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RIWP MINOR FIELD MODIFICATION-02 **Clarification of QAPP Amendment Number 1** **700 SOUTH 1600 EAST PCE PLUME SITE** **SALT LAKE CITY, UTAH**

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Introduction

This document describes a minor field modification to Section 6.2.1 of the Remedial Investigation Work Plan (RIWP) for Accelerated Operable Unit-1 (AOU-1) of the 700 South 1600 East PCE Plume (the "Plume"), Salt Lake City, Utah, Superfund Site. Specifically, this document memorializes changes to QAPP Amendment No. 1 that were discussed by the U.S. Department of Veteran's Affairs (VA) with the Environmental Protection Agency Region 8 (EPA) and the Utah Department of Environmental Quality, Division of Environmental Response and Remediation (DERR) staff to clarify:

- 1) The selection criteria for additional quality assurance samples identified in QAPP Amendment No. 1.
- 2) The number of structures to be sampled. Together, these clarifications are designed to further ensure that VC is not present in indoor air, above assessment criteria, when the other contaminants of interest (PCE and TCE) are below the screening levels established in the AOU-1 Screening Level and Removal Action Level Memo.

This modification, along with Minor Field Modification No. 1, affects how the Quality Assurance Project Plan (QAPP) and the Quality Assurance Project Plan Amendment No. 1 (QAPP Amendment 1) will be implemented. It also supplements Section 2.3.1 of the QAPP and Section 4.1 of the Sampling and Analysis Plan (SAP), both entitled: *Indoor Air Quality Screening, Characterization and Verification*. Section 12 of the Protocol for Performing Indoor Air and Near-slab Soil Gas Assessments at the 700 South 1600 East PCE Plume Superfund Site, Salt Lake City, Utah (the "VI Protocol") is also affected by this modification.

Background

VA adopted EPA Regional Screening Levels (RSLs) for Tetrachloroethylene (PCE), Trichloroethylene (TCE), and Vinyl Chloride (VC) as indoor air screening levels (SLs) for AOU - 1 RIWP. Selected structures are assessed for vapor intrusion impacts and indoor air sources. If vapor intrusion is suspected, 24-hour Summa canister samples are analyzed for volatile organic compound according to Method TO-15. The indoor air SLs for the project are as follows: PCE,

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11 $\mu\text{g}/\text{m}^3$ (1.60 ppbv¹); TCE, 0.48 $\mu\text{g}/\text{m}^3$ (0.09 ppbv¹); and VC, 0.17 $\mu\text{g}/\text{m}^3$ (0.07 ppbv¹). Field analytical results for indoor air are compared to the SLs to identify the need for confirmation sampling. Another common degradation product, cis 1, 2-Dichloroethene (cis-DCE), does not have an established RSL applicable to indoor air exposures but is included in the indoor air characterization.

The QAPP/QAPP Amendment 1 established quality control protocols for the HAPSITE™ portable Gas Chromatograph/Mass Spectrometer (GC/MS), which is used in the field to analyze contaminant concentrations in indoor air and soil gas. The QAPP for AOU-1 required a four compound calibration (PCE, TCE, cis-DCE, and VC) at five different concentrations for each analyte (0.1, 0.5, 1.0, 5.0, and 10 ppbv).

During the indoor air screening and near-structure soil gas screening process, the field team discovered that the instrument was unable to reliably quantify VC at concentrations below the 5 ppbv calibration level. QAPP Amendment No. 1, approved by EPA on March 13, 2015, eliminated HAPSITE™ calibration requirements for VC.

Number of Additional SUMMA™ Canister Samples

QAPP Amendment No. 1 presents additional quality assurance data collection requirements for VC that are designed to ensure that field screening with the HAPSITE does not compromise the objectives of the AOU-1 Remedial Investigation. These requirements include:

- 1) Collecting indoor air SUMMA™ canister samples in buildings where the indoor air screening level is exceeded for PCE or TCE. The SAP identified up to 25 SUMMA™ canister samples for laboratory analysis. QAPP Amendment No. 1 will add four additional samples at specific structures, meeting selection criteria that are based on knowledge of VI impact area gained from earlier sampling.
- 2) Collecting duplicate soil gas and indoor air samples in the field at a 10 percent frequency for laboratory analysis, or a minimum of one field duplicate for each sampling event as outlined in the AOU-1 SAP and QAPP approved by EPA and UDEQ. QAPP Amendment No. 1 will add a duplicate sample collocated with one of the four additional sample locations described above.

Clarification of Additional SUMMA™ Canister Sample Collection Locations

This modification identifies criteria that will be used to determine where additional SUMMA™ canister samples will be collected. This step was added in response to UDERR's request to better describe the criteria for choosing sample locations.

The exact locations where additional SUMMA™ canister samples are collected will be determined based on a review of previous indoor vapor intrusion surveys, available surface water, and groundwater sampling and near-slab soil gas data. These data will help to estimate the depth-to-groundwater, distribution of PCE contamination, and the dimensions of the groundwater plume impact in the area of AOU-1.

¹ The SL conversion from $\mu\text{g}/\text{m}^3$ to ppbv for PCE and its degradation products was calculated using a temperature of 21°C at one atmosphere of pressure.

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The selected structures will be located where groundwater is within 10 to 20 feet of the ground surface and will include:

- One sample outside the Plume where PCE, TCE, and cis-DCE in the indoor air are below the SLs or the detection limit of the HAPSITE™ instrument.
- Three samples will be collected inside the area of the Plume where PCE and TCE are equal to or less than their respective SLs but above the instrument detection limits.

At each of these structures, a 24-hour SUMMA™ canister sample will be collected from breathing zone air and will be submitted to ALS Laboratory for analysis of VOCs using EPA Method TO-15. The sample locations will be approximately co-located with a HAPSITE reading in the lowest occupied level of the structure. At least two structural types (slab on-grade, partial finished basement, residential, etc.) will be assessed.