

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

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

From: Arul Ayyaswami and Dan Pastor

Date: July 30, 2018

Subject: In-Situ Chromium 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 that summarizes Tetra Tech's progress made through June 2018 toward successfully implementing the In-Situ Chromium Treatability Study as outlined in the In-Situ Chromium Treatability Study Work Plan (Work Plan).

Task Progress Update: June 2018

Task M12 – In-Situ Chromium Treatability Study

- Task Leader – Arul Ayyaswami
- Current Status
 - The revised In-Situ Chromium Treatability Study Results Report and an annotated response-to-comments letter was submitted to NDEP on June 22, 2018.
 - An additional performance groundwater monitoring event was performed from June 21 - 22, 2018 as part of the biological reduction study to further evaluate groundwater velocity, carbon substrate longevity, the degree to which reduction of hexavalent chromium and other chemicals of potential concern could occur within the UMCf, and confirm geochemical conditions return to baseline conditions. Groundwater monitoring was performed at 8 of the 14 downgradient monitoring wells. Groundwater monitoring wells CTMW-03S, CTMW-03D, CTMW-05S, and CTMW-05D were excluded as the previous groundwater monitoring results indicated that these wells were located cross-gradient of the injection wells and showed limited effects from the carbon substrate injections. Groundwater monitoring wells CTMW-02S and CTMW-07S were planned to be sampled, but were dry at the time of the performance groundwater monitoring event and could not be sampled. The location of the biological reduction study area is depicted in Figure 1. The monitoring well locations are depicted in Figure 2.

- **Schedule and Progress Updates**
 - The results of the additional performance groundwater monitoring event will be presented in the July 2018 monthly progress report.
 - The results of the additional performance groundwater monitoring events conducted in March and June 2018 will be presented in a report addendum in 3rd Quarter 2018.
- **Health and Safety**
 - There were no health and safety incidents related to Task M12 during June 2018.

CERTIFICATION

In-Situ Chromium 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, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

not individually, but solely as President

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: 11/30/18

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 In-Situ Chromium Treatability Study Monthly Progress Report, Nevada Environmental Response Trust Site, Henderson, Nevada.



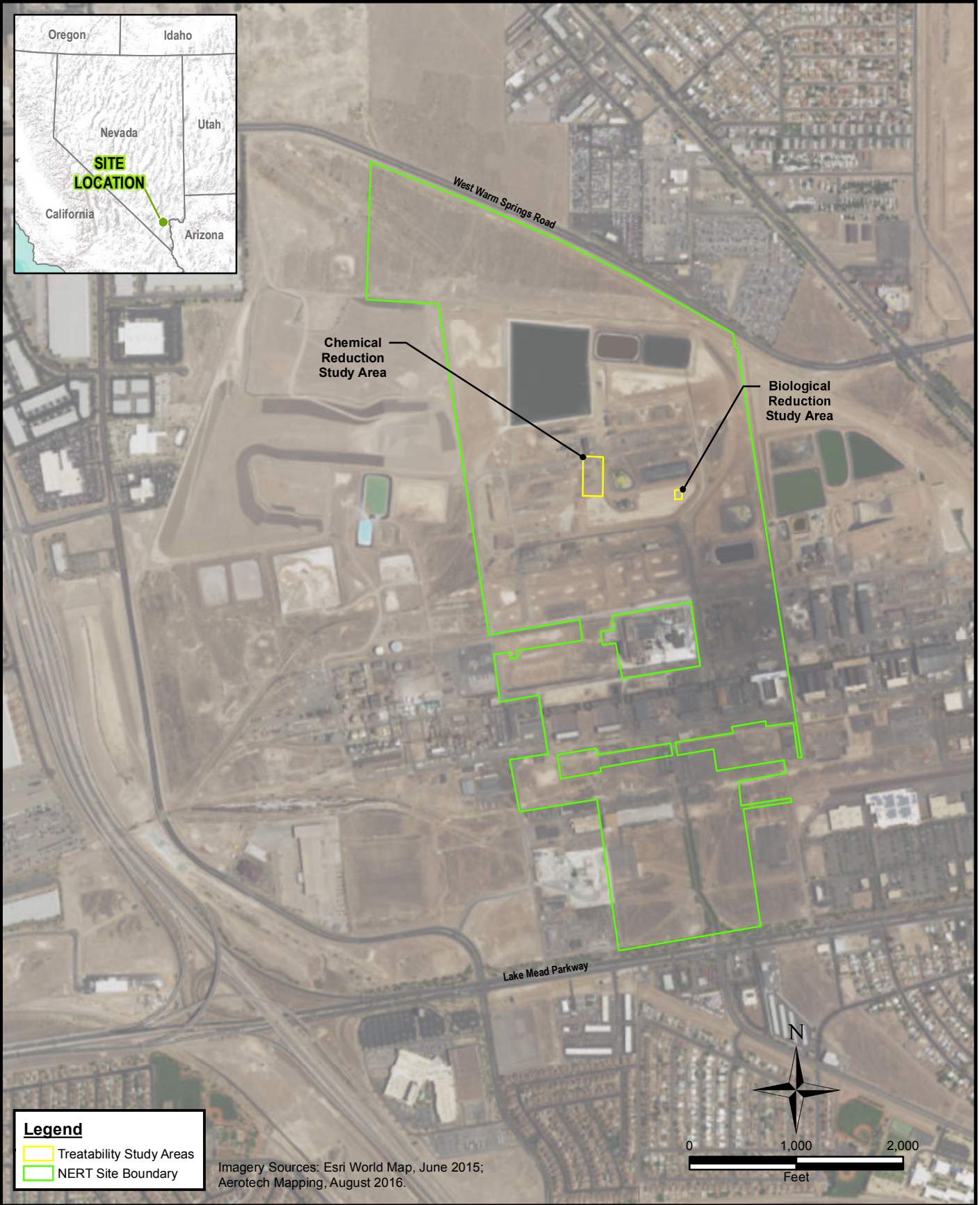
July 30, 2018

Kyle Hansen, CEM
Field Operations Manager/Geologist
Tetra Tech, Inc.

Date

Nevada CEM Certificate Number: 2167
Nevada CEM Expiration Date: September 18, 201

Figures



Legend

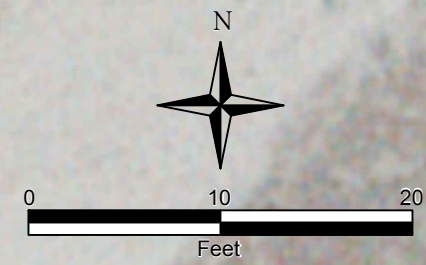
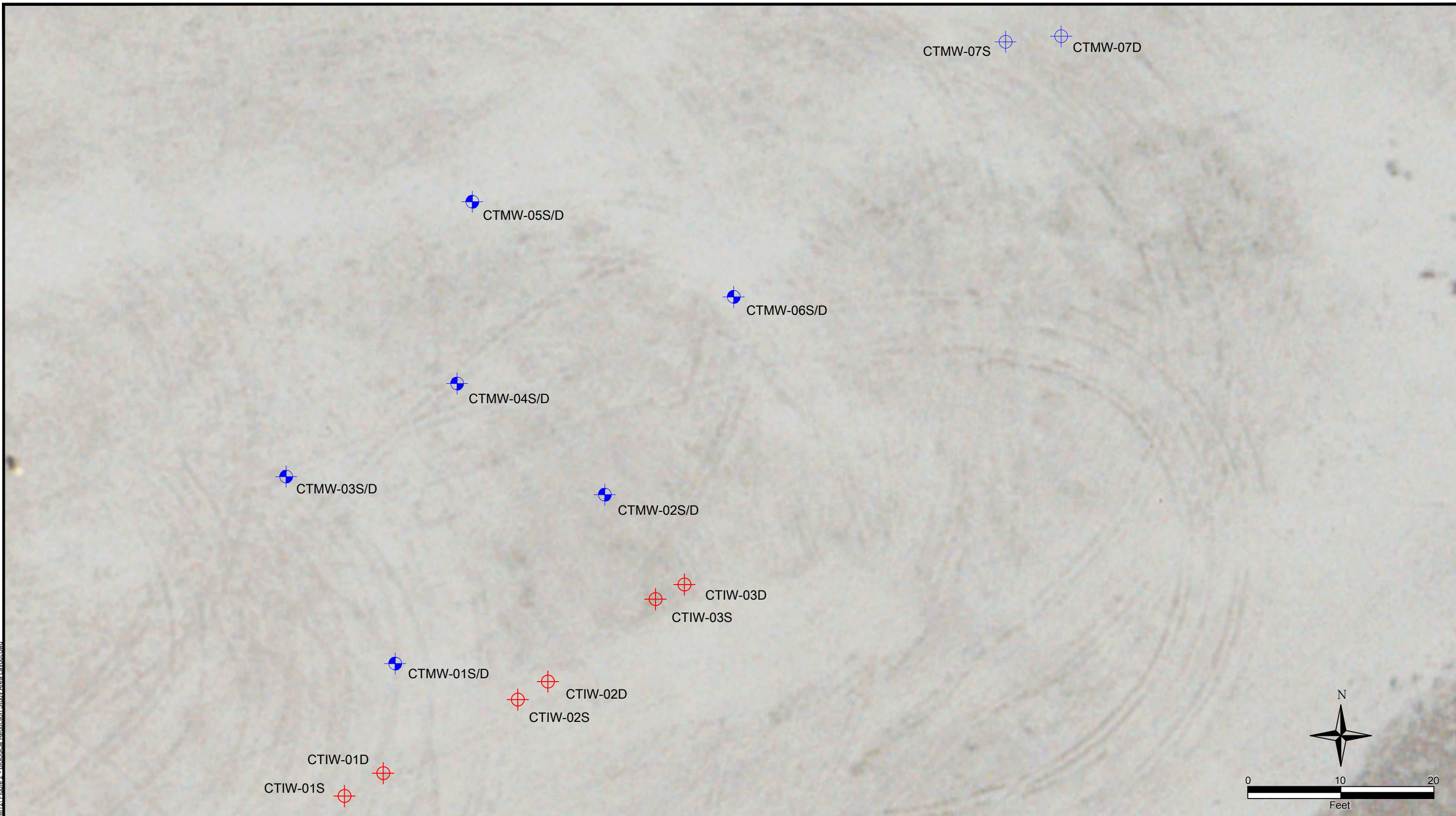
- Treatability Study Areas
- NERT Site Boundary

Imagery Sources: Esri World Map, June 2015;
Aerotech Mapping, August 2016.

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 www.tetrattech.com 150 S. 4th Street, Unit A Henderson, Nevada 89015 Phone: (702) 854-2293	NEVADA ENVIRONMENTAL RESPONSE TRUST SITE	Project No.: 87600014
	IN-SITU CHROMIUM TREATABILITY STUDY	Date: NOVEMBER 17, 2017
SITE LOCATION MAP	Designed By: KL	Figure No.
		1

\\fs31863\31863\11\Local\cas07600014\NERF_M12\Figure 2 - Biological Reduction Study Area Layout.dwg



Legend			
CTMW-07S	Monitoring Well (Single Completion)	Qal	Quaternary Alluvium
CTMW-03S/D	Monitoring Well (Dual Completion)	UMCf	Upper Muddy Creek Formation
CTIW-01D	Injection Well (Single Completion)		
S	Shallow Well (Screened in Qal)		
D	Deep Well (Screened in UMCf)		

Note:
 1. Imagery Source: Aerotech Mapping, August 2016.

 **TETRA TECH**

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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

IN-SITU CHROMIUM TREATABILITY STUDY

BIOLOGICAL REDUCTION STUDY AREA LAYOUT

Project No:	117-7502018
Date:	MAY 22, 2018
Designed By:	DVK
Figure No.	2