

November 13, 2018

**TECHNICAL MEMORANDUM**

To: Steve Clough  
Nevada Environmental Response Trust

From: John Pekala, CEM#2347, Expires 9/20/2020, Ramboll  
Jessica Donovan, Ramboll

**Re: RI Phase 3 Modification No. 5 – Seep Well Field Area Drilling  
Nevada Environmental Response Trust Site  
Henderson, Nevada  
Ramboll Project No. 1690006943-036**

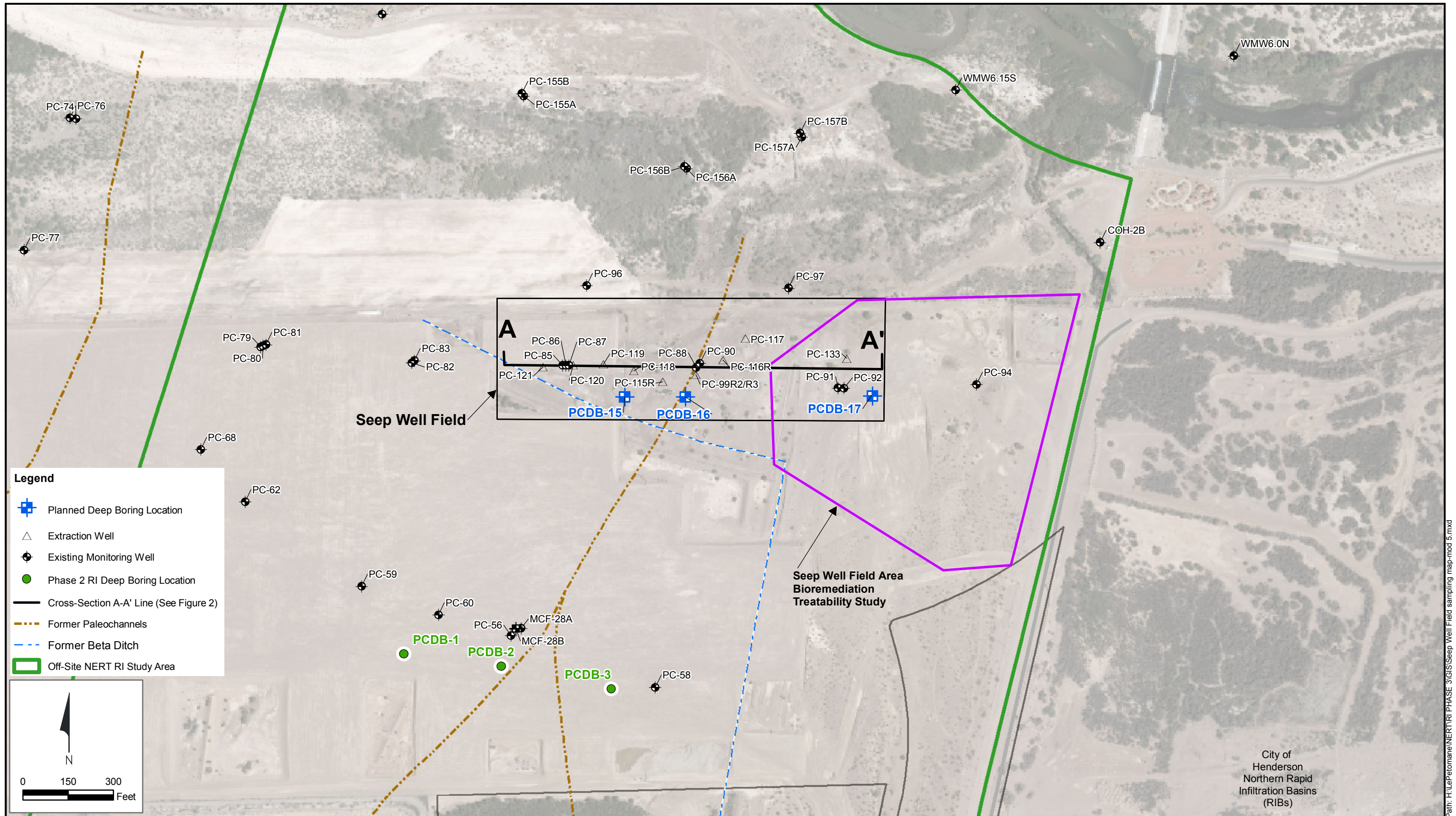
This Technical Memorandum presents Ramboll’s recommended Modification No. 5 to the scope of work for Phase 3 of the Remedial Investigation (RI) currently in progress at the Nevada Environmental Response Trust Site (the “Site”) located in Henderson, Nevada. This recommended modification proposes three additional deep soil borings upgradient of the Seep Well Field (SWF) to better delineate the lateral and vertical extent of perchlorate and other NERT COPCs in deeper UMCf soils (i.e., greater than 50 feet bgs). Details regarding the proposed RI Phase 3 Modification No. 5 investigation are provided below. The data obtained during these activities will be used with similar data collected as part of the Phase 2 RI, the Downgradient Study Area investigation, the Seep Well Field Area Bioremediation Treatability Study, and the Las Vegas Wash Bioremediation Pilot Study to define the horizontal and vertical extent of perchlorate and other NERT COPCs along the Las Vegas Wash.

**Investigation Locations PCDB-15, PCDB-16, and PCDB-17.** Three deep soil borings will be advanced just south and hydraulically upgradient of the SWF. Figure 1 provides a plan view of the proposed soil boring locations. Subsurface conditions near the SWF are illustrated schematically on Subsurface Cross-Section A-A’ as shown on Figure 2. The proposed soil borings will be advanced to a planned total depth of 150 feet bgs. Soil samples will be collected at intervals of 10 feet from 50 feet bgs to the total depth of each boring and analyzed for perchlorate, chlorate, total chromium, nitrate/nitrite, VOCs, and moisture content. A select number of soil samples will also be tested for physical properties.

Please contact us should you have any questions about the recommended additional investigation locations.

**Attachments**

- Figure 1 Proposed Deep Boring Locations (Seep Well Field Area)
- Figure 2 Schematic Subsurface Cross-Section A-A' Showing Seep Well Field Area



**Legend**

- Planned Deep Boring Location
- △ Extraction Well
- Existing Monitoring Well
- Phase 2 RI Deep Boring Location
- Cross-Section A-A' Line (See Figure 2)
- - - Former Paleochannels
- - - Former Beta Ditch
- ▭ Off-Site NERT RI Study Area

North Arrow

0 150 300 Feet

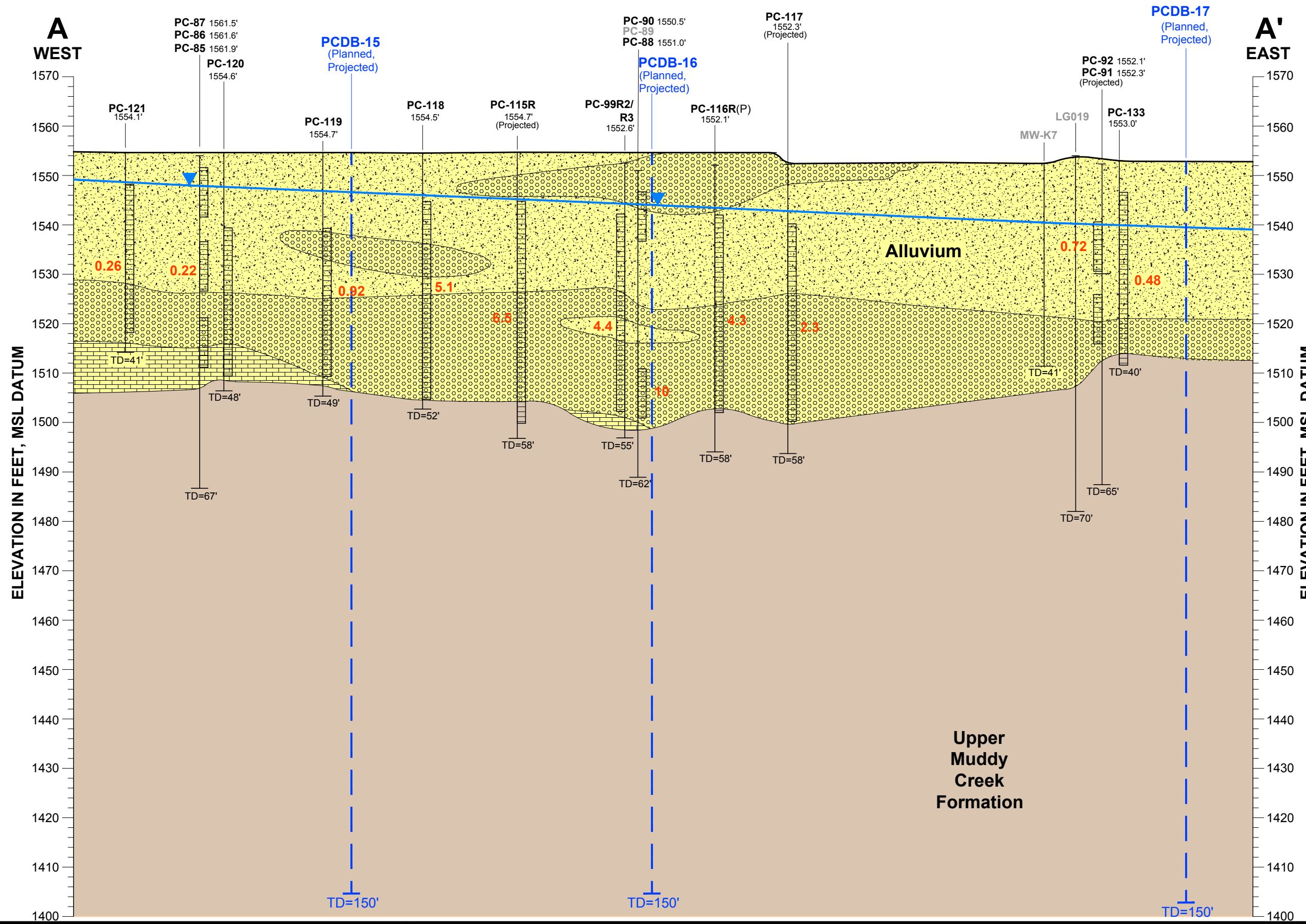
**Proposed Deep Boring Locations (Seep Well Field Area)**  
 Nevada Environmental Response Trust Site  
 Henderson, Nevada

Figure  
**1**



Path: H:\LePetoman\NERT\RI PHASE 3\GIS\Seep Well Field sampling map-mod 5.mxd

RMSO 11/12/18 Q:\DRAWINGS\1690006943-SEEP WELL FIELD A-A' CROSSSECTION-2 >



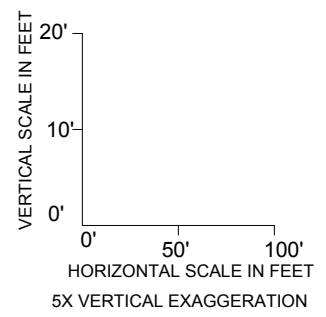
**Explanation:**

PC-121 Well name  
0.26 Perchlorate, mg/L (May 2018)

▼ Groundwater Elevation Measured in Shallow Monitoring Wells (May 2018)

- Notes:**
1. Planned investigation locations are shown in blue.
  2. TD = total depth.
  3. MSL Datum = Mean Sea Level Datum.
  4. Subsurface interpretation is preliminary; subject to change.
  5. Wells shown in gray have been plugged and abandoned.

ALLUVIUM (Gal)	
GRAVEL/ SANDY GRAVEL	SAND, SILTY AND GRAVELLY
UPPER MUDDY CREEK FORMATION (UMCF)	
CALICHE	SILT/ CLAYEY SILT



**Schematic Subsurface Cross-Section A-A' Showing Seep Well Field Area**

RI Phase 3 Modification No. 5  
 Nevada Environmental Response Trust Site; Henderson, Nevada

**RI Phase 3 Modification No. 5  
Seep Well Field Area Drilling**

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

**Nevada Environmental Response Trust (Trust) 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 the Trust. Based on my own involvement and/or my inquiry of the person or persons who manage the system(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, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

**Signature:**

*Jay A Steinberg, not individually but solely as President*  
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:** \_\_\_\_\_

*11/13/18*

**RI Phase 3 Modification No. 5  
Seep Well Field Area Drilling**

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

**Responsible Certified Environmental Manager (CEM) for this project**

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 provided 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.



November 13, 2018

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**John M. Pekala, PG  
Principal**

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**Date**

Certified Environmental Manager  
Ramboll US Corporation  
CEM Certificate Number: 2347  
CEM Expiration Date: September 20, 2020