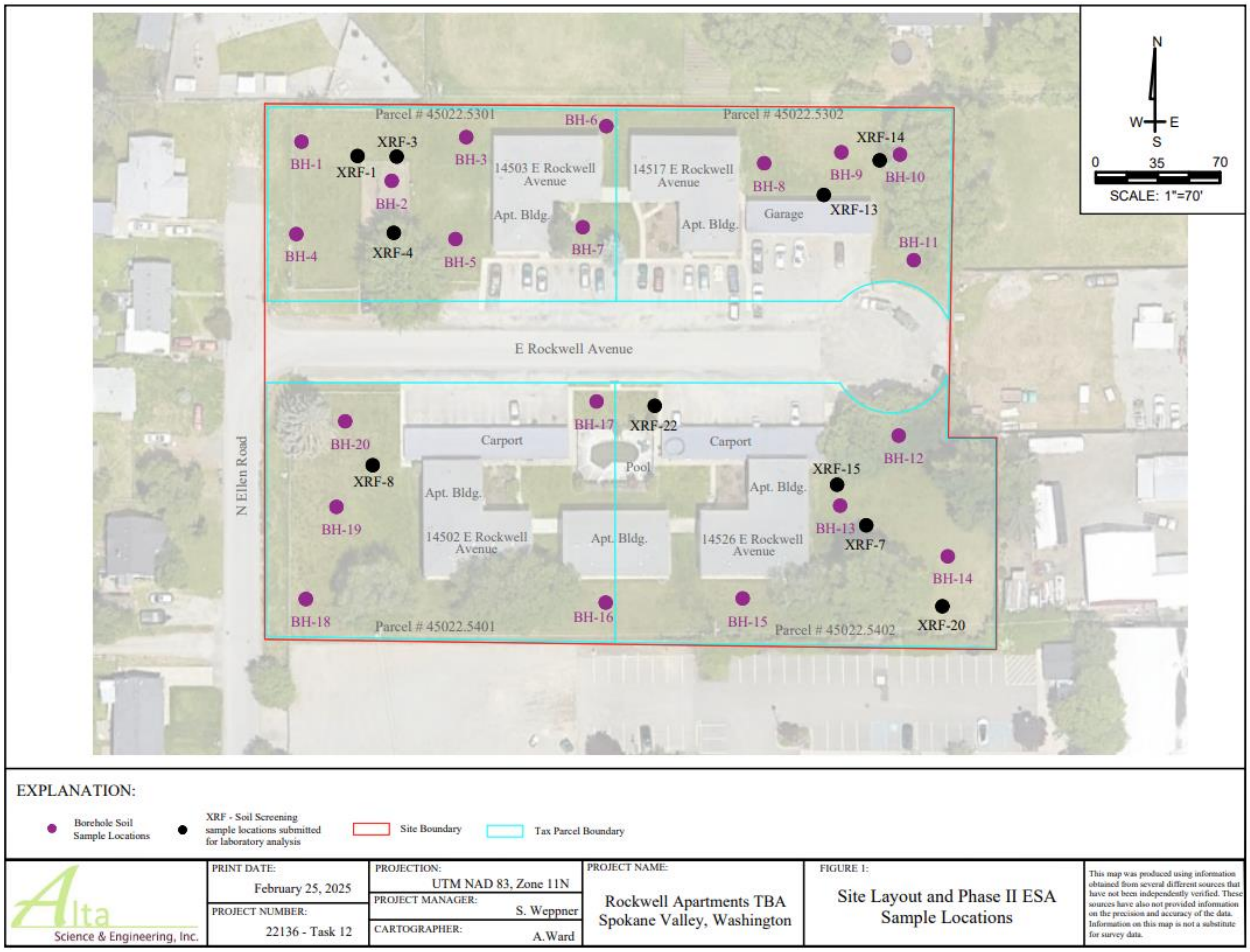


Figure 2. Subsurface Soil Sampling Results

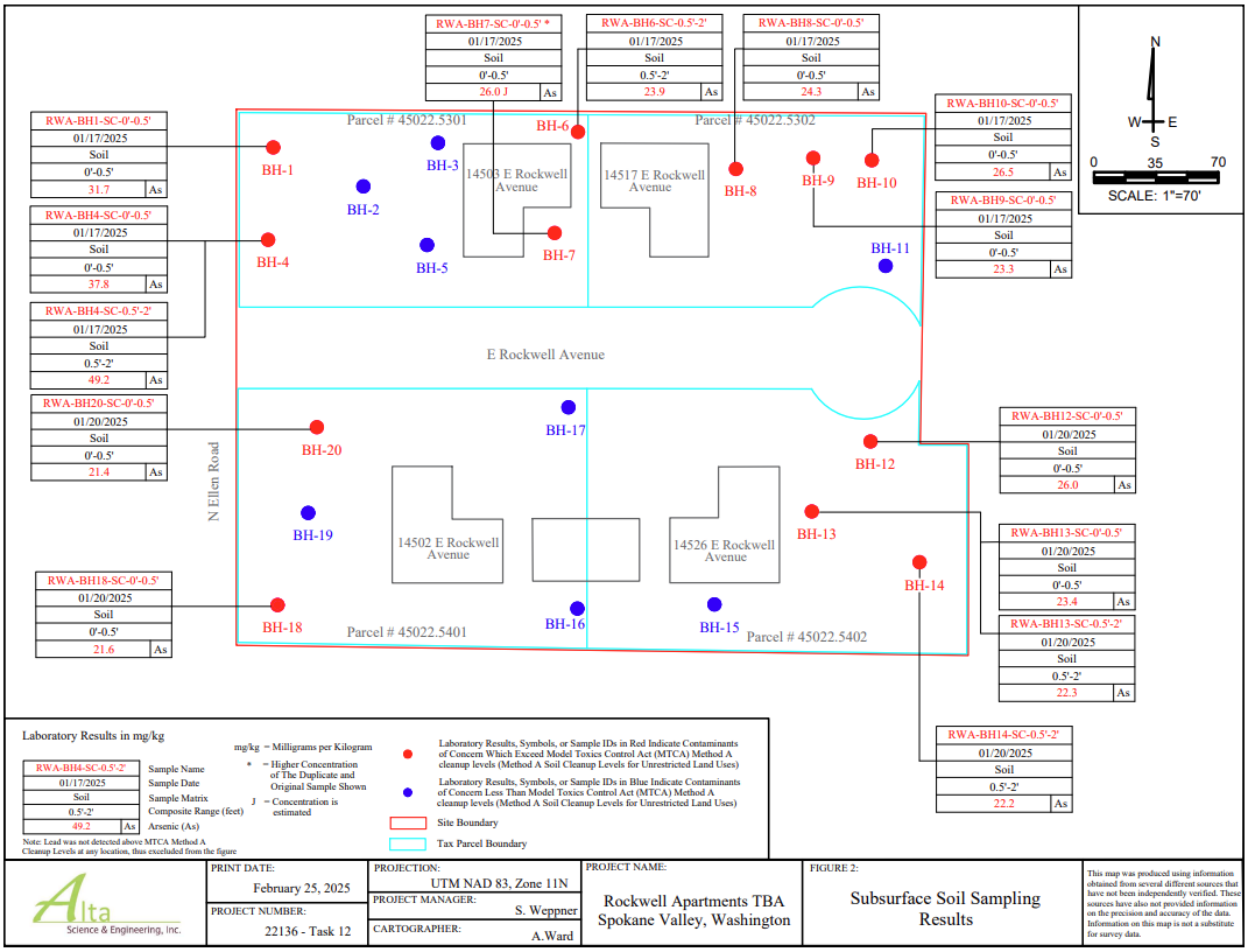
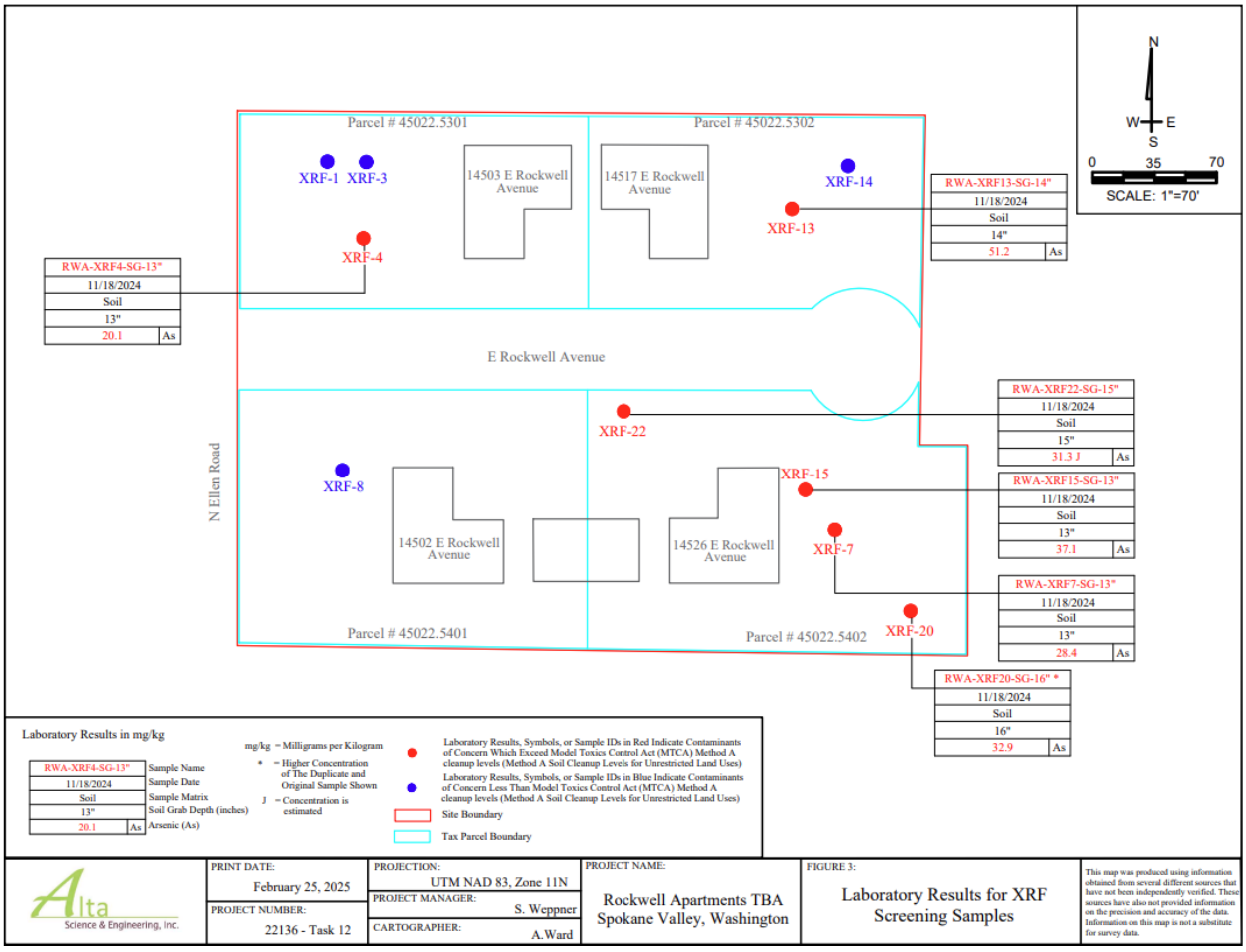


Figure 3. XRF Screening Sample Analytical Results



Appendix A –
Historic Documents

Appendix B – Photo Log

Photo 1

Overview of the Site, from the east end of E Rockwell Ave. facing northeast.

Photo 2

Overview of the Site, from the east end of E Rockwell Ave. facing southwest.

Photo 3

Southwestern perimeter of the Site, facing east.

Photo 4

Northwestern perimeter of the Site, facing northwest.

Alta Science & Engineering, Inc.	PRINT DATE: March 6, 2025	PROJECT MANAGER: S. Weppner	PROJECT NAME: Rockwell Apartments TBA Spokane Valley, WA	APPENDIX B, PHOTO LOG Phase II ESA January 2025 Field Work
	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		

Photo 5

View along the northern perimeter, facing east. Near location of BH-3. Caution tape blocking off area of septic system.

Photo 6

View along the north central perimeter of the Site, facing south. Near location of BH-6.

Photo 7

View of the southeastern perimeter of the Site, facing east.

Photo 8

View of the northeastern perimeter of the Site, facing west.

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	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		

Photo 9

View of the southeastern perimeter, facing south.

Photo 10

View other the southeastern perimeter, facing northwest.

Photo 11

View along the southeaster perimeter, facing west. Near location of BH-15

Photo 12

View of the central western perimeter, facing northeast

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	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		

Photo 13

View of the Site between N. Ellen Rd and the western perimeter, facing south.

Photo 14

View of the western perimeter, facing south.

Photo 15

Private utility survey performed via ground-penetrating radar (GPR) throughout Site prior to sampling.

Photo 16

BH-5 was the first boring advanced on day 1 of sampling, utilizing track mounted direct push Geoprobe with 2' x 3" split spoon barrel with 140 lb. pneumatic hammer.

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	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		

Photo 17

Borings were attempted to a depth of 5’ below ground surface (bgs) in all boring locations. General soil boring lithology from surface elevation to 2' bgs. Organics & sandy silts transition to silty gravels with sand.

Photo 18

General soil boring lithology from 2' bgs to 4' bgs. Composed of alluvial sediment related to Pleistocene outburst flood deposits.

Photo 19

General soil boring lithology from 4' bgs to 5' bgs. Outburst flood deposits generally show coarsening downward soil lithology.

Photo 20

Location of BH-4. Located on the northwestern perimeter of the Site, facing northeast.

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	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		

Photo 21

Location of BH-7. Located in the north central area of the Site, facing northeast.

Photo 22

Direct push Geoprobe approaching the location of BH-8, facing west.

Photo 23

View of sample staging area located on the southeast portion of the Site.

Photo 24

BH-15 located on the southeastern portion of the Site, facing southwest.

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	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		

Photo 25

BH-16 located on the southern perimeter of the Site, facing north.

Photo 26

BH-18 located on the southwestern perimeter of the Site, facing southeast.

Photo 27

0425.00.016.100

BH-19 located on the western portion of the Site, facing southwest.

Photo 28

BH-20 located on the west central portion of the Site, facing north.

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	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		Phase II Site Investigation Phase II ESA January 2025 Field Work

Photo 29

BH-17, final boring advanced on Day 2 of sampling, facing east.

Photo 30

55-gallon Investigation Derived Waste (IDW) drum containing decontamination water utilized during sampling.

Photo 31

IDW located on the northwestern perimeter of the Site, facing east.

Photo 32

IDW labeled and wrapped with caution tape.

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	PROJECT NUMBER: 22136.093	CREATED BY: J. Hudgins		

Appendix C –
Sampling Results

Table C-1. Subsurface Soil Grab Sampling Results for Arsenic and Lead

Borehole	Sample Date	Units	0-0.5' bgs		0.5' - 2' bgs		2' - 5' bgs	
			Arsenic	Lead	Arsenic	Lead	Arsenic	Lead
		MTCA Method A	**20**	250	**20**	250	20	250
		EPA RSL - Residential Soil	0.68 C	200 NC	0.68 C	200 NC	0.68 C	200 NC
		Spokane Basin WA Background Concentration	9.34 / 20.83	14.91	9.34 / 20.83	14.91	9.34 / 20.83	14.91
			Result	**Result**	**Result**	**Result**	**Result**	**Result**
BH1	01/17/2025	mg/kg	**31.7**	138	15.4	49.7	15.0	14.7
BH2	01/17/2025	mg/kg	16.1	85.9	7.59	22.0	9.29	7.31
BH3	01/17/2025	mg/kg	17.4	99.7	8.67	52.6	6.56	9.24
BH4	01/17/2025	mg/kg	**37.8**	164	**49.2**	89.8	5.67	20.8
BH5	01/17/2025	mg/kg	14.0	76.4	12.6	34.7	4.11	16.1
BH6	01/17/2025	mg/kg	12.3	54.9	**23.9**	89.8	5.70	7.10
BH7 *	01/17/2025	mg/kg	**26.0** J	144	14.4 J	50.2 J	18.1 J	55.5 J
BH8	01/17/2025	mg/kg	**24.3**	99.6	19.9	68.1	4.11	16.7
BH9	01/17/2025	mg/kg	**23.3**	85.6	16.7	51.5	5.34	9.70
BH10	01/17/2025	mg/kg	**26.5**	114	17.3	38.5	12.3	17.3
BH11	01/20/2025	mg/kg	17.5	68.3 J	9.60	33.2 J	10.8	8.72
BH12	01/20/2025	mg/kg	**26.0**	111	10.7	30.5	9.05	21.3
BH13	01/20/2025	mg/kg	**23.4**	89.1	**22.3**	66.8	11.3	12.3
BH14	01/20/2025	mg/kg	7.49	28.4	**22.2**	49.8	4.48	7.92
BH15	01/20/2025	mg/kg	13.6	48.5	7.01	18.1	3.15	6.80
BH16	01/20/2025	mg/kg	15.7	65.5	12.1	22.6	12.9	8.97
BH17	01/20/2025	mg/kg	13.5	54.1	17.9	59.0	6.90	8.45
BH18	01/20/2025	mg/kg	**21.6**	61.0	17.4	35.8	5.12	9.48
BH19	01/20/2025	mg/kg	9.44	39.2	11.6	33.9	4.32	11.7
BH20	01/20/2025	mg/kg	**21.4**	91.0	13.9	45.5	5.31	7.95
		Minimum	*7.49*	*28.4*	*7.01*	*18.1*	*3.15*	*6.80*
		Maximum	*37.8*	*164*	*49.2*	*89.8*	*18.1*	*55.5*
		Average	*20.0*	*85.9*	*16.5*	*47.1*	*7.98*	*13.9*

Arsenic and lead analyzed by EPA Method 6010D.

Model Toxics Control Act (MTCA) Method A cleanup levels, Table 740-1, Method A Soil Cleanup Levels for Unrestricted Land Uses. WAC 173-340-900.

EPA RSLs = EPA Regional Screening Level for the Residential Soil Pathways (EPA 2024). C = carcinogenic. NC = noncarcinogenic. Shown for informative purposes only; data were not compared against RSL values.

WA background values for Ecology Spokane Basin 90th Percentile from Table 7 of Natural Background Soil Metals Concentrations in Washington State (Ecology 1994). The 90th percentile value for As in Spokane Basin analyzed by AA is 9.34 mg/kg; while the 90th percentile value for As analyzed by ICP methodology is 20.83

Bolded values exceed the MTCA Method A Cleanup Level.

* location of duplicate sample; higher concentration shown

J = concentration is estimated

bgs = below ground surface

mg/kg = milligrams per kilogram

Table C-2. Subsurface Soil Grab Sampling Results for Arsenic and Lead by Parcel

Parcel # 45022.5301												
Borehole	**Sample Date**	**Units**	**0-0.5' bgs**		**0.5' - 2' bgs**				**2' - 5' bgs**			
			Arsenic	**Lead**	**Arsenic**		**Lead**		**Arsenic**		**Lead**	
MTCA Method A			**20**	250	**20**		250		**20**		250	
EPA RSL - Residential Soil			0.68	200	0.68		200		0.68		200	
Spokane Basin WA Background Concentration			9.34 / 20.83	14.91	9.34 / 20.83		14.91		9.34 / 20.83		14.91	
			Result	**Result**	**Result**		**Result**		**Result**		**Result**	
BH1	01/17/2025	mg/kg	**31.7**	138	15.4		49.7		15.0		14.7	
BH2	01/17/2025	mg/kg	16.1	85.9	7.59		22.0		9.29		7.31	
BH3	01/17/2025	mg/kg	17.4	99.7	8.67		52.6		6.56		9.24	
BH4	01/17/2025	mg/kg	**37.8**	164	**49.2**		89.8		5.67		20.8	
BH5	1/17/2025	mg/kg	14.0	76.4	12.6		34.7		4.11		16.1	
BH6	01/17/2025	mg/kg	12.3	54.9	**23.9**		89.8		5.70		7.10	
BH7 *	01/17/2025	mg/kg	**26.0**	J 144	14.4	J	50.2	J	18.1	J	55.5	J
		Minimum	*12.3*	*54.9*	*7.59*		*22*		*4.11*		*7.10*	
		Maximum	*37.8*	*164*	*49.2*		*89.8*		*18.1*		*55.5*	
		Average	*22.2*	*109.0*	*18.8*		*55.5*		*9.20*		*18.7*	

Parcel # 45022.5302												
Borehole	**Sample Date**	**Units**	**0-0.5' bgs**		**0.5' - 2' bgs**				**2' - 5' bgs**			
			Arsenic	**Lead**	**Arsenic**		**Lead**		**Arsenic**		**Lead**	
MTCA Method A			**20**	250	**20**		250		**20**		250	
EPA RSL - Residential Soil			0.68	200	0.68		200		0.68		200	
Spokane Basin WA Background Concentration			9.34 / 20.83	14.91	9.34 / 20.83		14.91		9.34 / 20.83		14.91	
			Result	**Result**	**Result**		**Result**		**Result**		**Result**	
BH8	01/17/2025	mg/kg	**24.3**	99.6	19.9		68.1		4.11		16.7	
BH9	01/17/2025	mg/kg	**23.3**	85.6	16.7		51.5		5.34		9.70	
BH10	01/17/2025	mg/kg	**26.5**	114	17.3		38.5		12.3		17.3	
BH11	01/20/2025	mg/kg	17.5	68.3	J 9.60		33.2	J	10.8		8.72	
		Minimum	*17.5*	*68.3*	*9.6*		*33.2*		*4.11*		*8.72*	
		Maximum	*26.5*	*114*	*19.9*		*68.1*		*12.3*		*17.3*	
		Average	*22.9*	*91.9*	*15.9*		*47.8*		*8.14*		*13.1*	

Table C-2. Subsurface Soil Grab Sampling Results for Arsenic and Lead by Parcel

Parcel # 45022.5402								
Borehole	**Sample Date**	**Units**	**0-0.5' bgs**		**0.5' - 2' bgs**		**2' - 5' bgs**	
			Arsenic	**Lead**	**Arsenic**	**Lead**	**Arsenic**	**Lead**
		MTCA Method A	**20**	250	**20**	250	**20**	250
		EPA RSL - Residential Soil	0.68	200	0.68	200	0.68	200
		Spokane Basin WA Background Concentration	9.34 / 20.83	14.91	9.34 / 20.83	14.91	9.34 / 20.83	14.91
			Result	**Result**	**Result**	**Result**	**Result**	**Result**
BH12	01/20/2025	mg/kg	**26.0**	111	10.7	30.5	9.05	21.3
BH13	01/20/2025	mg/kg	**23.4**	89.1	**22.3**	66.8	11.3	12.3
BH14	01/20/2025	mg/kg	7.49	28.4	**22.2**	49.8	4.48	7.92
BH15	01/20/2025	mg/kg	13.6	48.5	7.01	18.1	3.15	6.80
		Minimum	*7.49*	*28.4*	*7.01*	*18.1*	*3.15*	*6.80*
		Maximum	*26.0*	*111*	*22.3*	*66.8*	*11.3*	*21.3*
		Average	*17.6*	*69.3*	*15.6*	*41.3*	*7.00*	*12.1*

Parcel No. 45022.5401								
Borehole	**Sample Date**	**Units**	**0-0.5' bgs**		**0.5' - 2' bgs**		**2' - 5' bgs**	
			Arsenic	**Lead**	**Arsenic**	**Lead**	**Arsenic**	**Lead**
		MTCA Method A	**20**	250	**20**	250	**20**	250
		EPA RSL - Residential Soil	0.68	200	0.68	200	0.68	200
		Spokane Basin WA Background Concentration	9.34 / 20.83	14.91	9.34 / 20.83	14.91	9.34 / 20.83	14.91
			Result	**Result**	**Result**	**Result**	**Result**	**Result**
BH16	01/20/2025	mg/kg	15.7	65.5	12.1	22.6	12.9	8.97
BH17	01/20/2025	mg/kg	13.5	54.1	17.9	59.0	6.90	8.45
BH18	01/20/2025	mg/kg	**21.6**	61.0	17.4	35.8	5.12	9.48
BH19	01/20/2025	mg/kg	9.44	39.2	11.6	33.9	4.32	11.7
BH20	01/20/2025	mg/kg	**21.4**	91.0	13.9	45.5	5.31	7.95
		Minimum	*9.44*	*39.2*	*11.6*	*22.6*	*4.32*	*7.95*
		Maximum	*21.6*	*91*	*17.9*	*59*	*12.9*	*11.7*
		Average	*16.3*	*62.2*	*14.6*	*39.4*	*6.91*	*9.3*

Table C-2. Subsurface Soil Grab Sampling Results for Arsenic and Lead by Parcel

Table C-2 Notes

Arsenic and lead analyzed by EPA Method 6010D.

Model Toxics Control Act (MTCA) Method A cleanup levels, Table 740-1, Method A Soil Cleanup Levels for Unrestricted Land Uses. WAC 173-340-900.

EPA RSLs = EPA Regional Screening Level for the Residential Soil Pathways (EPA 2024). C = carcinogenic. NC = noncarcinogenic. Shown for informative purposes only; data were not compared against RSL values.

WA background values for Ecology Spokane Basin 90th Percentile from Table 7 of Natural Background Soil Metals Concentrations in Washington State (Ecology 1994). The 90th percentile value for As in Spokane Basin analyzed by AA is 9.34 mg/kg; while the 90th percentile value for As analyzed by ICP methodology is 20.83 mg/kg.

Bolded values exceed the MTCA Method A Cleanup Level.

* location of duplicate sample; higher concentration shown

J = concentration is estimated

bgs = below ground surface

mg/kg = milligrams per kilogram

Table C-3. Paired XRF and Confirmation Sample Data

Arsenic							
XRF Sample #	Lab Result #	Lat	Long	Time	Depth (inches)	XRF Result - As (ppm)	Lab Result (mg/kg)
1	L1819928-46	47.69669 N	117.21062 W	9:08 AM	12	11	8.55
3	L1819928-47	47.69669 N	117.21053 W	9:32 AM	12	25	9.15
4	L1819928-48	47.69656 N	117.21054 W	9:47 AM	13	43	20.1
7	L1819928-49	47.69623 N	117.21068 W	10:30 AM	13	63	28.4
8	L1819928-50	47.69617 N	117.21058 W	10:39 AM	14	22	15.6
13	L1819928-51	47.69661 N	117.20947 W	12:36 PM	14	58	51.2
14	L1819928-52	47.69668 N	117.20932 W	12:23 PM	12	34	19.7
15	L1819928-53	47.69614 N	117.20943 W	11:57 AM	13	48	37.1
20 *	L1819928-54	47.69594 N	117.20917 W	11:29 AM	16	29	27.4 / 32.9
22	L1819928-55	47.69627 N	117.20989 W	1:06 PM	15	55	31.3

Lead							
XRF Sample #	Lab Result #	Lat	Long	Time	Depth (inches)	XRF Result - Pb (ppm)	Lab Result (mg/kg)
1	L1819928-46	47.69669 N	117.21062 W	9:08 AM	12	79	24.6
3	L1819928-47	47.69669 N	117.21053 W	9:32 AM	12	258	42.1
4	L1819928-48	47.69656 N	117.21054 W	9:47 AM	13	351	63.8
7	L1819928-49	47.69623 N	117.21068 W	10:30 AM	13	132	78.5
8	L1819928-50	47.69617 N	117.21058 W	10:39 AM	14	309	53.4
13	L1819928-51	47.69661 N	117.20947 W	12:36 PM	14	115	167
14	L1819928-52	47.69668 N	117.20932 W	12:23 PM	12	114	59.5
15	L1819928-53	47.69614 N	117.20943 W	11:57 AM	13	129	79.5
20*	L1819928-54	47.69594 N	117.20917 W	11:29 AM	16	119	78.3 / 112
22	L1819928-55	47.69627 N	117.20989 W	1:06 PM	15	145	89.3

XRF = X-Ray Fluorescence
XRF Results from Ecology's XRF screening samples collected in November 2024 (Ecology, 2025a)
Lab Results indicate results from analysis of arsenic and lead by EPA Method 6010D.
* indicates location of duplicate sample. Both laboratory results are provided.

Appendix D –
Laboratory Report

Appendix E – Boring Logs

Appendix F –
Investigation Derived Waste Manifest

Graham Road Facility
1820 W Graham Road
Medical Lake, WA, 99022 Ph: (509)244-0151

Reprint
Ticket# 746562

Customer Name NWESTCO NWESTCO LLC
Ticket Date 04/17/2025
Payment Type Credit Account
Manual Ticket#
Route
Hauling Ticket#
Destination
Manifest 116999wa
Profile 116999WA (IDW: LF01)
Generator 133-NWESTCO 5308 NWESTCO 5308 N MYRTLE ST SPOKANE WA 99217
PO# 197623

Carrier ABLECLEANUP ABLE CLEANUP TECHNOLOGIE
Vehicle# 1
Container
Driver
Check#
Billing# 0002032
Grid

	Time	Scale	Operator	Inbound		
In	04/17/2025 14:18:27	Scale1	amahurin		Gross	17500 lb
Out	04/17/2025 14:35:57	Scale1	amahurin		Tare	17060 lb
					Net	440 lb
					Tons	0.22

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Cont Soil Pet-RGC-Tons-	100	0.22	Tons				SPOKANE
2	ENERGY-Energy Surcharge	100		%				SPOKANE
3	WWM-P-Waste Water Manag	100		%				SPOKANE
4	SRHD1-Spokane Regional	100	0.22	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver`s Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technic
limitation.

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

Shipper's No. _____

Carrier Nwestco SCAC _____ Carrier's No. 197023

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at 14502 E Rockwell Ave date 3/26/25 from Alta

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to
Nwestco

Destination Nwestco shop **State** WA **County** Spokane **Zip** 99217 **Delivery Address** 5308 N Myrtle st

Route
Trent Ave – N Freya st

Delivering Carrier Nwestco **Vehicle Number** LT161

Number of Packages	Description of Articles	Weight (sub. to correction)	Class or Rate
1	55gal steel drum IDW water	250	

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

FREIGHT CHARGES:
Prepaid ☐
Collect ☐

COD AMT:
$

TOTAL CHARGES:
$ _____

Collect On Delivery $ | **and remit to** | **COD FEE:** $ | Prepaid ☐ Collect ☐

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ _____ per _____

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

Shipper: Nwestco on Rehatic Carrier: Nwestco

Per: _____ Date: 3/26/25 Per: _____ Date: 3/26/25

201-BLC-Q 3 12462

1

TERMS AND CONDITIONS

By giving the carrier the property described in this bill of lading (the "Property"), you agree to all of the terms of this bill of lading.

Section 1 Limitations of Liability

(a) The carrier or party in possession of the Property shall be liable as at common law for any loss of or damage to such Property, except as hereinafter provided.

(b) The carrier shall not be liable for loss of, damage to or delay in delivery of the Property:
(i) caused by an act of God, the public enemy, the authority of law, or any act or default by you and/or the owner of the Property, or for natural shrinkage.
(ii) occurring while the Property is stopped and held in transit at your request or that of any other party entitled to make such request.
(iii) resulting from a defect or vice in the Property, or from riots or strikes.

(c) To the extent permitted under the Carmark Amendment, the liability of the carrier for the Property may be limited to a value established by written or electronic declaration by you or by written agreement between the carrier and you. In all cases not prohibited by law, where a lower value than actual value has been represented in writing by the shipper or has been agreed upon in writing as the released value of the Property as determined by the classification or tariffs upon which the rate is based, such lower value plus freight charges if paid shall be the maximum amount to be recovered, whether or not such loss or damage occurs from negligence.

Section 2 Filing of Claims

(a) Claims against the carrier for loss of or damage to the Property must be filed in writing with the carrier issuing this bill of lading within nine months after delivery of the Property (or, in case of export traffic, within nine months after delivery at port of export) or, in case of failure to make delivery, then within nine months after a reasonable time for delivery has elapsed. All causes of action must be instituted within two years following the date when written notice is given by the carrier to you that the carrier has disallowed the claim or any part or parts thereof specified in the notice. If your claim or action is not filed or instituted property in accordance with the foregoing provisions, the carrier shall not be liable, and such claims may not be paid.

(b) The carrier shall have the full benefit of any insurance that may have been effected upon or on account of the Property in the event that the carrier is liable for loss of or damage to the Property.

Section 3 Method of Transportation

Except as expressly agreed in writing by the parties to this bill of lading, the carrier is not bound to transport the Property by any particular motor vehicle, or in time for any particular market or otherwise than with reasonable dispatch. The carrier shall have the right in case of physical necessity to forward said Property by any carrier or route between the point of shipment and the point of destination.

Section 4 Responsibility for Property

(a) If the Property is not removed by the party entitled to receive it within the free time allowed by tariffs or classifications upon which the rate is based, (such free time to be computed as therein provided), the carrier may notify the receiving party of the arrival of the Property at the destination or at the port of export (if intended for export). The carrier, in its discretion, may store the Property in a public or licensed warehouse at the place of delivery or other available place, at the cost of the owner. The stored Property will be subject to a lien for all freight and other lawful charges, including a reasonable charge for storage. The carrier's responsibility shall be that of a warehouseman only.

(b) Except as provided in subparagraph 4(c) below, if the Property is refused by consignee or the party entitled to receive it, or said consignee or party entitled to receive it fails to receive it within 15 days after notice of arrival shall have been duly sent or given, the carrier may sell the Property at public auction to the highest bidder, at such place as may be designated by the carrier. Prior to any such sale, the carrier shall use commercially reasonable efforts to notify you that the Property has been refused or remains undelivered, as the case may be, and that it will be subject to sale under the terms of the bill of lading if you do not arrange for an alternative disposition.

(c) If the Property is perishable and is refused by the consignee or party entitled to receive it at the destination location, or said consignee or party entitled to receive it shall fail to receive it promptly, the carrier, may, in its discretion, to prevent deterioration or further deterioration, sell the same to the best advantage at private or public sale. Prior to selling the Property, the carrier shall use commercially reasonable efforts to notify you of the refusal of the Property or the failure to receive it, and request instructions regarding disposition of the Property.

(d) If the procedure described in subsection (b) and (c) is not commercially reasonable, the carrier may, at its option, sell the Property under such circumstances and in such manner as may be authorized by law.

(e) The carrier shall apply the proceeds of any sale made under this section to the payment of freight, demurrage, storage, and any other lawful charges and the expense of notice, advertisement, sale, and other necessary expenses and of caring for and maintaining the Property, if proper care of the same requires special expense. If following payment of the preceding there is a balance, such balance shall be paid to the owner of the Property sold hereunder.

(f) If you direct the carrier to deliver the Property to a location where there is no regularly appointed freight agent, the carrier shall not be liable for any loss or damage to Property occurring at such location after the Property has been unloaded at such location.

Section 5 Valuable Items

(a) The carrier's liability in connection with the Property is limited to the lesser of the amount of your actual damages or the declared value stipulated by the carrier on the face of this bill of lading plus any freight charges paid by you.

(b) The carrier shall not be liable in any way for any documents, specie, or for any articles of extraordinary value not specifically rated in the published classifications or tariffs unless a special agreement to do so and a stipulated value of the articles are endorsed on this bill of lading.

Section 6 Joint Liability for Hazardous Goods

You, and if you are an agent, any owner of the Property, shall be joint and severally liable for and indemnify the carrier against all loss or damage caused by the shipment of explosives, dangerous or hazardous goods, without giving prior written notice to the carrier of their nature. At the discretion of the carrier, any such goods may be warehoused at your and the owner's risk and expense or destroyed without compensation.

Section 7 Freight Charges and Payment

(a) You are primarily responsible for the freight and all other lawful charges, unless you stipulate in writing in the space provided for that purpose on the face of this bill of lading that the carrier shall not make delivery without requiring payment of such charges and the carrier makes delivery without requiring such payment. If you provide erroneous information that results in the shipment being reconsigned or diverted to a location other than the location identified in the original bill of lading, you shall be liable for such additional charges. The respective liability of you and the consignee for additional charges provided for herein shall be pursuant to 49 U.S.C. § 13706.

(b) Nothing in this bill of lading shall limit the right of the carrier to require the prepayment or guarantee of charges at time of shipment. If upon inspection the carrier determines that the articles shipped are not those described in this bill of lading, the freight charges must be paid upon the articles actually shipped.

Section 8 Effect of Shipper Signature

If this bill of lading is issued on the order of the shipper, or his agent, in exchange or in substitution for another bill of lading, the shipper's signature to the prior bill of lading as to the statement of value or otherwise, or election or common law or bill of lading liability, in or in connection with such prior bill of lading, shall be considered a part of this bill of lading as fully as if the same were written or made in or in connection with this bill of lading.

Section 9 Transport by Water

If all or any part of the Property is carried by water over any part of said route, and any loss of or damage to the Property occurs while it is in the custody of the carrier providing the water carriage, the liability of such carrier shall be determined by that carrier's bill of lading and by the laws and regulations applicable to transportation by water. Such water carriage shall be performed subject to all of the terms and provisions of, and all the exemptions from liability contained in the Harter Act or the Carriage of Goods By Sea Act, as applicable.

Appendix G –
QA/QC Memoranda

Alta Science & Engineering, Inc.

alta-se.com

988 South Longmont Avenue, Suite 200
Boise, Idaho 83706
Ph: (208) 336-7080; Fax: (208) 908-4980

INTERNAL MEMORANDUM

To: Sarah Weppner, Project Manager

From: Allison Marshall, Quality Assurance Officer

Date: February 27, 2025

Contract No./Title: 68HERH19D0017/TO 68HE0722F0096

Alta Project No.: 22136.093

Subject: **QA/QC Review of the January 2025 Phase II Environmental Site Assessment at Rockwell Apartments, Spokane Valley, WA**

1 Introduction

This internal memorandum provides a summary of the data validation performed and the resulting data quality for the soil results from the sampling efforts that occurred between January 17-20, 2025 for the Rockwell Apartments Site located at 14502, 14503, 14517, and 14526 East Rockwell Avenue, Spokane Valley, Washington.

Alta Science & Engineering Inc.'s (Alta's) quality assurance/quality control (QA/QC) review followed guidelines set forth in the following documents:

- *Quality Assurance Project Plan for Phase II Environmental Site Assessment – Rockwell Apartments, Spokane Valley, WA* (ERG 2024), hereinafter referred to as the QAPP.
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA 2020), hereinafter referred to as the NFG-Inorganics.
- *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (EPA 2009).
- *Guidance on Environmental Data Verification and Data Validation* (EPA 2002).

This memorandum discusses the data validation and quality review performed for the Sample Delivery Group (SDG) listed in Table 1. Data qualifiers used in this review are defined by the U.S. Environmental Protection Agency (EPA; 2020). The final qualified data are included in Attachment A.

Table 1. SDG Stage 2A[a] Data Validation Summary Conducted by Alta

Laboratory[b]	SDG	Matrix	COCs[c]	NFG Guidance[d]
Pace	L1819928	Soil	Total Arsenic Total Lead	Inorganic: ICP-AES

Footnotes:

[a] Data validation level based on EPA 2009.

[b] Pace = Pace National Analytical Laboratory, Inc. in Mt. Juliet, Tennessee

[c] Constituents of concern (COCs) included total lead and total arsenic EPA Method 6010D (EPA 2018).

[d] Data qualifications applied per National Functional Guidelines (NFG) for Superfund Methods Inorganic Data Review (EPA 2020).

2 Data Validation and Quality Review Summary

Alta's Stage 2A validation of the analytical data and review of the field data are summarized in Table 2. Procedures/checks that require further discussion are explained below the table, as necessary.

Table 2. Data Quality Review Summary for Soil

Data Validation Procedure or Check	Acceptable Frequency? [a]	Acceptable Performance? [b]	Data Qualified?	Discussion Item Number
General Data Review				
Sample condition upon receipt at laboratory	--	Y	N	
Preservation (temperature and in-field preservative, if applicable)	--	Y	N	
Laboratory followed specified analytical methods, preparation methods, and shows analysis dates	--	Y	N	
Holding times	--	Y	N	
Requested target analyte results are reported with lab qualifiers and units	--	Y	N	
Sensitivity Assessment				
Requested reporting limits are present	--	Y	N	1
Method Blanks	Y	Y	N	
Accuracy Assessment				

Table 2. Data Quality Review Summary for Soil

Data Validation Procedure or Check	Acceptable Frequency? [a]	Acceptable Performance? [b]	Data Qualified?	Discussion Item Number
Laboratory Control Samples (LCS)	Y	Y	N	
Matrix Spikes (MS)	Y	N	Y	2
Serial Dilution	Y	N	Y	3
Precision Assessment				
Laboratory Control Sample Duplicate (LCSD)	Y	--	N	4
Matrix Spike Duplicates (MSD)	Y	N	Y	5
Field Duplicates (Table 3)	Y	N	Y	6
X-Ray Fluorescence (XRF) Assessment				
XRF Confirmation Samples (Table 4)	Y	N	N	7

[a] Frequencies as defined in the QAPP (ERG 2024).
[b] As defined in the QAPP (ERG 2024) or based on professional judgment of the data validator.
-- = not applicable

Discussion Item

1. **Requested method detection limits (MDLs) and reporting limits (RLs) are present:** To assess the sensitivity of the sample results, Alta requested MDLs and RLs, presented in Appendix A of the QAPP (ERG 2024). The MDLs and RLs for certain samples were greater than requested. However, the MDLs were less than the associated Model Toxics Control Act (MTCA) Method A Cleanup Levels and, therefore, sensitivity is not a concern.
2. **MS:** The laboratory analyzed site-specific MS samples at a ratio of at least 1 MSD sample for every 20 field samples, which meets the QAPP guidelines. All percent recoveries (%Rs) were within acceptable laboratory limits except for the following instances:
    a. The %R for lead was above the laboratory limit in MS and/or MSD analyses conducted on field samples RWA-BH11-SC-0'-0.5' and RWA-XRF22-SG-15". Therefore, the results of these samples are qualified as estimated (J).
3. **Serial Dilution**: The laboratory qualified the concentration of lead in field sample RWA-BH11-SC-0.5'-2' as “O1” indicating that the analyte failed a serial dilution test, indicating matrix interference. Therefore, this result was qualified as estimated (J).
4. **LCSD:** The QAPP notes that an MSD or LCSD analyzed at a frequency of 1 per 20 samples is sufficient for the project. The laboratory did not analyze an LCSD, but did analyze an MSD at a frequency of 1 per 20 samples. The QAPP requirements were met; therefore, no data are qualified.
5. **MSD:** The laboratory analyzed paired site-specific MS/MSD samples at a ratio of at least 1 MS/MSD sample for every 20 field samples, which meets the QAPP guidelines. All relative percent differences (RPDs) were within acceptable laboratory limits except for the following instance:

   a. The RPDs for arsenic and lead in the MS/MSD analysis conducted on field sample RWA-XRF22-SG-15" were above the laboratory limit. Therefore, these results are qualified as estimated (J).

6. **Field Duplicate**: The Alta field crew collected 4 duplicate samples from 70 soil field samples, which meets the QAPP criteria of 1 duplicate sample for every 20 field samples. Table 3 includes the calculated RPD for the soil duplicate pairs with detected concentrations greater than five times the reporting limit. For sample results with detected concentrations less than five times the reporting limit, Alta assessed precision by comparing the absolute difference between the original and duplicate sample concentrations to the reporting limit.

   In certain field duplicate pairs, the RPD for lead and/or arsenic were greater than the QAPP RPD goal of 50%, or the absolute difference between the original and duplicate sample concentrations was greater than the reporting limit. This may indicate soil heterogeneity in these locations and therefore the original and duplicate sample results in these samples will be qualified as estimated (J).

7. **XRF Confirmation Samples**: From 22 XRF screening samples collected by Washington Department of Ecology (Ecology), Alta field staff selected 10 confirmation samples for laboratory analysis as guided in the QAPP (ERG 2024). Ecology staff air-dried, sieved and analyzed each sample using XRF prior to Alta submitting the samples for laboratory analysis. Ecology provided the XRF results to Alta for comparison to laboratory results. However, Alta did not confirm that the quality control checks outlined in EPA Method 6200 (e.g., analysis of blanks, calibration verification, or precision checks) were completed by Ecology during XRF analysis and did not include XRF results in this data quality review.

   Alta did conduct a confirmatory analysis of the paired XRF and laboratory data for both arsenic and lead (see Table 4 for results). Paired results were evaluated using a least squares linear regression after log-transforming the data. The coefficient of determination (r^2) for the results should be 0.7 or greater for the XRF data to be considered screening level data (EPA 2007). Higher r^2 results indicate better correlation between the XRF data and the laboratory data. Soil heterogeneity is one factor that may contribute to lower correlations. Results are summarized below with the full regression analysis included in Attachment B.

   a. The r^2 for arsenic is 0.71, indicating that comparability is sufficient and the XRF data are considered screening level data.
   b. The r^2 for lead is 0.0025, which does not meet the threshold for screening purposes.

Table 3. Field Duplicate Sample Analysis for Soil

Sample ID	Sample Date	Analyte	Original Concentration (mg/kg)	Duplicate Concentration (mg/kg)	RPD
RWA-BH7-SC-0'-0.5' / RWA-BH7-SC-0'-0.5'-DUP	1/17/2025	ARSENIC	15.3	26	**52%**
		LEAD	86.4	144	50%
RWA-BH7-SC-0.5'-2' / RWA-BH7-SC-0.5'-2'-DUP	1/17/2025	ARSENIC	14.4	5.19	**NC - P**
		LEAD	50.2	7.94	**145%**
RWA-BH7-SC-2'-5' / RWA-BH7-SC-2'-5'-DUP	1/17/2025	ARSENIC	6.3	18.1	**NC - P**
		LEAD	11.6	55.5	**131%**
RWA-XRF20-SG-16" / RWA-XRF20-SG-16"-DUP	11/18/2024	ARSENIC	27.4	32.9	18%
		LEAD	78.3	112	35%

Notes:

RPD = |X1-X2|/((X1+X2)/2)*100

Where: X1 = Original Concentration and X2 = Duplicate Concentration

Bold RPD results indicate exceedance of QAPP Data Quality Indicators.

NA = Not applicable; either the original or duplicate concentrations were not detected above the method detection limit shown.

NC-P = non-calculable-precision; the original and/or duplicate concentrations were less than 5x analyte-specific reporting limits and the |original concentration - duplicate concentration| > analyte-specific reporting limit.

mg/kg = milligrams per kilogram

Table 4. Paired XRF and Laboratory Data for Arsenic and Lead

XRF Sample #	Lab Result #	XRF Reading - arsenic (ppm)	Laboratory Result (mg/kg)
1	L1819928-46	11	8.55
3	L1819928-47	25	9.15
4	L1819928-48	43	20.1
7	L1819928-49	63	28.4
8	L1819928-50	22	15.6
13	L1819928-51	58	51.2
14	L1819928-52	34	19.7
15	L1819928-53	48	37.1
20	L1819928-54	29	27.4
22	L1819928-55	55	31.3

XRF Sample #	Lab Result #	XRF Reading - lead (ppm)	Laboratory Result (mg/kg)
1	L1819928-46	79	24.6
3	L1819928-47	258	42.1
4	L1819928-48	351	63.8
7	L1819928-49	132	78.5
8	L1819928-50	309	53.4
13	L1819928-51	115	167
14	L1819928-52	114	59.5
15	L1819928-53	129	79.5
20	L1819928-54	119	78.3
22	L1819928-55	145	89.3

XRF = X-ray Fluorescence
ppm = parts per million
mg/kg = milligrams per kilogram

3 Overall Assessment

Based on this data quality review, Alta determines the laboratory and field data to be of acceptable quality except for the qualifications that are discussed in the subsections below. The final qualified data are included in Attachment A. Regression analysis results are included in Attachment B.

3.1 General Data Review

Alta's Quality Assurance Officer (QAO) did not qualify any data based on sample handling, tracking, and reporting. Data meet the data quality objectives for representativeness and comparability, with the exceptions discussed below.

3.2 Data Sensitivity

Alta's QAO did not qualify any data based on data sensitivity; however, the MDLs and RLs for certain samples were greater than requested. All MDLs were less than the associated MTCA Method A Cleanup Levels; therefore, sensitivity is not a concern.

3.3 Data Accuracy and Precision

Accuracy and precision are also considered acceptable, with the exceptions discussed below.

3.3.1 Accuracy

Alta's QAO qualified the following data based on accuracy results (LCS recoveries or MS recoveries).

- The lead result in field sample RWA-BH11-SC-0.5'-2' was qualified as estimated (J) due to matrix interference during the laboratory serial dilution test.
- The results for lead in field samples RWA-BH11-SC-0'-0.5' and RWA-XRF22-SG-15" are qualified as estimated due to %R in the MS and/or MSD analysis.

3.3.2 Precision

Alta's QAO qualified the following data based on precision results (MSD, LCSD, or field duplicate).

- The arsenic and lead results in sample RWA-XRF22-SG-15" are qualified as estimated (J) due to an RPD above the laboratory limit in the MS/MSD analysis.
- The lead and/or arsenic results were qualified as estimated (J) in certain field duplicate pairs due to an RPD in the field duplicate above the QAPP RPD goal of 50%, or the difference between the original and duplicate concentrate above the reporting limit.

3.4 XRF Assessment

Ten confirmatory samples and paired XRF results were evaluated using a least squares linear regression after log-transforming the data. Based on the results (r^2 = 0.71 for arsenic and r^2 = 0.0025 for lead), the XRF data for arsenic are considered screening level data, while the XRF data for lead did not meet the threshold for use as screening purposes.

3.5 Data Usability

The Alta QAO did not reject any results. Therefore, according to the QAPP (ERG 2024), the completeness for this sampling event is calculated at 100%.

4 References and Resources Used

Eastern Research Group, Inc. (ERG), 2024. Quality Assurance Project Plan for Phase II Environmental Site Assessment – Rockwell Apartments, Spokane Valley, WA. December.

US Environmental Protection Agency (EPA), 2002. EPA Guidance on Environmental Data Verification and Data Validation. EPA QA/G-8; November.

USEPA, 2007. Method 6200. Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment. February.

EPA, 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85, EPA 540-R-08-005 prepared by the Office of Solid Waste and Emergency Response; January.

EPA, 2018. "Method 6010D (SW-846): Inductively Coupled Plasma-Optical Emission Spectrometry," Revision 5. Washington, DC.

EPA, 2020. National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA 542-R-20-006. November.

Attachment A
Qualified Laboratory Data

SDG	Lab Sample ID	Client Sample ID	Date Collected	Matrix	Method	Analyte	Units	Dilution	Result Sign	Result	Lab Qualifier	Lab Qualifier Reason	Data Validation Result	Data Validation Qualifier	Validation Qual Reason	MDL	RDL	Final Result	Final Qualifier
L1819928	L1819928-01	RWA-BH1-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		31.7						0.837	2	31.7	
L1819928	L1819928-01	RWA-BH1-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		138						0.326	0.5	138	
L1819928	L1819928-02	RWA-BH1-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		15.4						0.837	2	15.4	
L1819928	L1819928-02	RWA-BH1-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		49.7						0.326	0.5	49.7	
L1819928	L1819928-03	RWA-BH1-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		15						0.837	2	15	
L1819928	L1819928-03	RWA-BH1-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		14.7						0.326	0.5	14.7	
L1819928	L1819928-04	RWA-BH2-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		16.1						0.837	2	16.1	
L1819928	L1819928-04	RWA-BH2-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		85.9						0.326	0.5	85.9	
L1819928	L1819928-05	RWA-BH2-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		7.59						0.837	2	7.59	
L1819928	L1819928-05	RWA-BH2-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		22						0.326	0.5	22	
L1819928	L1819928-06	RWA-BH2-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		9.29						0.837	2	9.29	
L1819928	L1819928-06	RWA-BH2-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		7.31						0.326	0.5	7.31	
L1819928	L1819928-07	RWA-BH3-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		17.4						0.837	2	17.4	
L1819928	L1819928-07	RWA-BH3-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		99.7						0.326	0.5	99.7	
L1819928	L1819928-08	RWA-BH3-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		8.67						0.837	2	8.67	
L1819928	L1819928-08	RWA-BH3-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		52.6						0.326	0.5	52.6	
L1819928	L1819928-09	RWA-BH3-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		6.56						0.837	2	6.56	
L1819928	L1819928-09	RWA-BH3-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		9.24						0.326	0.5	9.24	
L1819928	L1819928-10	RWA-BH4-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		37.8						0.837	2	37.8	
L1819928	L1819928-10	RWA-BH4-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		164						0.326	0.5	164	
L1819928	L1819928-11	RWA-BH4-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		49.2						0.837	2	49.2	
L1819928	L1819928-11	RWA-BH4-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		89.8						0.326	0.5	89.8	
L1819928	L1819928-12	RWA-BH4-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		5.67						0.837	2	5.67	
L1819928	L1819928-12	RWA-BH4-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		20.8						0.326	0.5	20.8	
L1819928	L1819928-13	RWA-BH5-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		14						0.837	2	14	
L1819928	L1819928-13	RWA-BH5-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		76.4						0.326	0.5	76.4	
L1819928	L1819928-14	RWA-BH5-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		12.6						0.837	2	12.6	
L1819928	L1819928-14	RWA-BH5-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		34.7						0.326	0.5	34.7	
L1819928	L1819928-15	RWA-BH5-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		4.11						0.837	2	4.11	
L1819928	L1819928-15	RWA-BH5-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		16.1						0.326	0.5	16.1	
L1819928	L1819928-16	RWA-BH6-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		12.3						0.837	2	12.3	
L1819928	L1819928-16	RWA-BH6-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		54.9						0.326	0.5	54.9	
L1819928	L1819928-17	RWA-BH6-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		23.9						0.837	2	23.9	
L1819928	L1819928-17	RWA-BH6-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		89.8						0.326	0.5	89.8	
L1819928	L1819928-18	RWA-BH6-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		5.7						0.837	2	5.7	
L1819928	L1819928-18	RWA-BH6-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		7.1						0.326	0.5	7.1	
L1819928	L1819928-19	RWA-BH7-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		15.3			15.3	J	Field dup RPD	0.837	2	15.3	J
L1819928	L1819928-19	RWA-BH7-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		86.4						0.326	0.5	86.4	
L1819928	L1819928-20	RWA-BH7-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		14.4			14.4	J	Field dup RPD	0.837	2	14.4	J
L1819928	L1819928-20	RWA-BH7-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		50.2			50.2	J	Field dup RPD	0.326	0.5	50.2	J
L1819928	L1819928-21	RWA-BH7-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		6.3			6.3	J	Field dup RPD	0.837	2	6.3	J
L1819928	L1819928-21	RWA-BH7-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		11.6			11.6	J	Field dup RPD	0.326	0.5	11.6	J
L1819928	L1819928-22	RWA-BH7-SC-0'-0.5'-DUP	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		26			26	J	Field dup RPD	0.837	2	26	J
L1819928	L1819928-22	RWA-BH7-SC-0'-0.5'-DUP	01/17/2025	SS	6010D	LEAD	mg/kg	1		144						0.326	0.5	144	
L1819928	L1819928-23	RWA-BH7-SC-0.5'-2'-DUP	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		5.19			5.19	J	Field dup RPD	0.837	2	5.19	J
L1819928	L1819928-23	RWA-BH7-SC-0.5'-2'-DUP	01/17/2025	SS	6010D	LEAD	mg/kg	1		7.94			7.94	J	Field dup RPD	0.326	0.5	7.94	J
L1819928	L1819928-24	RWA-BH7-SC-2'-5'-DUP	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		18.1			18.1	J	Field dup RPD	0.837	2	18.1	J
L1819928	L1819928-24	RWA-BH7-SC-2'-5'-DUP	01/17/2025	SS	6010D	LEAD	mg/kg	1		55.5			55.5	J	Field dup RPD	0.326	0.5	55.5	J
L1819928	L1819928-25	RWA-BH8-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		24.3						0.837	2	24.3	
L1819928	L1819928-25	RWA-BH8-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		99.6						0.326	0.5	99.6	
L1819928	L1819928-26	RWA-BH8-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		19.9						0.837	2	19.9	
L1819928	L1819928-26	RWA-BH8-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		68.1						0.326	0.5	68.1	
L1819928	L1819928-27	RWA-BH8-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		4.11						0.837	2	4.11	
L1819928	L1819928-27	RWA-BH8-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		16.7						0.326	0.5	16.7	
L1819928	L1819928-28	RWA-BH9-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		23.3						0.837	2	23.3	
L1819928	L1819928-28	RWA-BH9-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		85.6						0.326	0.5	85.6	
L1819928	L1819928-29	RWA-BH9-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		16.7						0.837	2	16.7	
L1819928	L1819928-29	RWA-BH9-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		51.5						0.326	0.5	51.5	
L1819928	L1819928-30	RWA-BH9-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		5.34						0.837	2	5.34	
L1819928	L1819928-30	RWA-BH9-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		9.7						0.326	0.5	9.7	
L1819928	L1819928-31	RWA-BH10-SC-0'-0.5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		26.5						0.837	2	26.5	
L1819928	L1819928-31	RWA-BH10-SC-0'-0.5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		114						0.326	0.5	114	
L1819928	L1819928-32	RWA-BH10-SC-0.5'-2'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		17.3						0.837	2	17.3	
L1819928	L1819928-32	RWA-BH10-SC-0.5'-2'	01/17/2025	SS	6010D	LEAD	mg/kg	1		38.5						0.326	0.5	38.5	
L1819928	L1819928-33	RWA-BH10-SC-2'-5'	01/17/2025	SS	6010D	ARSENIC	mg/kg	1		12.3						0.837	2	12.3	
L1819928	L1819928-33	RWA-BH10-SC-2'-5'	01/17/2025	SS	6010D	LEAD	mg/kg	1		17.3						0.326	0.5	17.3	
L1819928	L1819928-34	RWA-BH11-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		17.5						0.837	2	17.5	
L1819928	L1819928-34	RWA-BH11-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		68.3	J5	High MS %R	68.3	J	High MS %R	0.326	0.5	68.3	J
L1819928	L1819928-35	RWA-BH11-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		9.6						0.837	2	9.6	
L1819928	L1819928-35	RWA-BH11-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		33.2	O1	Failed serial dilution	33.2	J	Failed serial dilution	0.326	0.5	33.2	J
L1819928	L1819928-36	RWA-BH11-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		10.8						0.837	2	10.8	
L1819928	L1819928-36	RWA-BH11-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		8.72						0.326	0.5	8.72	
L1819928	L1819928-37	RWA-BH12-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		26						0.837	2	26	
L1819928	L1819928-37	RWA-BH12-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		111						0.326	0.5	111	
L1819928	L1819928-38	RWA-BH12-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		10.7						0.837	2	10.7	
L1819928	L1819928-38	RWA-BH12-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		30.5						0.326	0.5	30.5	

SDG	Lab Sample ID	Client Sample ID	Date Collected	Matrix	Method	Analyte	Units	Dilution	Result Sign	Result	Lab Qualifier	Lab Qualifier Reason	Data Validation Result	Data Validation Qualifier	Validation Qual Reason	MDL	RDL	Final Result	Final Qualifier
L1819928	L1819928-39	RWA-BH12-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		9.05						0.837	2	9.05	
L1819928	L1819928-39	RWA-BH12-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		21.3						0.326	0.5	21.3	
L1819928	L1819928-40	RWA-BH13-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		23.4						0.837	2	23.4	
L1819928	L1819928-40	RWA-BH13-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		89.1						0.326	0.5	89.1	
L1819928	L1819928-41	RWA-BH13-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		22.3						0.837	2	22.3	
L1819928	L1819928-41	RWA-BH13-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		66.8						0.326	0.5	66.8	
L1819928	L1819928-42	RWA-BH13-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		11.3						0.837	2	11.3	
L1819928	L1819928-42	RWA-BH13-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		12.3						0.326	0.5	12.3	
L1819928	L1819928-43	RWA-BH14-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		7.49						0.837	2	7.49	
L1819928	L1819928-43	RWA-BH14-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		28.4						0.326	0.5	28.4	
L1819928	L1819928-44	RWA-BH14-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		22.2						0.837	2	22.2	
L1819928	L1819928-44	RWA-BH14-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		49.8						0.326	0.5	49.8	
L1819928	L1819928-45	RWA-BH14-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		4.48						0.837	2	4.48	
L1819928	L1819928-45	RWA-BH14-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		7.92						0.326	0.5	7.92	
L1819928	L1819928-46	RWA-XRF1-SG-12"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		8.55						0.837	2	8.55	
L1819928	L1819928-46	RWA-XRF1-SG-12"	11/18/2024	SS	6010D	LEAD	mg/kg	1		24.6						0.326	0.5	24.6	
L1819928	L1819928-47	RWA-XRF3-SG-12"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		9.15						0.837	2	9.15	
L1819928	L1819928-47	RWA-XRF3-SG-12"	11/18/2024	SS	6010D	LEAD	mg/kg	1		42.1						0.326	0.5	42.1	
L1819928	L1819928-48	RWA-XRF4-SG-13"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		20.1						0.837	2	20.1	
L1819928	L1819928-48	RWA-XRF4-SG-13"	11/18/2024	SS	6010D	LEAD	mg/kg	1		63.8						0.326	0.5	63.8	
L1819928	L1819928-49	RWA-XRF7-SG-13"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		28.4						0.837	2	28.4	
L1819928	L1819928-49	RWA-XRF7-SG-13"	11/18/2024	SS	6010D	LEAD	mg/kg	1		78.5						0.326	0.5	78.5	
L1819928	L1819928-50	RWA-XRF8-SG-14"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		15.6						0.837	2	15.6	
L1819928	L1819928-50	RWA-XRF8-SG-14"	11/18/2024	SS	6010D	LEAD	mg/kg	1		53.4						0.326	0.5	53.4	
L1819928	L1819928-51	RWA-XRF13-SG-14"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		51.2						0.837	2	51.2	
L1819928	L1819928-51	RWA-XRF13-SG-14"	11/18/2024	SS	6010D	LEAD	mg/kg	1		167						0.326	0.5	167	
L1819928	L1819928-52	RWA-XRF14-SG-12"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		19.7						0.837	2	19.7	
L1819928	L1819928-52	RWA-XRF14-SG-12"	11/18/2024	SS	6010D	LEAD	mg/kg	1		59.5						0.326	0.5	59.5	
L1819928	L1819928-53	RWA-XRF15-SG-13"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		37.1						0.837	2	37.1	
L1819928	L1819928-53	RWA-XRF15-SG-13"	11/18/2024	SS	6010D	LEAD	mg/kg	1		79.5						0.326	0.5	79.5	
L1819928	L1819928-54	RWA-XRF20-SG-16"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		27.4						0.837	2	27.4	
L1819928	L1819928-54	RWA-XRF20-SG-16"	11/18/2024	SS	6010D	LEAD	mg/kg	1		78.3						0.326	0.5	78.3	
L1819928	L1819928-55	RWA-XRF22-SG-15"	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		31.3	J3	High MS/MSD RPD	31.3	J	High MS/MSD RPD	0.837	2	31.3	J
L1819928	L1819928-55	RWA-XRF22-SG-15"	11/18/2024	SS	6010D	LEAD	mg/kg	1		89.3	J3 J5	High MS/MSD RPD; High MSD %R	89.3	J	High MS/MSD RPD; High MSD %R	0.326	0.5	89.3	J
L1819928	L1819928-56	RWA-XRF20-SG-16"-DUP	11/18/2024	SS	6010D	ARSENIC	mg/kg	1		32.9						0.837	2	32.9	
L1819928	L1819928-56	RWA-XRF20-SG-16"-DUP	11/18/2024	SS	6010D	LEAD	mg/kg	1		112						0.326	0.5	112	
L1819928	L1819928-57	RWA-BH15-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		13.6						0.837	2	13.6	
L1819928	L1819928-57	RWA-BH15-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		48.5						0.326	0.5	48.5	
L1819928	L1819928-58	RWA-BH15-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		7.01						0.837	2	7.01	
L1819928	L1819928-58	RWA-BH15-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		18.1						0.326	0.5	18.1	
L1819928	L1819928-59	RWA-BH15-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		3.15						0.837	2	3.15	
L1819928	L1819928-59	RWA-BH15-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		6.8						0.326	0.5	6.8	
L1819928	L1819928-60	RWA-BH16-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		15.7						0.837	2	15.7	
L1819928	L1819928-60	RWA-BH16-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		65.5						0.326	0.5	65.5	
L1819928	L1819928-61	RWA-BH16-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		12.1						0.837	2	12.1	
L1819928	L1819928-61	RWA-BH16-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		22.6						0.326	0.5	22.6	
L1819928	L1819928-62	RWA-BH16-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		12.9						0.837	2	12.9	
L1819928	L1819928-62	RWA-BH16-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		8.97						0.326	0.5	8.97	
L1819928	L1819928-63	RWA-BH17-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		13.5						0.837	2	13.5	
L1819928	L1819928-63	RWA-BH17-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		54.1						0.326	0.5	54.1	
L1819928	L1819928-64	RWA-BH17-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		17.9						0.837	2	17.9	
L1819928	L1819928-64	RWA-BH17-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		59						0.326	0.5	59	
L1819928	L1819928-65	RWA-BH17-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		6.9						0.837	2	6.9	
L1819928	L1819928-65	RWA-BH17-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		8.44						0.326	0.5	8.44	
L1819928	L1819928-66	RWA-BH18-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		21.6						0.837	2	21.6	
L1819928	L1819928-66	RWA-BH18-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		61						0.326	0.5	61	
L1819928	L1819928-67	RWA-BH18-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		17.4						0.837	2	17.4	
L1819928	L1819928-67	RWA-BH18-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		35.8						0.326	0.5	35.8	
L1819928	L1819928-68	RWA-BH18-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		5.12						0.837	2	5.12	
L1819928	L1819928-68	RWA-BH18-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		9.48						0.326	0.5	9.48	
L1819928	L1819928-69	RWA-BH19-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		9.44						0.837	2	9.44	
L1819928	L1819928-69	RWA-BH19-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		39.2						0.326	0.5	39.2	
L1819928	L1819928-70	RWA-BH19-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		11.6						0.837	2	11.6	
L1819928	L1819928-70	RWA-BH19-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		33.9						0.326	0.5	33.9	
L1819928	L1819928-71	RWA-BH19-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		4.32						0.837	2	4.32	
L1819928	L1819928-71	RWA-BH19-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		11.7						0.326	0.5	11.7	
L1819928	L1819928-72	RWA-BH20-SC-0'-0.5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		21.4						0.837	2	21.4	
L1819928	L1819928-72	RWA-BH20-SC-0'-0.5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		91						0.326	0.5	91	
L1819928	L1819928-73	RWA-BH20-SC-0.5'-2'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		13.9						0.837	2	13.9	
L1819928	L1819928-73	RWA-BH20-SC-0.5'-2'	01/20/2025	SS	6010D	LEAD	mg/kg	1		45.5						0.326	0.5	45.5	
L1819928	L1819928-74	RWA-BH20-SC-2'-5'	01/20/2025	SS	6010D	ARSENIC	mg/kg	1		5.31						0.837	2	5.31	
L1819928	L1819928-74	RWA-BH20-SC-2'-5'	01/20/2025	SS	6010D	LEAD	mg/kg	1		7.95						0.326	0.5	7.95	

Notes:
J = result is an estimate

Attachment B
XRF and Confirmation Sample Regression Analysis

QA/QC Review of the January 2025 Phase II ESA at Rockwell Apartments

SUMMARY OUTPUT - XRF Regression Analysis for Arsenic

Regression Statistics	
Multiple R	0.844836729
R Square	0.713749099
Adjusted R Square	0.677967737
Standard Error	0.328872597
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2.157466565	2.157466565	19.94751033	0.002093584
Residual	8	0.86525748	0.108157185		
Total	9	3.022724045			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.124013792	0.723511061	-0.171405523	0.868161166	-1.792433291	1.544405707	-1.792433291	1.544405707
XRF Result - As (ppm) - Log Transformed	0.902201606	0.202003664	4.466263576	0.002093584	0.436380322	1.36802289	0.436380322	1.36802289

RESIDUAL OUTPUT

Observation	*Predicted Lab Result (mg/kg) - Log Transformed*	*Residuals*	*Standard Residuals*
1	2.039371174	0.106560109	0.34367127
2	2.780061147	-0.566307268	-1.826420229
3	3.269346993	-0.268627178	-0.866360261
4	3.613929012	-0.267539867	-0.86285353
5	2.664729674	0.08254124	0.266207057
6	3.539324413	0.396415119	1.278494262
7	3.057474337	-0.076855701	-0.247870397
8	3.368589977	0.245026992	0.790246357
9	2.913965914	0.3965771	1.279016672
10	3.491408644	-0.047790546	-0.154131203

PROBABILITY OUTPUT

Percentile	*Lab Result (mg/kg) - Log Transformed*
5	2.145931283
15	2.213753879
25	2.747270914
35	2.980618636
45	3.000719815
55	3.310543013
65	3.346389145
75	3.443618098
85	3.61361697
95	3.935739532

QA/QC Review of the January 2025 Phase II ESA at Rockwell Apartments

SUMMARY OUTPUT - - XRF Regression Analysis for Lead

Regression Statistics	
Multiple R	0.049514122
R Square	0.002451648
Adjusted R Square	-0.122241896
Standard Error	0.533198805
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.005589752	0.005589752	0.019661389	0.89195301
Residual	8	2.274407723	0.284300965		
Total	9	2.279997475			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.443172945	1.833481477	2.423353058	0.041631727	0.215157077	8.671188814	0.215157077	8.671188814
XRF Result - Pb (ppm) - Log Transformed	-0.050696877	0.361554781	-0.140219076	0.89195301	-0.884443698	0.783049943	-0.884443698	0.783049943

RESIDUAL OUTPUT

Observation	*Predicted Lab Result (mg/kg) - Log Transformed*	*Residuals*	*Standard Residuals*
1	4.221655583	-1.01890914	-2.026854401
2	4.161655234	-0.421607493	-0.838678317
3	4.146049385	0.009703806	0.019303195
4	4.195630135	0.16746849	0.33313495
5	4.152510445	-0.1746997	-0.347519559
6	4.202619703	0.91537411	1.820898419
7	4.203062473	-0.117086161	-0.232912426
8	4.196795632	0.17896139	0.355997082
9	4.200886307	0.159661296	0.31760457
10	4.190868085	0.301133403	0.599026487

PROBABILITY OUTPUT

Percentile	*Lab Result (mg/kg) - Log Transformed*
5	3.202746443
15	3.740047741
25	3.977810746
35	4.085976313
45	4.15575319
55	4.360547603
65	4.363098625
75	4.375757022
85	4.492001488
95	5.117993812