

EGLE Brownfield Grant Work Plan

Project Name: City of Rochester Hills Grant Work Plan
Project Location: 3514 South Livernois Road, Rochester Hills, MI, 48307
EGLE Tracking Code: 2023-2540
EGLE Location Code: 6K60
Work Plan Date: June 11, 2024
Work Plan Number: **2**
Work Plan Subject: Soil Remediation and Verification Sampling

Awardee Name: City of Rochester Hills
Prepared by: ASTI Environmental

1.0 INTRODUCTION

This Work Plan #2 presents the scope of work to remediate identified impacts from historical uses on the property at 3514 South Livernois Road, Rochester Hills, Michigan (the Subject Property). Based on the environmental investigations conducted according to Work Plan #1 at the Subject Property, and as described in the downloaded document titled *Limited Phase II Environmental Site Assessment, 3514 South Livernois Road, Rochester Hills, Michigan*, for City of Rochester Hills, dated May 24, 2024 (the Limited Phase II), one soil sample collected on the central portion of the Subject Property was reported with concentrations of arsenic exceeding the generic residential clean-up criteria (GRCC) for direct contact.

Response Activities, specifically excavation and off-site disposal of the contaminated soils and replacement with clean soils, will be conducted to address the potential for unacceptable risk as part of the redevelopment of the Subject Property as a park.

2.0 SCOPE OF WORK

The following sections describe the individual tasks that are proposed as part of this Work Plan #2. Prior to conducting any site activities, ASTI will prepare a site-specific health and safety plan.

2.1 Soil Remediation and Verification Sampling Work Plan

The soils investigation for the Subject Property identified arsenic above the Part 201 generic residential clean-up criteria (GRCC) for direct contact in a single boring location. The soil boring (SB-7) identified arsenic in soil to a depth of 1-foot bgs (below ground surface) in the central portion of the Subject Property, in an area with surface disposal of empty 55-gallon drums. The scope of work for the area of contamination will require excavating and disposal of the contaminated soil.

2.1.1 Soil Remediation and Verification Sampling Work Plan

This Work Plan has been prepared as a pre-approved activity.

2.1.2 Landfill Approval

Prior to conducting any soil removal, ASTI Environmental will contact a licensed Type II Landfill, will provide site sampling data collected to date, and will identify any additional landfill specific parameters required. Based on the landfill requirements, ASTI will collect two waste characterization soil samples in a representative area. The samples will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP) RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), or other parameters specified by the selected landfill.

2.1.3 Clearing and Grubbing

Clearing and grubbing is currently being conducted on the Subject Property to prepare it for redevelopment. However, the impacted area around SB-7 is not included in that activity. Therefore, this Work Plan #2 includes the costs of clearing and grubbing vegetation to prepare the area for soil excavation and removal.

2.1.4 Delineation Sampling

To determine the extent of impacts, four boring will be installed at the cardinal coordinates at approximately 40 feet from SB-7. Two samples will be collected from each boring location at depths of 3 feet bgs and 5 feet bgs, analyzed for arsenic, and compared to the GRCC and regional background concentrations.

2.1.5 Soil Excavation, Transportation and Disposal

Prior to conducting any soil removal, bids will be obtained for completion of this task. Prospective contractors will be provided with a copy of the Limited Phase II report and a request for bid, as a basis for the bidding. Since bids have not yet been provided, and must be conducted according to the City of Rochester Hills bidding procedure, this Work Plan #2 assumes unit costs for excavation, transportation, disposal and backfill.

Prior to conducting any soil removal, ASTI will contact the MISS DIG system to locate public utilities. The City of Rochester Hills will be responsible for locating any private utility lines in the vicinity of the soil boring locations or providing confirmation that no utilities are present in those areas. ASTI will not be responsible for damaging utilities or resulting property damages related to damaging utility lines during subsurface drilling and field operations.

The City of Rochester Hills will obtain any right-of-way permits required to conduct the soils remediation.

To mitigate the potential for exposure via the direct contact pathway, soil located around SB-7 will be excavated from the Subject Property and properly disposed off-site. All soil removed will be directly loaded into trucks. Manifests will be signed by a representative of the owner, the City of Rochester Hills. Copies of all truck tickets and disposal manifests will be maintained as documentation of the remedial activities and included in the summary report.

Based on the soil sampling completed on the Subject Property, the contaminated materials are expected to be confined from 0 to 3 feet below grade. Based on the area of drum disposal, a 400 square foot area is assumed for soil removal. This results in a volume of soils for removal and disposal of approximately 60 cubic yards (or 90 tons using a 1.3 density factor and 15% contingency). Refer to Figure 1 for the expected excavation area.

Soils excavated and transported off-site for disposal as part of the response activities will be disposed of in a Type II landfill in compliance with all local, state, and federal laws.

2.1.6 Verification Sampling

Following excavation and before backfilling, confirmation of remediation sampling will be completed in general accordance with the guidance provided in the Sampling Strategies and Statistics Training Materials (S3TM) for Part 201 Cleanup Criteria (MDEQ 2002). Because the excavation is expected to be significantly less than 10,890 square feet, biased verification of soil remediation (VSR) samples will be collected in compliance with the formula provided in Section 1.3.1 of the S3TM.

The excavation at the Subject Property is expected to be approximately 400 square feet and approximately 3 feet deep. Based on this expected size, 6 VSR samples (2 floor samples and 4 sidewall samples) will be collected from the excavation. However, if the excavation differs significantly from the expected size, VSR samples will be collected based on the sampling frequency as recommended in Section 1.3.1 of the S3TM. For QA/QC purposes, one duplicate sample will also be collected.

All VSR and QA/QC samples will be analyzed for arsenic. Following excavation, the soils that remain will be native to the Subject Property and in accordance with Section 20101(e)(ii) of NREPA in place of the GRCC, it is appropriate to substitute regional background values for the naturally occurring metals. Therefore, any detected concentrations of these naturally occurring metals will be compared to the regional background concentrations following the procedures for use outlined in the September 2019 Soil Background and Use of the 2005 Michigan Background Soil Survey Resource Materials published by EGLE.

The removal of soil is expected to be limited to the suspected area of remediation on the Subject Property. However, additional soil excavation may be conducted outside the remediation area until the analytical results for samples collected from the sidewalls and floor exhibit concentrations below the GRCC for direct contact and/or regional background level for the contaminants of concern.

2.1.7 Backfill

Following completion of all excavations, the excavations will be filled with clean soils imported from a nearby quarry. This Work Plan assumes a compaction factor of 1.2 for all imported clean

soils. Documentation that the clean soils are from a native source will be provided, or imported soils will be sampled for arsenic and lead. Load tickets, indicating the source of the clean soils, will be maintained for all soils transported to the Subject Property and will be included in the summary report.

2.1.8 Summary Report

A summary report will be provided to describe the work performed and any deviations from this work plan, present the results of the soil sampling, and provide documentation of all the materials removed from, or placed on, the Subject Property. This task will also include project management and grant reporting activities.

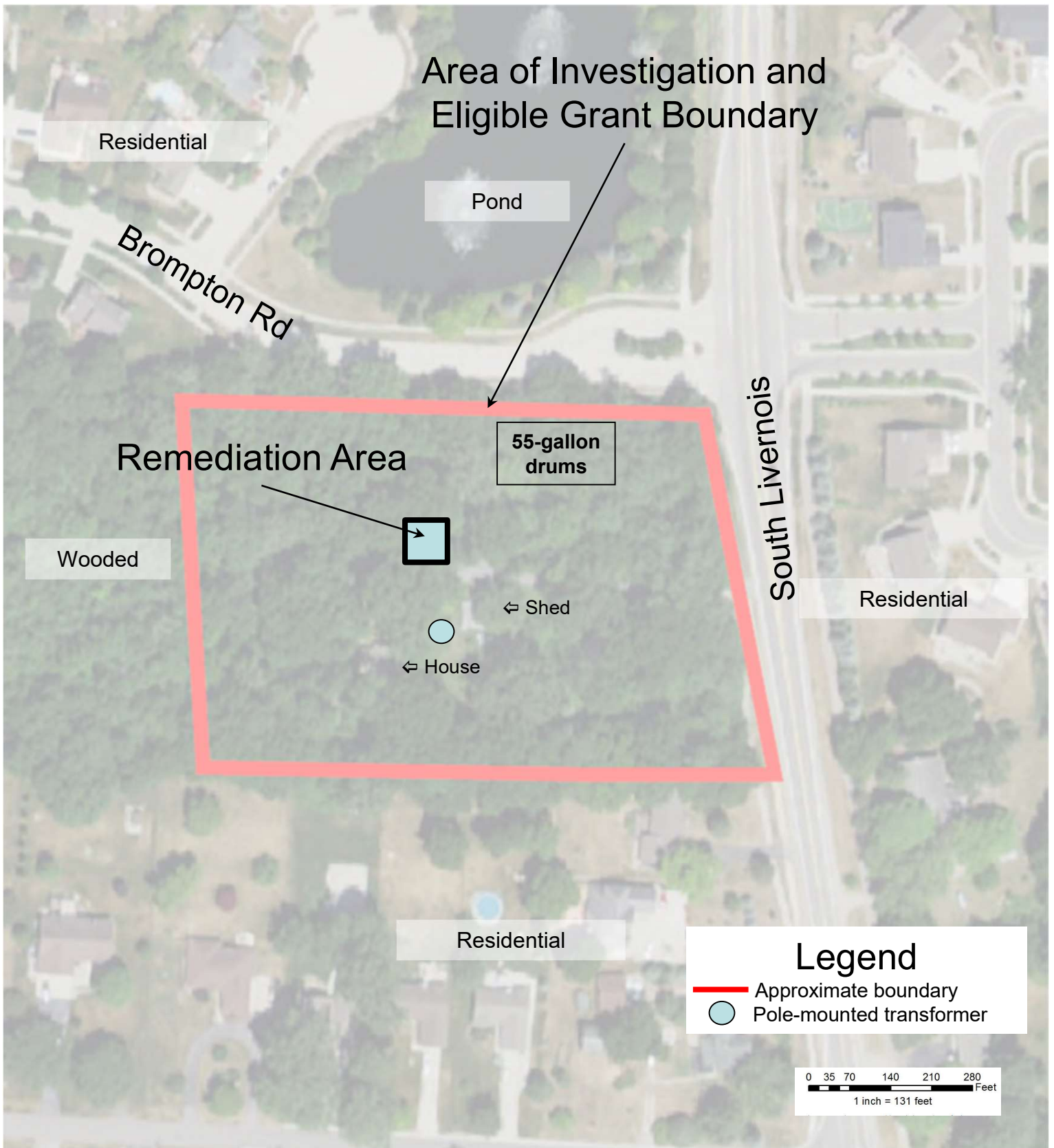
3.0 SCHEDULE

The following is the proposed schedule for this Work Plan.

<u>Task</u>	<u>Completion</u>
Prepare Work Plan	Completed
Landfill Approval	July 2024
Clearing and Grubbing	July 2024
Delineation Sampling	July 2024
Soil Excavation, Transportation and Disposal	August 2024
Verification Sampling	August 2024
Backfill	August 2024
Summary Report	September 2024

Figures

Insert Figure 1: Area for Remediation



3514 South Livernois Road

Rochester Hills, MI



Created for: City of Rochester Hills
 Created by: TJW December 4, 2023 (#11482-64)

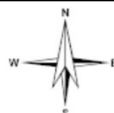


Figure I: Area for Remediation

Tables

Table 1

Work Plan Activity Costs and Schedule					
Eligible Activities	Quantity	Unit	Unit Cost	Cost	Estimated Completion Quarter
3514 South Livernois Road					
Task #2 Remediation, Remedial Actions, Response and Removal Actions					
Task 2001 Preparation of Work Plan	1	LS		\$ 2,500.00	Completed
Health and Safety Plan	1	LS		\$ 400.00	Spring to Fall 2024
Task 2002 Landfill Approval/Waste Characterization	1	LS		\$ 2,200.00	
Analytical	2	ea.	\$ 500.00	\$ 1,000.00	
Task 2003 Clearing and Grubbing	1	Est	\$ 4,000.00	\$ 4,000.00	
Task 2004 Delineation Sampling -Field Work	1	LS		\$ 3,200.00	
Analytical	8	EA	\$ 38.40	\$ 307.20	
Task 2005 Soil Excavation, Transportation and Disposal	90	Ton	\$ 88.00	\$ 7,920.00	
Temporary Site Control- Access, Erosion, Dust, Clearing	1	LS		\$ 3,000.00	
Task 2006 Verification Sampling -Field Work	1	LS		\$ 6,500.00	
Analytical	7	EA	\$ 460.00	\$ 3,220.00	
Task 2007 Backfill (1.2 Compaction Factor)	108	Ton	\$ 32.00	\$ 3,456.00	
Sampling to Confirm Clean Fill - Field Work	1	LS	\$ 2,500.00	\$ 2,500.00	
Analytical	3	ea.	\$ 460.00	\$ 1,380.00	
Task 2008 Project Management/Grant Reporting/Summary Report				\$ 4,000.00	
EGLE Eligible Activities Total Costs				\$ 45,583.20	

Table 2

Cumulative Expenditures Table				
Task	Current Sub-Grant Budget	Pre-Approved	Work Plan 1	Work Plan Amount Approved to Date
3514 S. Livernois Road				
Task #1 Environmental Assessments	\$ 42,300.00	\$ -	\$ 48,813.00	\$ 48,813.00
Task #2 Remediation, Response Actions	\$ 127,100.00	\$ -	\$ -	\$ -
Task #3 Engineered Controls	\$ -	\$ -	\$ -	\$ -
Task #4 EGLE Sign	\$ 500.00	\$ 500.00	\$ -	\$ 500.00
Task #7 Grant Administration	\$ 1,000.00	\$ -	\$ -	\$ -
Task #8 Contingency	\$ 25,410.00	\$ -	\$ 2,990.35	\$ 2,990.35
EGLE Eligible Activities Total Costs	\$ 196,310.00	\$ 500.00	\$ 51,803.35	\$ 52,303.35

Cumulative Expenditures Table				
Task	Work Plan 2	Amount Spent to Date	Work Plan Amount Remaining	Grant Amount Remaining
3514 S. Livernois Road	\$ -			
Task #1 Environmental Assessments	\$ -	\$ 10,430.21	\$ 38,382.79	\$ 31,869.79
Task #2 Remediation Response Actions	\$ 45,583.20	\$ -	\$ -	\$ 127,100.00
Task #3 Engineered Controls				
Task #4 EGLE Sign	\$ -	\$ -	\$ 500.00	\$ 500.00
Task #7 Grant Administration	\$ -	\$ -	\$ -	\$ 1,000.00
Task #8 Contingency		\$ -	\$ 2,990.35	\$ 25,410.00
EGLE Eligible Activities Total Costs	\$ 45,583.20	\$ 10,430.21	\$ 41,873.14	\$ 185,879.79

Appendices

Appendix A: Phase II ESA

This document will be provide via ShareFile