

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

Cc: Nevada Division of Environmental Protection
United States Environmental Protection Agency

From: Chris Hayes and Dana Grady

Date: November 25, 2024

Subject: Unit 4 Source Area In-Situ Bioremediation Treatability Study Monthly Progress Report

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this memorandum to summarize Tetra Tech's progress during September 2024 toward successfully implementing the Unit 4 Source Area In-Situ Bioremediation (ISB) Treatability Study.

Task Progress Update: September 2024

Task M21 – Unit 4 Source Area ISB Treatability Study

- Current Status
 - Operations and maintenance activities for Phase 2 of the Unit 4 Source Area ISB Treatability Study began on September 8, 2022 and were completed on April 9, 2024. The treatability study, which was divided into two areas denoted as Area 1 and Area 2, was implemented in phases. For Area 1, the first phase began on September 8, 2022 and consisted of a total dissolved solids (TDS) reduction period to reduce the TDS concentrations in Area 1 deep below the TDS goal of 21,000 mg/L. The second phase for Area 1, which included carbon substrate injections for application of ISB into Area 1 intermediate and deep zones, was initiated on April 6, 2023. For Area 2, an initial TDS-reduction phase was not required. As a result, carbon substrate injections for application of ISB into Area 2 intermediate and deep zones was performed for the entire duration of treatability study operations from September 2022 to April 2024. Following system shutdown, system decommissioning activities were completed in May 2024. A layout map and construction details of all injection, monitoring, and extraction wells are provided on **Figure 1** and in **Table 1**, respectively.
 - In April 2024, the study transitioned into the post-treatment evaluation phase to assess long-term changes in contaminant concentrations and geochemical conditions following system shut down. The post-treatment effectiveness monitoring program consisted of two quarterly sampling events. The first post-treatment effectiveness monitoring event was conducted from June 10 through June 20, 2024, and the results were presented in the previous August 2024 monthly progress report. The second and final post-treatment effectiveness monitoring event was conducted from

September 18 through September 27, 2024. Results for the September 2024 sampling event will be provided in a future monthly progress report as data become available.

- Schedule and Progress Updates
 - The final quarterly post-treatment effectiveness monitoring event was performed in September 2024 in accordance with the Work Plan Addendum. All field activities have been completed.
- Health and Safety
 - There were no health and safety incidents related to Task M21 in September 2024.

CERTIFICATION

Unit 4 Source Area In-Situ Bioremediation Treatability Study Monthly Progress Report

**Nevada Environmental Response Trust Site
(Former Tronox LLC Site)
Henderson, Nevada**

Nevada Environmental Response Trust (NERT) Representative Certification

I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of NERT. Based on my own involvement and/or my inquiry of the person or persons who manage the systems(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Signature: Jay A Steinberg, President, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Name: Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Title: Solely as President and not individually

Company: Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Date: 11/25/24

CERTIFICATION

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Description of Services Provided:

Prepared Unit 4 Source Area In-Situ Bioremediation Treatability Study Monthly Progress Report.



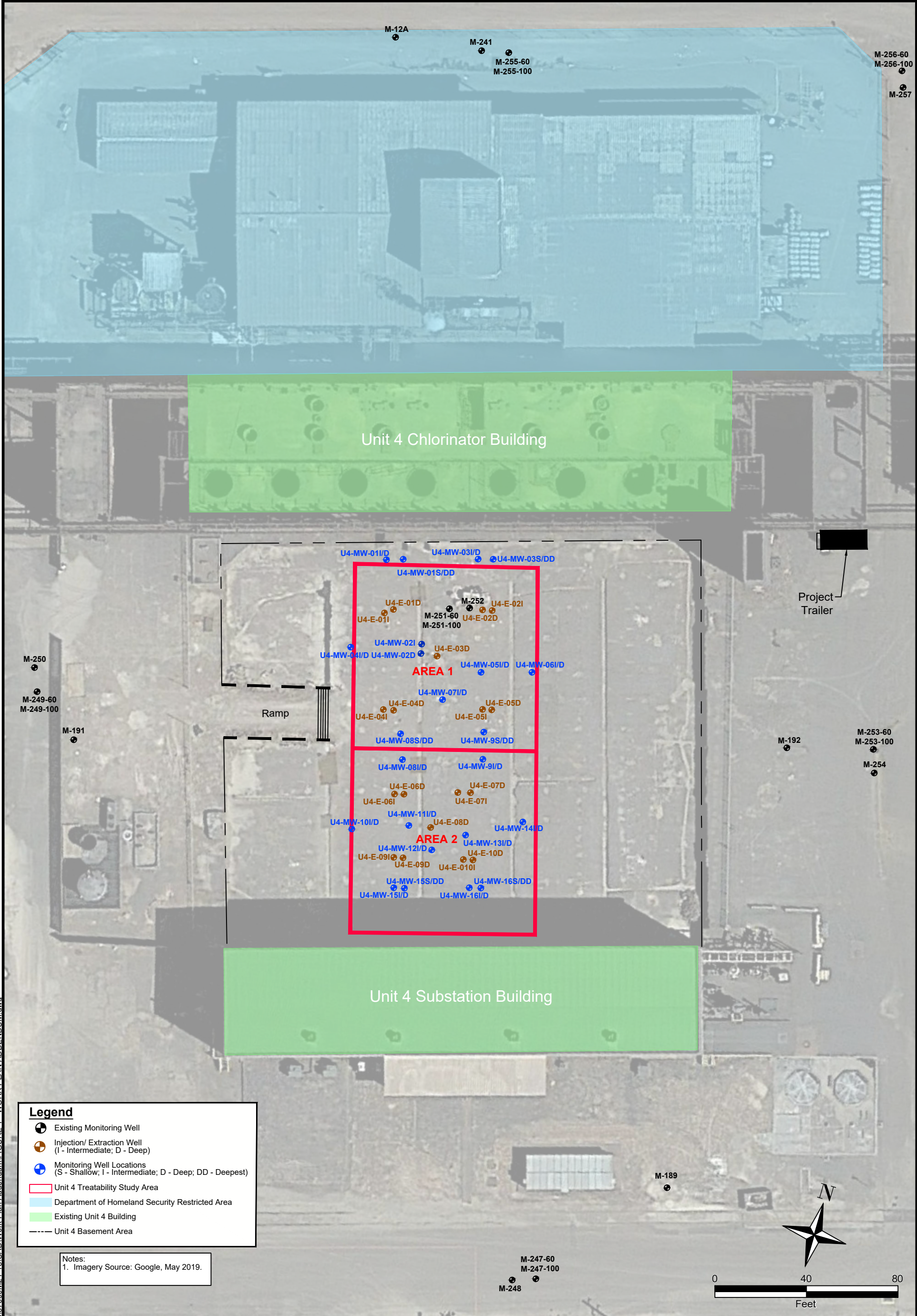
Christopher Hayes, CEM
Environmental Engineer
Tetra Tech, Inc.

November 25, 2024

Date

Nevada CEM Certificate Number: EM2499
Nevada CEM Expiration Date: December 15, 2024

Figure



Legend

- Existing Monitoring Well
- ⊕ Injection/ Extraction Well (I - Intermediate; D - Deep)
- ⊕ Monitoring Well Locations (S - Shallow; I - Intermediate; D - Deep; DD - Deepest)
- ▭ Unit 4 Treatability Study Area
- ▭ Department of Homeland Security Restricted Area
- ▭ Existing Unit 4 Building
- Unit 4 Basement Area

Notes:
1. Imagery Source: Google, May 2019.

\\its318fs3.tl.local\CES\Projects\87600\M21-18\CAD\Work Plan Addendum\FIGURE 1 - WORK PLAN ADDENDUM.dwg



TETRA TECH

www.tetrattech.com
150 S. 4th Street, Unit A
Henderson, Nevada 89015
Phone: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST SITE
UNIT 4 SOURCE AREA IN-SITU BIOREMEDIATION TREATABILITY STUDY
HENDERSON, NEVADA

INJECTION/ EXTRACTION AND MONITORING WELL LAYOUT

Project No.:	117-7502021-M21
Date:	May 10, 2022
Designed By:	AC
Figure No.	1

Table

