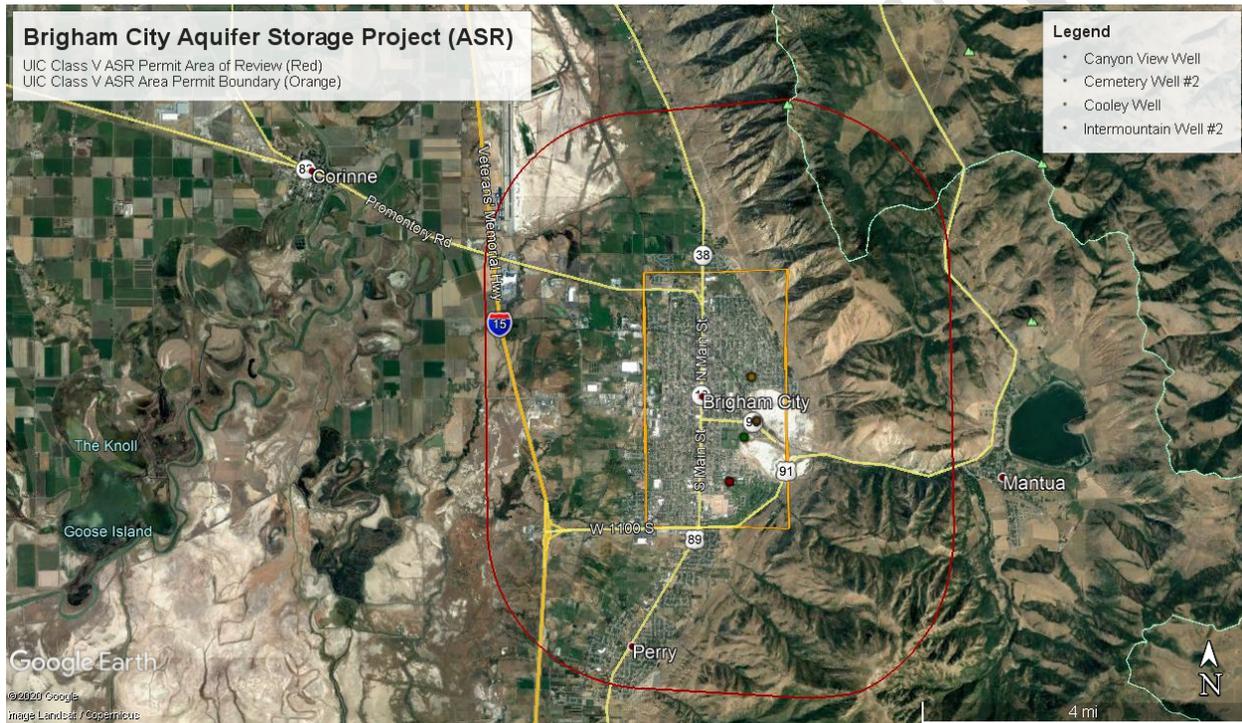


**Statement of Basis and Fact Sheet**  
**Class V Area Permit Renewal and Modification**  
**UIC Permit Number UTU-03-AP-173E18B**  
**May 2021**

**Brigham City Corporation**  
**PO Box 1005**  
**Brigham City, Utah 84302**



**Figure 1. Brigham City UIC Class V Permit Area and Aquifer Storage and Recovery Wells.**

<p><b><u>Location:</u></b> Box Elder County, Utah</p>	<p><b><u>Operator:</u></b> Brigham City Corporation</p>
<p><b><u>Facility Contact:</u></b> Brett Jones City Engineer PO Box 1005 Brigham City, UT 84302 <a href="mailto:brettj@jonescivil.com">brettj@jonescivil.com</a> Tel. (801) 476-9767</p>	<p><b><u>Regulatory Contact:</u></b> Drummond Earley Utah Department of Environmental Quality Division of Water Quality UIC Program 195 North 1950 West Salt Lake City, UT 84116 <a href="mailto:dearley@utah.gov">dearley@utah.gov</a> Tel. 801.536.4088</p>

## **Purpose of the Statement of Basis and Fact Sheet**

The Utah Division of Water Quality (Division) has prepared this draft Fact Sheet and Statement of Basis (FSSOB) for the draft Underground Injection Control (UIC) Class V Area Permit (Draft Permit) for Brigham City Corporation (BCC). Pursuant to the Utah UIC administrative rules in Utah Administrative Code R317-7 et. seq. and federal regulations in Title 40 of the Code of Federal Regulations (CFR) incorporated by R317-7-1 the purpose of this FSSOB is to briefly describe the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. To meet these objectives, this FSSOB contains:

- Background information on the permit process and names and telephone numbers of contacts for additional information (listed on the first page of this FSSOB above);
- A description of the draft permit review process and public participation;
- A brief discussion of the facility and process;
- Basis for draft permit conditions;
- A brief discussion of BCC's request to modify and renew the permit by adding the Canyon View well to the permit

## **Permit Process**

### **Application and Review Period**

In October of 2020 BCC requested to add the Canyon View Well which is a major permit modification under UIC rules. As permit **UTU-03-AP-173E18B** requires renewal in 2021 the Division has incorporated the permit modification in the renewal subject to Division review. The Division completed its review of this request and has completed the provisionally approved Draft Permit which includes the new Canyon View Well.

### **Public Participation**

The Draft Permit was prepared by the Division for public notice and public comment. Public comments will be accepted by the Division for 30 days following the first day of public notice in the local newspaper that serves the affected community. A hearing may be held by the Division if public comments are substantial and the Draft Permit requires revision based on these comments.

## **Description of Permitted Facility**

Brigham City Corporation operates an aquifer recharge and recovery system as an integral part of their public water supply system. The purpose of the recharge and recovery system is to inject an excess of 4 to 6 million gallons per day of high quality water from six (6) Mantua Valley springs located near Mantua (Figure 1) during the winter months for subsequent withdrawal during the high use summer months. The springs from which excess water is taken are:

Olsen Spring  
West Halling Spring  
Peter Jensen Spring  
East Halling Spring  
Birch Spring  
Rock Spring

The spring water is chlorinated and fluoridated prior to injection into the following three (3) production wells:

Cooley Well  
Cemetery Well No. 2  
Intermountain Well No. 2

Under the area permit, additional injection/recovery wells may be constructed within the area bounded by:

North Boundary: 1200 North Street  
South Boundary: 1100 South Street  
West Boundary: 800 West Street  
East Boundary: 1200 East Street

### **Site Hydrogeology**<sup>1</sup>

Precambrian and Cambrian age rocks of the Wasatch Mountains lie east of sedimentary deposits of the Lake Bonneville Basin. The contact between the basement and sedimentary rocks is the Wasatch Fault, which is a normal fault in this segment.

Brigham City lies on a broad alluvial fan of sediments eroded from and deposited at the mountain front. The clastic formation is coarse and angular near the mountain front and becomes finer-grained westward into the basin.

<sup>1</sup> Source: Technical Publication No. 44 of the State of Utah Department of Natural Resources.

Groundwater at and south of Brigham City is found in Pliocene and Pleistocene age alluvial deposits, up to several hundred feet of saturated and highly-permeable unconsolidated basin-fill gravel and sand. Total dissolved solids concentration of the groundwater is low near the mountains but the water becomes more mineralized toward the west and with depth.

### **Background Water Quality**

The water quality from the springs that is injected into the alluvial aquifer is generally a Class I water with an average TDS value of 230 mg/l. Concentrations of dissolved trace metals are very low. Arsenic concentrations are well below the ground water quality standard of 0.05 mg/l, and were not detected in a 2012 water sample.

### **Basis for Requiring Permit**

Under UAC R317-7-5.1 and UAC R317-7-5.5 the Director of the Utah Water Quality Board (Director) is authorized to call for a permit for any Class V injection well that may endanger an underground source of drinking water (USDW). Inasmuch as the source waters have historically shown the presence of coliform bacteria, and the recharge area for the source waters may be subject to spills and to discharge of contaminants (e.g. pesticides, herbicides, fire retardants, etc.), it is the determination of the Director that the Aquifer Storage and Recovery (ASR) project described above should be permitted.

The Utah Underground Injection Control (UIC) Class V permit is based on the following restrictions to ensure compliance with state and federal UIC Program rules and regulations and Utah Ground Water Quality Protection Program rules and regulations.

### **Permit Conditions**

Part I of the permit is the Authorization to Construct and Inject. Part II includes all general permit conditions required in all UIC permit with the focus on Class III permits. Part III contains all the specific permit conditions required of all Class III solution mining permits and particularly for BCC.

### **Standard Operating Procedures Plan**

Brigham City Corporation shall submit for the Director's approval an updated Standard Operating Procedures Plan that meets the requirements of Part III (C) of this permit. The Plan shall incorporate the following wells: Cooley Well, Intermountain Well #2, Cemetery Well #2, and the new Canyon View Well.

### **Monitoring, Testing and Reporting**

Injectate Characterization - Each source of injectate will be analyzed for a complete suite of parameters once during the permit cycle. Additionally, any new source for injection will be analyzed for a complete suite of parameters annually for the permit cycle. During each injection event, the source of the injectate will be analyzed for an abbreviated suite of parameters that include those constituents of concern and those constituents that have historically been detected. The monitoring parameter list and monitoring schedule are detailed in Attachments B and D of the permit, respectively.

### **Basis for Permit Modification**

In 2020 Brigham City requested to add the new Canyon View Well to the ASR project. This 14-inch diameter, 636-foot deep well is within the UIC Class V Permit Area (Figure 1) and is situated at the mouth of Box Elder Canyon and is located at North 1110 feet and East 951 feet from the W¼ Corner of Section 19, T9N, R1W, SLB&M or 41°30'21.69" N 112°00'09.33" W. Canyon View Well is a point of diversion under Water Right #29-4482. The BCC City Water Division desires an additional recharge point to more effectively recharge and treat the aquifer(s) near the mouth of Box Elder Canyon. The Canyon View Well was developed and approved in 2014 and appears to have similar geologic characteristics to Cemetery Well #2. It has been selected as an ideal location with favorable attributes for inclusion in the City's aquifer storage and recovery program. The additional recharge point has been approved by the Division of Water Rights (permit attached) and BCC is working on approval with the Division of Drinking Water. As the new well construction, operation and injectate is very similar to existing wells which are constructed in accordance with standard public water supply well requirements under the authority of the Division of Drinking Water, the Division has provisionally approved the Draft Permit pending public participation and comment as described above.