

**SITE MANAGEMENT PLAN
CANYON CREEK SHOPPING CENTER, LOT 1
SPANISH FORK, UTAH**

Project No. 2273-002B

To:

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Utah Department of Environmental Quality
Division of Waste Management and Radiation Control
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Prepared for:

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1. INTRODUCTION

Wasatch Environmental, Inc., (Wasatch) has prepared this Site Management Plan (SMP) to present the planned long-term approach for managing arsenic impacts to groundwater and potential volatile organic compound (VOC) impacts to soil gas at Canyon Creek Shopping Center, Lot 1 (herein referred to as the "Property"). This SMP has been developed in an effort to receive "corrective action complete with controls" regulatory closure status for the Property.

This SMP has been prepared in accordance with the requirements of R315-101 "Cleanup Action and Risk-Based Closure Standards" that establish information requirements to support risk-based cleanup and closure standards at facilities for which remediation or removal of hazardous constituents to background levels is not expected to be achieved. The "Owner" (as defined in the Environmental Covenant (EC) shall comply with the SMP, including provisions relating to the Activity and Use Limitations pertaining to land use limitations, groundwater limitations, construction limitations, and disturbance limitations.

1.1 Site Description

The Property is an approximately 10.345-acre tract of real property, Tax Parcel Number: _____, located in Spanish Fork City, Utah County, Utah; and is Lot 1 of Canyon Creek Shopping Center Subdivision, Phase 10 (as shown in Exhibit A). The legal description of the Property is:

Lot 1, Canyon Creek Shopping Center Subdivision, Phase 10, according to the Plat thereof recorded in the Office of the County Recorder of Utah County, Utah.

1.2 Site Background

The Environmental Response Project is referred to as the Relocation of Municipal Landfill Waste, Canyon Creek Shopping Center Lot 1.

The project administrative records are maintained and managed by the Utah Department of Environmental Quality, Division of Waste Management and Radiation Control; and by the Division of Environmental Response and Remediation.

The Property previously included the western portions of two closed solid waste landfills (the Springville and Spanish Fork Landfills). The Spanish Fork and Springville landfills were municipal solid waste landfills, both of which were closed prior to implementation of the solid waste regulations under Subtitle D of the Resource Conservation and Recovery Act (RCRA).

The Property is also located within the area of the Expressway Lane Plume Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) site (UT0009134958). The Expressway Lane Plume CERCLIS site has been granted "No Further Remedial Action Planned" designation by the United States Environmental Protection Agency (U.S. EPA); however, as of 2018, there remained elevated concentrations of arsenic in groundwater associated with the Expressway Lane Plume.

The Expressway Lane Plume was the subject of an Innovative Assessment conducted by the Utah Department of Environmental Quality (DEQ), Division of Environmental Response and Remediation (DERR), in 1999. The results of the Innovative Assessment indicated that there were no detections of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, or polychlorinated biphenyls (PCBs) in groundwater; but that several total metals (arsenic, lead, and

chromium) were detected in groundwater at concentration above their respective U.S. EPA Maximum Contaminant Levels (MCLs). The results of the Innovative Assessment also indicated that the landfills in the area did not appear to be the source of the groundwater contamination. In the conclusion of the Innovative Assessment report, the DERR stated that the observed metals concentrations in groundwater either represent “natural levels for shallow groundwater in this area or indicate a separate upgradient source.”

The Expressway Lane Plume was the subject of a Preliminary Assessment conducted by the DERR, in 2005. In the conclusion of the Preliminary Assessment, the DERR rejected the concept of the metals concentrations in groundwater originating from a source located upgradient of the landfills and suggested that the landfills were the source. However, the DERR also acknowledged that they lacked the analytical data to verify this assertion, that the metals concentrations were “only moderately elevated,” and that the U.S. EPA had “judged the potential risks at this site to be minimal by issuing a ‘No Further Remedial Action Planned’ designation.”

The lateral extent of the Expressway Lane Plume has not been delineated, and the source of the contamination had not been definitively identified.

In September 2013, Cardno ATC conducted a limited Phase II subsurface investigation on the Property. Cardno ATC advanced seven soil borings. Three of the soil borings were completed as monitoring wells and four borings were completed as temporary piezometers. Soil and groundwater samples were analyzed for VOCs and Priority Pollutant List metals. The analytical results indicated that no VOCs were detected at concentration above the U.S. EPA Residential Regional Screening Levels (RSLs) in soil or above the MCLs in groundwater. Arsenic in soil exceeded both the Residential and Industrial RSLs in two soil samples. The laboratory reporting limits for arsenic exceeded both the Residential and Industrial RSLs, so conclusions cannot be reached for the remaining samples that were reported as non-detections. Soils in Utah commonly exhibit elevated background arsenic concentrations (commonly as high as 30 to 50 milligrams per kilogram [mg/kg]). The detected arsenic concentrations and the laboratory reporting limits were below the typical background arsenic concentrations. Arsenic in groundwater exceeded the MCL in one sample. The laboratory reporting limits for arsenic exceeded the MCL, so conclusions cannot be reached for the remaining samples that were reported as non-detections. Groundwater in Utah commonly exhibits elevated background arsenic concentrations that exceed the MCL.

In February 2018, Wasatch Environmental, Inc. (Wasatch) conducted a subsurface investigation on the eastern portion of the Property, in the areas of the Property which at the time overlaid the landfills. Wasatch advanced seven soil borings, sampling three of the soil borings for soil (immediately beneath the waste where waste was present), groundwater (within the waste where waste was present), and soil gas (within the waste where waste was present). The remaining four borings were advanced only for the purpose of logging the thickness of the waste. Soil samples were analyzed for VOCs, SVOCs, and RCRA 8 metals. Groundwater samples were analyzed for VOCs and RCRA 8 metals. Soil gas samples were analyzed for VOCs. No VOCs were detected in soil at concentrations exceeding either the Residential or Industrial U.S. EPA RSLs. No SVOCs were detected in soil. Arsenic was detected in all three soil samples at concentrations ranging from 3.72 to 10.8 mg/kg, exceeding both the Residential and Industrial U.S. EPA RSLs, but well within the range of background concentrations typically accepted by DWMRC. No other RCRA 8 metals were detected at concentrations exceeding either the Residential or Industrial U.S. EPA RSLs. No VOCs were detected in groundwater at concentrations exceeding the MCLs. Arsenic was detected in two groundwater samples at concentrations exceeding the MCL. No other RCRA 8 metals were detected at concentrations exceeding the MCLs. Soil gas samples collected from within the waste exhibited analyte concentrations for several VOCs that exceeded the U.S. EPA Vapor Intrusion Screening Level (VISL) calculator spreadsheet Commercial Target Sub-slab and Exterior Soil Gas Concentrations. The soil gas sample collected from one boring location also exhibited a methane concentration significantly above the Lower Explosive Limit (LEL). The soil gas sample collected from a boring located outside of the waste did not exceed the U.S. EPA VISL calculator spreadsheet Commercial Target Sub-slab and Exterior Soil Gas Concentrations for any of the VOCs, and the methane concentration was two orders of magnitude below the LEL.

In March 2018, ATC performed a soil gas survey on the Property in locations west of the landfills. ATC collected soil gas samples from 10 locations distributed throughout central and western portions of the Property. The soil gas samples were analyzed for VOCs and methane. None of the soil gas samples exceeded the U.S. EPA VISL calculator spreadsheet Commercial Target Sub-slab and Exterior Soil Gas Concentrations for any of the VOCs. Methane was not detected in any of the soil gas samples.

The results of the subsurface investigations conducted between 2013 and 2018 demonstrated that the primary environmental issue related to the Property is that of elevated background concentrations of arsenic in soil and elevated arsenic concentrations in groundwater, which is consistent with the findings previously documented for the Expressway Lane Plume CERCLIS site. The results of these investigations also appear to demonstrate that VOC concentrations in soil gas (including methane) decline significantly outside the footprint of the landfills.

Between September 26 and November 28, 2018, Spanish Fork City had the landfill waste removed from the Property and relocated immediately east of the Property, within the footprint of the original landfills. The landfill waste was successfully relocated, and the landfill cap was restored. This work was performed with the approval and oversight of the DWMRC. The municipal landfill waste was successfully relocated off the Property and the top and sides of the landfill cap were restored covering the landfill waste. The relocation of the landfill waste and restoration of the landfill cap, in combination with the required vapor mitigation measures discussed in Section 3.1.6, should mitigate vapor encroachment onto the Property and prevent vapor intrusion into structures constructed on the Property.

Three soil sample, three groundwater samples, and three soil gas samples were collected from the Property following the relocation of the landfill waste. The soil and groundwater samples were analyzed for RCRA-8 metals, VOCs, and SVOCs. All of the soil samples exhibited arsenic concentrations in excess of the Industrial RSL. No other analytes in soil exceeded either the Residential or Industrial RSLs. All three groundwater samples exhibited arsenic concentrations in excess of the MCL. One groundwater sample exhibited a cadmium concentration in excess of the MCL and one groundwater sample exhibited a bis(2-ethylhexyl)phthalate concentration in excess of the MCL. No other analytes in groundwater were detected at concentrations in excess of their respective MCLs. Soil gas samples were analyzed for VOCs and methane. Methane was detected in only one of the soil gas samples at a concentration several orders of magnitude below the LEL for methane. Ethylbenzene and 1,4-dichlorobenzene were both detected in soil gas at concentrations above the U.S. EPA VISL Online Calculator Residential Target Sub-slab and Exterior Soil Gas Concentrations, but below the U.S. EPA VISL Online Calculator Commercial Target Sub-slab and Exterior Soil Gas Concentrations. The results of the work, including the sampling results, have been reported to the DWMRC in a report titled "Work Plan Implementation Report for Relocation of Municipal Landfill Waste, Canyon Creek Shopping Center" ("Landfill Waste Relocation Report") dated _____, 2018. DWMRC approved the Landfill Waste Relocation Report by letter dated _____, 201_, and issued a Corrective Action Complete with Controls dated _____, 201_ (CACWC) to Spanish Fork City.

The Property is in a condition suitable for redevelopment with commercial or industrial land use consistent with the activity and use limitations presented in the EC and restated in Section 3.1 of this SMP.

2. RISK ASSESSMENT

No formal human health risk assessment or ecological risk assessment have been performed for the Property. Arsenic concentrations in soil are within the range typically accepted by DWMRC as background. Arsenic concentrations in groundwater have been granted a "No Further Remedial Action Planned" status by the U.S. EPA, and concentrations are within a range that can be adequately managed through land use controls. VOC concentrations (including methane) in soil gas do not appear to be an issue in locations outside of the landfill and any minimal residual risk that may exist can be adequately managed through engineering controls. Therefore, formal risk assessments are not required for the Property.

3. SITE MANAGEMENT

3.1 Activity and Use Limitations

The EC to be recorded against the Property imposes the following activity and use limitations:

3.1.1 Site Management Plan

The Owner shall comply with this SMP.

3.1.2 Land Use Limitations

Use of the Property is limited to commercial and industrial land use consistent with applicable local zoning laws. Residential land use, land uses with human exposure scenarios similar to residential land use, and land uses that include sensitive populations are prohibited, unless otherwise approved by the Director. Planting crops or fruit trees for consumption by humans or livestock is prohibited.

3.1.3 Groundwater Limitations

Groundwater shall not be used for drinking water, irrigation or bathing purposes. Other uses of groundwater on the Property shall be reviewed and approved by the Director prior to implementation.

3.1.4 Disturbance Limitations

Appropriate care shall be exercised during construction and when modifications are made to human-occupied structures constructed on the Property so as to prevent damage to any vapor mitigation measures which have been installed, and to ensure appropriate repairs are promptly made in the event damage does occur. Appropriate care shall be exercised during construction and maintenance activities to protect groundwater or soil gas monitoring wells, if any, that may be installed on the Property, and to ensure appropriate repairs are promptly made, or replacement monitoring wells are promptly installed, in the event damage does occur. Repairs shall be made within a reasonable period of time from of the discovery of the damage.

3.1.5 Construction Dewatering Limitation

Dewatering conducted to facilitate construction may require that the groundwater be treated to reduce the arsenic concentrations prior to discharge. Prior to the commencement of dewatering activities, appropriate permit(s) shall be obtained for discharge to either the storm water system (under a Utah Pollution Discharge Elimination System permit obtained from the Utah Division of Water Quality) or sanitary sewer (under a Wastewater Discharge Permit obtained from Spanish Fork City). Groundwater testing or treatment may be required by the receiving entity.

3.1.6 Vapor Mitigation

To mitigate the risk of vapor intrusion, appropriate vapor mitigation measures are required for structures intended for human occupancy constructed on the Property. Appropriate vapor mitigation measures may include, but are not limited to: installation of a suitable vapor barrier, installation of an active or passive sub-slab or sub-membrane depressurization system, construction of occupied structures above a parking garage, or construction of occupied structures utilizing positive-pressure ventilation systems. Vapor mitigation measures shall be reviewed and approved by the Director prior to implementation.

If vapor mitigation systems are installed, this SMP may need to be modified to include specific operations and maintenance activities required to verify the installed system remains protective of

building occupants. Modifications to the SMP, if any, will require review and approval by the Director.

3.2 Maintenance, Access, and Inspections

Under the EC, the Owner of any portion of the Property, shall be responsible for compliance with the SMP and EC.

The Holder under the EC and the Director of the DWMRC (Director) and their respective authorized agents, employees, and contractors shall have rights of reasonable access to the Property at any time after the effective date of the EC for inspections and monitoring of the compliance with the EC, and for complying with the terms and conditions of the EC and this SMP. Nothing in this SMP shall be construed as expanding or limiting any access and inspection authorities of the Holder or Director under the law.

3.2.1 Notice

Any party or person desiring to access the Property under authority of the EC shall provide notice to the then current Owner of the affected portion of the Property not less than 48 hours in advance of accessing the Property, except in the event of an emergency condition which reasonably requires immediate access. In the event of any such emergency condition, the party exercising this access right will provide notice to the then current owner of the affected portion of the Property requiring access as soon thereafter as is reasonably possible.

3.2.2 Disruption

To the extent that the Holder, the Director or their authorized representatives, conduct any activities on or within any portion of the Property, they will use reasonable efforts to comply with the then current Owner's business operation and security needs and requirements, and will conduct such activities so as to cause the least amount of disruption to the use of the affected portion of the Property as may be reasonably possible. Any person who conducts any activities shall repair or replace any improvements or landscaping damaged on the affected portion of the Property by such activities. The Director will determine what needs, requirements, and activities are reasonable. Should the Director's activities cause damage to the affected portion of the Property improvements or landscaping that are not repaired or replaced, the injured party may present a claim against the State of Utah in accordance with Utah law.

3.3 Environmental Covenant

An EC containing the above referenced activity and use limitations will be recorded with the Office of the County Recorder of Utah County, Utah.

3.4 Monitoring Requirements

The Owner shall comply with Utah Division of Air Quality requirements for monitoring emissions, if any, resulting from the vapor mitigation measures installed at the Property. No other monitoring is required under the SMP or EC except for inspections as discussed in Section 3.2.

3.5 Site Management Contacts

Inquiries concerning the SMP should be directed to the following:

Canyon Creek Phase Ten L.L.C.

Manager
2733 East Parleys Way, Suite 300
Salt Lake City, Utah 84109
(801) 485-7770

**Utah Department of Environmental Quality
Division of Waste Management and Radiation Control**

Director
P.O. Box 144880
Salt Lake City, Utah 84114-4880
(801) 536-0200

EXHIBIT A

Location Map
Parcel Map
(2 pages)

