

**SITE MANAGEMENT PLAN**

**EAST OF SHEEP LANE AND NORTH OF SR-112, TOOELE, UTAH**

**Prepared for**

**RG IV, LLC  
2265 East Murray Holladay Road  
Holladay, Utah 84117**

**Prepared by**

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**FINAL**

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# 1. INTRODUCTION

## 1.1 Scope

This Site Management Plan pertains to the Property owned by RG IV, LLC, located East of Sheep Lane and North of SR-112, in Tooele, Utah. A copy of an Alta Land Title Survey and Site Map is attached hereto as Exhibit A and by this reference hereby incorporated herein. Portions of the Property fall within the 2004 Groundwater Management Area associated with the plume of dissolved trichloroethylene (“TCE”) originating from former unlined chemical disposal pits on the Tooele Army Depot – North Area (“TEAD – N”) premises, and from warehouse and maintenance buildings near the northeast boundary of TEAD – N (collectively referred to as a portion of “SWMU 58”). Because of residual groundwater contamination beneath the Property, ongoing groundwater monitoring requirements within the 2004 Groundwater Management Area and groundwater use restrictions in place concerning portions of the Property, RG IV has agreed to prepare this Site Management Plan for the Property.

## 1.2 Site Background

The following is a brief history of the Property. The primary sources of historic information were collected from a review of historic aerial photographs, topographic maps, city directories, interviews and a Property reconnaissance. The review indicates that the Property has been vacated and undeveloped since the date of the earliest aerial photograph from 1943. The Property is currently and was historically used as pastureland for grazing. The northeastern boundary of the Tooele Army Depot – North Area (“TEAD – N”) is located approximately one-half mile southwest of the Property. Nine groundwater monitoring wells associated with the Tooele Army Depot remediation activities are located on the Property. A copy of an Army Corps of Engineers map depicting the locations of the groundwater monitoring wells on the Property is attached hereto as Exhibit B and by this reference hereby incorporated herein. Through interviews with the USEPA, UDEQ and the Tooele Army Depot’s environmental consulting firm Parsons, it was discovered, as noted above, that portions of the Property fall within the 2004 Groundwater Management Area associated with a portion of SWMU 58. A copy of Figure 3 in the Phase I Environmental Site Assessment Report for the Property, which shows the location of the 2004 Groundwater Management Area with respect to the Property, is attached hereto as Exhibit C and by this reference hereby incorporated herein. The plume has traveled over two miles with the flow of groundwater to the northwest from its origination point. The leading edge of the TCE plume was detected in monitoring wells on the Property at concentrations slightly greater than and also slightly less than the drinking water standard (five parts per billion (“ppb”)), with concentrations generally decreasing toward the northwest. Portions of the SWMU-58 groundwater plume exist beneath the Property.

Historic operations at the TEAD – N industrial/vehicle maintenance area resulted in volatile organic compounds (“VOCs”) being released to the environment from several known and suspected source areas. These releases resulted in contamination impacting soil and groundwater beneath TEAD – N. These sources are receiving active soil vapor extraction and air sparging treatment under remedial processes that are treating both the contaminated soil and associated groundwater. The post closure permit states that the “human health and ecological risk and migration of contaminated groundwater” are under control.

As part of the TEAD – N remedial action, groundwater monitoring is conducted in the SWMU-58 area. In addition to the basic network of wells comprising the TEAD – N groundwater monitoring program, certain wells exterior to the plume are also monitored to identify the limits of the plume. To delimit the 5-ppb plume boundary, TEAD – N monitoring wells, including D-10 and D-22 located on the Property, are monitored semi-annually and annually. Monitoring well D-25 was installed recently as a new sentinel well and is located about 200 feet north of D-22. This well is also monitored during both semi-annual monitoring events. Sentinel wells D-22 and D-25 are monitored to track and predict downgradient plume movement in order to assess the risk to downgradient receptors, and to determine when corrective actions may become necessary to mitigate those risks.

RG IV received a copy of the annual groundwater monitoring reports prepared by U.S. Army Corp of Engineers for Tooele Army Depot dated October 2016, October 2017 and October 2018. According to the annual groundwater monitoring reports, the contaminant of concern in the groundwater on the Property is TCE. A human health risk assessment (HRA) has been conducted and groundwater risk-based concentrations (RBCs) have been developed by TEAD-N for use in managing the SWMU 58 groundwater plume. See Section 3.0 of the *SWMU 58 GWMA Plan* for further details. The residential RBC for TCE is 5 ug/L and the industrial RBC for TCE is 600 ug/L. Currently, concentrations of TCE beneath the RG IV, LLC property are below the industrial RBC, but exceed the residential RBC at groundwater monitoring well D-15 (15.5 ug/L) under the southeastern portion of the property. The southeastern portion of the Property is subject to the 2004 Groundwater Management Area. The 2004 Groundwater Management Area includes groundwater use restrictions. Use of the groundwater for drinking water is restricted. However, at the present TCE concentrations, it may be used for other purposes such as processing, stock water and non-human consumption irrigation.

United States Environmental Protection Agency (“EPA”) guidance recommends vapor intrusion modelling if volatile organics such as TCE are detected in groundwater less than 100 feet below ground surface (bgs) beneath a proposed building or occupied structure. See *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air*, OSWER 9200.2-154 (USEPA June 2015). The vapor intrusion target groundwater concentration (TGWC) for TCE for residential land use is 1.2 ug/L and for commercial/industrial land use is 7.4 ug/L. Water levels in wells with TCE concentrations that currently exceed the TGWC are all deeper than 100 feet bgs. Due to the current depth of contaminated groundwater, vapor mitigation is not necessary at this time.

The Phase I Environmental Site Assessment for the Property revealed no evidence of recognized environmental conditions concerning the Property, except for the following:

1. Dissolved TCE in the groundwater at the Property, originating from a past release from the Tooele Army Depot. The TCE plume is well studied and monitored. Due to the well-documented nature of the TCE plume, ongoing treatment of the TCE source, continued monitoring of the plume and the groundwater restrictions in place throughout the 2004 Groundwater Management Area, the dissolved TCE in the groundwater at the Property is considered a controlled-recognized environmental condition.

Because of the ongoing groundwater monitoring requirements within the 2004 Groundwater Management Area and groundwater use restrictions in place on portions of the Property, RG IV has agreed to prepare this Site Management Plan for the Property. As part of the Site Management Plan, RG IV and the Utah Division of Waste Management and Radiation Control have agreed that RG IV will record an Environmental Covenant, approved by the Director of the Utah Division of Waste Management and Radiation Control, that imposes certain activity and use limitations on portions of the Property. RG IV has received a comfort letter from the Division and an enforceable written assurance letter from the Utah Division of Environmental Response and Remediation, copies of which are attached hereto as Exhibit D and by this reference hereby incorporated herein. An administrative record for the TEAD – N, including portions of the Property, is maintained and managed by the Utah Division of Waste Management and Radiation Control.

## **2. SITE MANAGEMENT PLAN REQUIREMENTS**

In addition to semiannual and annual groundwater sampling conducted at monitoring wells D-9, D-10, D-11, D-15, D-22 and D-25 and the three newer monitoring wells M-1, M-2 and M-3 on the Property by the Tooele Army Depot, RG IV proposes the following institutional controls and risk management strategies to address the impact of residual groundwater contamination beneath portions of the Property:

### **2.1 Groundwater Use Restrictions**

Groundwater will not be used for drinking water purposes in the southeastern portion of the Property that lies within the 2004 Groundwater Management Area as depicted on Exhibit C, but such groundwater may be used for other purposes such as processing, stock water and irrigation, provided that TCE concentrations do not exceed the industrial RBC for TCE of 600 ug/L, or the residential RBC of 5 ug/L at other areas, currently not impacted, which shall be verified by running groundwater extraction simulations according to the annually updated TEAD-N groundwater flow and transport model. Use of groundwater beneath the remainder of the Property shall be unrestricted unless the TCE plume migrates to those areas in concentrations that requires the same restrictions be applied to those areas. Therefore, prior to groundwater uses other than for industrial purposes (e.g., processing, stock water and irrigation), RG IV shall notify the Utah Division of Waste Management and Radiation Control to obtain written verification that the TCE plume has not migrated beyond the area depicted on Exhibit C in concentrations exceeding 5 ug/L.

### **2.2 Site Management Controls**

The Site Management Plan provides for additional protection to the site. RG IV is sufficiently informed to take reasonable steps to prevent or limit exposure to contaminants that may be present on the Property. Specifically, the locations of the groundwater monitoring wells installed by the Tooele Army Depot for purposes of monitoring the 2004 Groundwater Management Area that encompasses portions of the Property will be considered in Property development plans. The monitoring wells will need to be protected and accessible for ongoing groundwater monitoring. Any contamination not previously identified that is encountered in the Property development effort will be properly characterized and managed appropriately. RG IV will also comply with Utah Administrative Code (UAC) Rule 311-600, and UAC Rule 315-101,

and will stop any continuing releases, will prevent any threatened future releases, will prevent or limit human, environmental or natural resource exposure to earlier releases, will cooperate and provide access to persons authorized to investigate and take response action on the Property, and will implement the foregoing institutional controls.

### 2.3 Groundwater Use

There are currently no known beneficial uses of the shallow groundwater in the immediate area of the Property. There are nine wells located within the RG IV, LLC property boundaries, all of which are TEAD – N groundwater monitoring wells (D-9, D-10, D-11, D-15, D-22, D-25, M-1, M-2 and M-3). There are no other test wells and no irrigation or stock water wells according to the SWMU 58 GWMA Plan. The ongoing groundwater monitoring at the Property, coupled with the above institutional controls, namely, restrictions on future water appropriations beneath portions of the Property and compliance with the Site Management Plan, provide an effective risk management strategy for the Property site and are protective of human health and the environment.

### 2.4 Enforcement

The above site management requirements shall be imposed and enforced on RG IV as the current owner pursuant to recorded deed notices and on successors in title through deed restrictions. Following approval of this Site Management Plan, RG IV will file and record a copy of this Site Management Plan providing notice of its obligations concerning site management requirements, including groundwater use restrictions and site management controls, on the Property. Additionally, effective the date that these documents are recorded in the Tooele County Recorder's Office, each deed, title or other instrument of conveyance conveying an interest in the Property executed by RG IV or its successors in title to the Property shall include a notice stating that the Property is subject to this Site Management Plan and shall reference the recorded location of the Site Management Plan and the restrictions applicable to the Property under the Site Management Plan. The above site management requirements are intended to follow title to the land in perpetuity through a deed notice, and shall apply to and bind all subsequent property owners unless subsequent determinations by the Utah Division of Waste Management and Radiation Control or its successors indicate that the remaining level of risk is sufficiently low that the site management requirements may be reduced or eliminated in their entirety.

## 3. **CONTINGENCY PLAN**

### 3.1 Groundwater Monitoring Well Network

If any groundwater monitoring well becomes damaged or removed within the monitor well network on the Property, RG IV will immediately notify and coordinate with the Tooele Army Depot and the Utah Division of Waste Management and Radiation Control to repair the existing well or install a replacement well to allow for continued groundwater monitoring as soon as possible. RG IV will request and acquire written prior approval, which approval cannot be unreasonably withheld, from the Utah Division of Waste Management and Radiation Control before removing or abandoning any well on the Property. RG IV will replace or repair, as necessary, at its cost any groundwater monitoring wells damaged during Property development. It is likely that Property development will require the relocation of certain existing groundwater

monitoring wells on the Property. In such cases, RG IV will notify the Tooele Army Depot and the Utah Division of Waste Management and Radiation Control of those groundwater monitoring wells that need to be relocated. Such relocation wells, paid for by the Tooele Army Depot, should be placed as close as possible to the original locations, and should monitor the same aquifer, and be screened at the same depths, as the original wells. If, independently of Property development circumstances, the Tooele Army Depot desires to relocate and install a new or replacement well, or other types of monitoring and or remediation equipment or improvements, then the Tooele Army Depot may do so at its cost upon notification to and written approval by RG IV and the Utah Division of Waste Management and Radiation Control.

### 3.2 Termination of Groundwater Monitoring Network

If the Utah Division of Waste Management and Radiation Control determines that groundwater monitoring is no longer required on the Property, then the Division will direct the Tooele Army Depot to either remove or abandon in place, at the Tooele Army Depot's cost, all groundwater monitoring wells on the Property in compliance with applicable state laws and regulations. The Division may also direct the Tooele Army Depot to either remove or abandon in place, at the Tooele Army Depot's cost, individual groundwater monitoring wells if they are deemed unnecessary.

## **4. PROCEDURES IF SITE MANAGEMENT REQUIREMENTS ARE BREACHED**

The stated site management requirements will ensure continued protectiveness of human health and the environment based on current and future land use. If and when the Property Owner, currently RG IV, or its assigns ("Property Owner") becomes aware of a deviation from the Site Management Plan requirements then the Property Owner shall notify the Utah Division of Waste Management and Radiation Control within five (5) business days of their becoming aware of the deviation. The Property Owner will prepare a written report within twenty-five (25) days, detailing the nature of the deviation and the Property Owner's evaluation. The Property Owner and the Utah Division of Waste Management and Radiation Control will collectively re-evaluate whether the existing site management practices compromise the level of protection afforded by the original site management requirements and, if so, the need for alternate site management requirements and corrective action will be evaluated to provide a comparable level of protection. Any proposed modification to the site management plan requirements will require approval by the Utah Division of Waste Management and Radiation Control.

## **5. REFERENCES**

Gordon Geotechnical Engineering, Inc, 2018. Revised Report, Phase I Environmental Site for Proposed Office/Warehouse Development, East of Sheep Lane and North of DSR-112, Tooele, Utah, May 2018.

State of Utah, Utah Division of Waste Management and Radiation Control, 2016, Utah Hazardous Waste Post-Closure Permit, Post-Closure Monitoring and Corrective Action of Solid Waste Management Units for Tooele Army Depot, Tooele, Utah, October 2016.

Tooele Army Depot, Annual Groundwater Monitoring Report, Tooele Army Depot – North Area, Tooele, Utah, October 2018.

Tooele Army Depot, Annual Groundwater Monitoring Report, Tooele Army Depot – North Area, Tooele, Utah, October 2017.

Tooele Army Depot, Annual Groundwater Monitoring Report, Tooele Army Depot – North Area, Tooele, Utah, October 2016.

Tooele Army Depot, Groundwater Management Area Plan, Tooele Army Depot – North Area, Tooele, Utah, 2014.

**EXHIBIT A  
TO  
SITE MANAGEMENT PLAN**

[Alta Land Title Survey and Site Map – Figure 2 in the Phase I Environmental Site Assessment Report for the Property]

**EXHIBIT B  
TO  
SITE MANAGEMENT PLAN**

[Army Corps of Engineers Map Depicting Locations of Groundwater Monitoring Wells]

**EXHIBIT C  
TO  
SITE MANAGEMENT PLAN**

[Groundwater Management Area – Figure 3 in the Phase I Environmental Site Assessment  
Report for the Property]

**EXHIBIT D  
TO  
SITE MANAGEMENT PLAN**

[Comfort Letter, Dated June 15, 2018,  
Issued by the Utah Division of Waste Management and Radiation Control and Enforceable  
Written Assurance Letter, Dated June 21, 2018, Issued by the Utah Division of Environmental  
Response and Remediation]