

UTAH DIVISION OF WATER QUALITY
CLASS V AREA PERMIT
FOR AQUIFER STORAGE AND RECOVERY
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

UIC Permit Number: UTU-03-AP-173E18B

Box Elder County, Utah

Permit Issued to:

Brigham City Corporation
PO Box 1005
Brigham City, Utah 84302

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PART I. AUTHORIZATION TO CONSTRUCT AND INJECT

Pursuant to the Utah Underground Injection Control (UIC) Program Regulations codified in the Utah Administrative Code (UAC) R317-7,

Brigham City Corporation (BCC)
P.O. Box 1005
Brigham City, UT 84302

is hereby authorized to construct and operate Class V Aquifer Storage and Recovery (ASR) wells in Box Elder County, Utah. A general location map is included as Attachment A.

The aquifer recharge injection wells completed in Quaternary age sediments located in Brigham City at approximately 1100 South Street to 1200 North Street and 1200 East Street to 800 West. The permit area lies within the following bounds: lat. 41° 29' 11" N to 41° 32' 18" N and longitude 111° 59' 37" E to 112° 01' 44" W. Injection is subject to the condition that the permittee meets the requirements set forth herein.

The UIC permitted facility includes:

- i. The 4 wells currently authorized under this area permit are:
 - (1) Cooley Well
 - (2) Cemetery Well #2
 - (3) Intermountain Well #2
 - (4) Canyon View Well
- ii. New wells constructed in accordance with Part III (C) of this permit;
- iii. Pipelines between the final injection pumps and the injection wellheads;
- iv. Injection wells, wellheads, and all downhole well equipment and instrumentation within the permit area; and
- v. Instrumentation used to measure volume, pressure, and physical properties of fluids injected into the wells.

All references to UAC R315-2-3, UAC R317-7, and to Title 40 of the Code of Federal Regulations (40 CFR) are to all regulations that are in effect on the date this permit becomes effective. The following are incorporated as enforceable attachments to this permit:

- Attachment A - General Location Map of the Brigham City Class V Aquifer Storage and Recharge Project, Box Elder County.
- Attachment B - Table 1 – Monitoring Parameters and Monitoring Schedule
- Attachment C - Standard Operating Procedures
- Attachment D - Monitoring, Recording, and Reporting Plan

This renewal of the original permit is based upon representations made by the permittee and other information contained in the administrative record. **It is the responsibility of the permittee to read and understand all provisions of this permit.**

Any person who violates the Utah Water Quality Act (UWQA), or any permit, rule, or order adopted under it, is subject to the provisions of section UCA 19-5-115 of the UWQA governing violations.

This permit and the authorization to inject shall be issued for 5 years, unless terminated.

This permit shall become effective June 1st, 2021.

This permit shall expire midnight May 31st, 2026.

Signed this 31st Day of May, 2021.



Erica Brown Gaddis, PhD
Director
Utah Division of Water Quality

DWQ-2021-008418

PART II. GENERAL PERMIT CONDITIONS

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The permittee, authorized by this permit, shall not construct, operate, maintain, convert, plug, abandon or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water (USDW), if the presence of that contaminant may cause a violation of any primary drinking water standard under the Utah Public Drinking Water Administrative Rules, UAC R309-200 and 40 CFR Part 141, or may otherwise adversely affect the health of persons. Any underground injection activity not specifically authorized in this permit is prohibited unless otherwise authorized-by-rule or by another UIC permit. Compliance with this permit does not constitute a defense to any action brought under the Utah Water Quality Act (UWQA) Title 19, Chapter 5 Utah Code Annotated 1953, or any other common or statutory law or regulation. Issuance of this permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Nothing in this permit shall be construed to relieve the permittee of any duties under applicable regulations.

B. SEVERABILITY

The provisions of this permit are severable. If any provision of this permit or the application of any provision of this permit to any circumstance is held to be invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

C. CONFIDENTIALITY

In accordance with Utah Code 19-1-306 (Records of the Department of Environmental Quality), Utah Code 63G-2-309 (Confidentiality Claims), and Utah Code 19-5-113 (DWQ Records and Reports Required by Owners/Operators) any information deemed by the permittee to be entitled to trade secret protection submitted to the DWQ pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "Confidential Business Information" on **each** page containing such information. If no claim is made at the time of submission, the DWQ may make the information available to the public without further notice. Claims of confidentiality may be denied by the DWQ according to the procedures detailed in Utah Code 63G-2 and the federal Freedom of Information Act (FOIA). Claims of confidentiality for the following information will be denied as per UAC R317-7-9.7:

1. The name and address of the permittee.
2. Information that deals with the existence, absence or level of contaminants in drinking water.

D. CONDITIONS APPLICABLE TO ALL UIC PERMITS (40CFR144.51)¹

The following conditions are required for all UIC permits. Specific requirements for implementing these conditions are included in Part III of this permit, as necessary.

1. Duty to Comply (40CFR144.51(a))

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and the UWQA and is grounds for enforcement action; permit termination, revocation and re-issuance, modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit issued in accordance with UAC R317-7-8 (40 CFR 144.34). Such noncompliance may also be grounds for enforcement action under the Utah Solid and Hazardous Waste Act (USHWA), Title 19, Chapter 6, Utah Code Annotated 1979.

2. Duty to Reapply (40CFR144.51(b))

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The permittee shall submit a complete permit renewal application at least 180 days before this permit expires.

3. Need to Halt or Reduce Activity Not a Defense (40CFR144.51(c))

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate (40CFR144.51(d))

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

5. Proper Operation and Maintenance (40CFR144.51(e))

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

¹ Parenthetical references to the Code of Federal Regulations (CFR) and / or the Utah Administrative Code (UAC) for the UIC Program indicate the requirement for inclusion in the permit.

6. Permit Actions

(40CFR144.51(f), 40 CFR 124.5, 40 CFR 144.38, 40 CFR 144.39, 40 CFR 144.40, 40 CFR 144.41)

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in sections a) and b) below. All requests shall be in writing and shall contain facts or reasons supporting the request. The filing of a request for a permit modification, revocation and re-issuance, or termination on the part of the permittee, does not stay any permit condition. This permit may be transferred according to the procedures given in section d).

a) Modify or Revoke and Re-Issue Permits

When the Director of the Utah Division of Water Quality (hereafter referred to as 'the Director') receives any information (for example, inspects the facility, receives information submitted by the permittee as required in the permit, receives a request for modification or revocation and reissuance, or conducts a review of the permit file), the Director may determine whether or not one or more of the causes listed in paragraphs (1) and (2) of this section for modification or revocation and reissuance or both exist. If cause exists, the Director may modify or revoke and reissue the permit accordingly, subject to the limitations of paragraph (3) of this section, and may request an updated application if necessary. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term. If cause does not exist under this section a) or under section c) for minor modifications, the Director shall not modify or revoke and reissue the permit. If a permit modification satisfies the criteria for minor modifications in section c) the permit may be modified without a draft permit or public review. Otherwise, a draft permit must be prepared and other procedures in 40 CFR 124, incorporated by reference into the Utah UIC Program rules (hereafter referred to as '40 CFR 124'), must be followed.

- (1) Causes for modification. For Class V wells the following may be causes for revocation and reissuance as well as modification if the permittee requests or agrees.
 - i. Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.
 - ii. Information. The Director has received information. For UIC area permits, this cause shall include any information indicating that cumulative effects on the environment are unacceptable.
 - iii. New regulations. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards

or regulations or by judicial decision after the permit was issued. Permits for Class V wells may be modified during their permit terms for this cause only as follows:

- (i) For promulgation of amended standards or regulations, when:
 - (A) The permit condition requested to be modified was based on a promulgated part 146 regulation; and
 - (B) EPA has revised, withdrawn, or modified that portion of the regulation on which the permit condition was based, and
 - (C) A permittee requests modification in accordance with § 124.5 within ninety (90) days after Federal Register notice of the action on which the request is based.
 - (ii) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations if the remand and stay concern that portion of the regulations on which the permit condition was based and a request is filed by the permittee in accordance with § 124.5 within ninety (90) days of judicial remand.
 - iv. Compliance schedules. The Director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy. See also paragraph (3) under section c) – Minor Modification of Permit).
- (2) Causes for modification or revocation and reissuance. The following are causes to modify or, alternatively, revoke and re-issue a permit:
- i. Cause exists for termination under section b), and the Director determines that modification or revocation and re-issuance is appropriate.
 - ii. The Director has received notification (as required in the permit, see paragraph (4) under section c) – Minor Modification of Permit) of a proposed transfer of the permit. A permit also may be modified to reflect a transfer after the effective date of an automatic transfer (see paragraph (2) of section d) – Transfer of Permit) but will not be revoked and re-issued after the effective date of the transfer except upon the request of the new permittee.
 - iii. A determination that the waste being injected is a hazardous waste as defined in 40 CFR 261.3 either because the definition has been revised, or because a previous determination has been changed.
- (3) Facility siting. Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.

b) Termination of Permit

- (1) The Director may terminate a permit during its term, or deny a permit renewal application for the following causes:
 - i. Noncompliance by the permittee with any condition of the permit;
 - ii. The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or
 - iii. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
- (2) The Director shall follow the applicable procedures in 40 CFR 124 in terminating any permit under this section.

c) Minor Modification of Permit

Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of 40 CFR 124. Any permit modification not processed as a minor modification under this section must be made for cause and with 40 CFR 124 draft permit and public notice as required in section a). Minor modifications may only:

- (1) Correct typographical errors;
- (2) Require more frequent monitoring or reporting by the permittee;
- (3) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; or
- (4) Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Director.
- (5) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.
- (6) Change construction requirements approved by the Director pursuant to 40 CFR 144.52(a)(1) (establishing UIC permit conditions), provided that any such alteration shall comply with the requirements of 40 CFR 144 and 40 CFR 146.
- (7) Amend a plugging and abandonment plan which has been updated.

d) Transfer of Permit

- (1) Transfers by Modification. Except as provided in paragraph (2) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under paragraph (2)(ii) under section a)), or a minor modification made (under paragraph (4) of section c)) to identify the new permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.
- (2) Automatic Transfers. As an alternative to transfers under paragraph (1) of this section, any UIC permit for a well not injecting hazardous waste or injecting carbon dioxide for geologic sequestration may be automatically transferred to a new permittee if:

- i. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date referred to in paragraph (2)(ii) of this section;
- ii. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them, and the notice demonstrates that the following financial responsibility requirements of 40 CFR 144.52(a)(7) will be met by the new permittee:

The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:

- (A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan and submitted a plugging and abandonment report; or
- (B) The well has been converted; or
- (C) The transferor of a permit has received notice from the Director that the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.

The permittee shall show evidence of such financial responsibility to the Director by the submission of a surety bond, or other adequate assurance, such as a financial statement or other materials acceptable to the Director.

- iii. The Director does not notify the existing permittee and the proposed new permittee of intent to modify or revoke and re-issue the permit. A modification under this paragraph may also be a minor modification under section c) – Minor Modification of Permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (2)(ii) of this section.

7. Property Rights (40CFR144.51(g))

This permit does not convey any property rights of any sort, or any exclusive privilege.

8. Duty to Provide Information (40CFR144.51(h))

The permittee shall furnish to the Director within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and re-issuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

9. Inspection and Entry (40CFR144.51(i))

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by the law, to:

- a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b) Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA and / or UWQA any substances or parameters at any location.

10. Monitoring and Records (40CFR144.51(j))

- a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b) The permittee shall retain records of all monitoring information, including the following:
 - (1) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and
 - (2) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.

- c) Records of monitoring information shall include:
- (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The names of individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
11. Signatory Requirements (40CFR144.51(k))
- All reports or other information, submitted as required by this permit or requested by the Director, shall be signed and certified as follows:
- a) Applications. All permit applications shall be signed as follows:
- (1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - i. A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or
 - ii. the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- Note:
- DEQ does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR 144.32(a)(1)(i). DEQ will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under 40 CFR 144.32(a)(1)(ii) rather than to specific individuals.
- (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) The chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

- b) Reports. All reports required by permits and other information requested by the Director shall be signed by a person described in section a), or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- (1) The authorization is made in writing by a person described in paragraph a) of this section;
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - (3) The written authorization is submitted to the Director.
- c) Changes to authorization. If an authorization under section b) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of section b) must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
- d) Certification. Any person signing a document under section a) or b) shall make the following certification:
- “I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OF THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.”

12. Reporting Requirements (40CFR144.51(l))

Specific requirements for reporting the following items are included in Part III of the permit.

a) Planned Changes

The permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the UIC-permitted facility. Notification of planned changes on the part of the permittee, does not stay any permit condition.

- b) Anticipated Noncompliance
The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. Notification of anticipated noncompliance on the part of the permittee, does not stay any permit condition.
- c) Permit Transfers
This permit is not transferable to any person except in accordance with section d) of Permit Actions – Transfer of Permit. The Director may require modification or revocation and re-issuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act and / or the UWQA.
- d) Monitoring Reports
Monitoring results shall be reported at the intervals specified in Part III of this permit.
- e) Compliance Schedule
Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule specified in Part III B of this permit shall be submitted no later than 30 days following each schedule date.
- f) Endangering Noncompliance
The permittee shall report to the Director any noncompliance that may endanger health or the environment, as follows:
 - (1) Twenty-four Hour Reporting
Endangering noncompliance information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. Such reports shall include, but not be limited to, the following information:
 - i. Any monitoring or other information that indicates any contaminant may cause an endangerment to a USDW, or
 - ii. Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs.
 - (2) Five-day Reporting
A written submission shall be provided within five days of the time the permittee becomes aware of the circumstances of the endangering noncompliance. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

- g) **Other Noncompliance**
The permittee shall report all instances of noncompliance not reported under 12d) (Monitoring Reports), 12e) (Compliance Schedule Reports), or 12f) (Endangering Noncompliance Monitoring) of this section in the next Monitoring Report. The reports shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- h) **Other Information**
When the permittee becomes aware of a failure to submit any relevant facts in the permit application or submitted incorrect information in a permit application or in any report to the Director, the permittee shall submit such facts or information within 10 days after becoming aware of the failure to submit relevant facts.
13. Requirements Prior to Commencing Injection (40CFR144.51(m))
- a) For new injection well authorized by individual permit, a new injection well may not commence injection until construction is complete, and
- (1) The permittee has submitted notice of completion of construction to the Director; and
 - (2) Either of the following:
 - i. The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or
 - ii. The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in section a), in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.
- b) For new injection wells authorized by an area permit under UAC R317-7-7 (40 CFR 144.33), requirements prior to commencing injection shall be specified in Part III of the permit.
14. Notification Prior to Conversion or Abandonment. (40CFR144.51(n))
The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well or in the case of area permits before closure of the projects.
15. Plugging and Abandonment Requirements. (40CFR144.51(o))
A Class V permit may include conditions for developing a plugging and abandonment plan that meets the applicable requirements of UAC R317-7 to ensure that plugging and abandonment of the well will not allow the movement of fluids

into or between USDWs. If the plan meets the plugging and abandonment requirements of UAC R317-7, the Director shall incorporate it into the permit as a permit condition. Where the review of the plan submitted in the permit application indicates the plan is inadequate, the Director may require the applicant to revise the plan, prescribe conditions meeting the requirements of this paragraph, or deny the permit. For purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment. Requirements for implementing the approved plugging and abandonment plan are specified in Part III of this permit.

16. Plugging and Abandonment Report. (40CFR144.51(p))

If a plugging and abandonment plan is required, requirements for submitting a plugging and abandonment report are specified in Part III of this permit.

PART III. SPECIFIC PERMIT CONDITIONS

A. DURATION OF PERMIT
(R317-7-9.5 and 40CFR144.36)

This UIC Class V ASR permit shall be issued for 5 years.

B. COMPLIANCE SCHEDULE
(40CFR144.53)

Brigham City Corporation must address each of the following conditions within the time period indicated for each item. Failure to do so may result in the termination of the permit according to Part II(D)(6)(b) of this permit.

1. Permit Compliance Schedule Item #1 (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 (E) of this permit. The Plan shall incorporate the following wells: Cooley Well, Intermountain Well #2, and Cemetery Well #2.

The Plan shall be submitted within 90 days of the effective date of this permit.

2. Permit Compliance Schedule Item 2 (Monitoring, Recording and Reporting Plan)

Brigham City Corporation shall submit for the Director's approval an updated Monitoring, Recording and Reporting Plan that meets the requirements of Part III (F) of this permit.

The Plan shall be submitted within 90 days of the effective date of this permit.

C. CONSTRUCTION REQUIREMENTS

This permit does not authorize the construction of new ASR wells. If Brigham City Corporation wishes to construct a new ASR well, an application for a major permit modification will be required.

D. OPERATING REQUIREMENTS
(R317-7-10.2(A))

1. Class V ASR Injection Well Operation Standards

Class V ASR wells shall be operated to meet the performance standard (R317-7-5.3 and 40 CFR 144.12(a)) for the UIC Program which states that:

No owner or operator of an injection well shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation or may otherwise adversely affect the health of persons.

2. Standard Operating Procedures Plan

The approved and enforceable Standard Operating Procedures Plan that meets all the operating requirements of this section is included as Attachment C of this permit.

3. Maximum Allowable Surface Injection Pressure (MASIP)

Except during well stimulation, the maximum allowable surface injection pressure (MASIP) at the wellhead shall be calculated to assure that pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. In no case shall the injection pressure initiate fractures in the confining zone or cause the migration of injection or formation fluids into an USDW.

4. Injection Fluid Limitations

- i. Injection is explicitly limited to the Quaternary age sediments located in Brigham City at approximately 1100 South Street to 1200 North Street and 1200 East Street to 800 West. The permit area lies within the following bounds: lat. 41° 29' 11" N to 41° 32' 18" N and longitude 111° 59' 37" E to 112° 01' 44" W (Attachment A).
- ii. Fluid injected is limited to treated spring water originating from Mantua Valley sources.
- iii. Prior to injection the spring water shall be chlorinated and fluoridated.
- iv. Injected water shall meet all Federal and State Maximum Contaminant Levels for Drinking Water (MCLs), and State Ground Water Quality Standards. The maximum total dissolved solids (TDS) of injected water shall not exceed 500 milligrams per liter (mg/l).
- v. The permittee shall not inject any hazardous waste as defined by UAC R315-2-3 or 40 CFR 261 at any time during operation of the facility.
- vi. All additives introduced into the injection stream must meet all Utah Rules for Public Drinking Water Systems found in UAC R309-525-11.5.
- vii. The permittee shall notify the Director in writing within 10 days of any changes in the injection fluid or process additives that may alter the quality or chemical composition of the injection fluid.
- viii. Upon notification of a spill or dumping incident which may adversely affect the quality of the injectate or any finding by the permittee or the Executive Secretary that the injection fluid has exceeded Federal or State MCLs, State Ground Water Quality Standards, TDS of 500 mg/l, or may otherwise adversely affect the health of persons, the permittee

shall stop injection immediately at all affected or potentially affected wells. Injection shall not recommence until approval has been received by the Director.

- ix. Well pumps and wellheads shall be inside a locked, brick pump building.

5. Injection Volume Limitation

Injection volume is limited by the Ground Water Recharge Permit issued by the Utah Division of Water Rights. No additional restrictions on the injection volume are imposed by this permit.

6. Injection Pressure Limitation

Injection pressure shall be limited to prevent flowing artesian conditions in any nearby extraction or monitoring wells.

E. MONITORING AND RECORDING REQUIREMENTS

(R317-7-10.3(B), 40CFR144.54, and 40CFR146.34)

1. Class V ASR Injection Well Monitoring and Recording Standards

Monitoring and recording requirements for UIC permits are set forth in 40CFR144.54 details of which are included in the following permit conditions.

2. Monitoring, Recording, and Reporting Plan

The approved and enforceable Monitoring, Recording and Reporting Plan that meets all the monitoring and recording requirements of this section is included as Attachment D of this permit.

3. Monitoring Equipment and Methods

All monitoring equipment shall be properly selected, installed, used, and maintained according to the manufacturer's specifications so as to yield data which are representative of the monitored activity. All monitoring methods shall be properly selected and implemented at appropriate intervals and frequency so as to yield data which are representative of the monitored activity. Documentation verifying, if applicable, the proper selection, installation, use, and maintenance of monitoring equipment and the proper implementation of monitoring methods shall be made available to the Director upon request.

4. Injectate Characterization

The permittee shall monitor the nature of injected and recovered fluids according to the monitoring parameter list and schedule in Attachment B of this permit. The monitoring parameter list and schedule is meant to coincide with those required for the Utah Division of Drinking Water with more frequent, yearly rather than 5-year, monitoring of the well water for TTHMs and HAA5s.

Field parameters shall be determined immediately prior to collection of all water quality samples and shall include: pH, temperature, and specific conductivity.

5. Injection Pressure, Injection Rate, and Injection Volume

The permittee shall monitor the injection pressure and either the injection rate or injection volume semi-monthly, or metering and daily recording of injected and produced fluid volumes as appropriate.

6. Injection Zone Fluid Level

The permittee shall monitor the hydrostatic head will be determined in each injection well immediately before the commencement of each injection event, immediately after each injection event, and monthly throughout the year even during periods of no injection.

7. Additional Monitoring and Recording Requirements

None.

F. REPORTING REQUIREMENTS
(R317-7-10.4(B) and 40 CFR 144.54)

1. Quarterly Monitoring Reports

a) Schedule for Submitting Quarterly Monitoring Report

<u>Quarter</u>		<u>Report Due On:</u>
1 st Quarter	Jan 1 – Mar 31	Apr 15
2 nd Quarter	Apr 1 – Jun 30	July 15
3 rd Quarter	Jul 1 – Sep 30	Oct 15
4 th Quarter	Oct 1 – Dec 31	Jan 15

b) Content of Quarterly Monitoring Reports

Monitoring data for the following shall be included in the quarterly monitoring reports:

- (1) Injectate Characterization, according to schedule in Appendix B;
- (2) Injection Pressure, Rate, Volume
- (3) Injection Zone Fluid Level of last measurement event.
- (4) Noncompliance Not Previously Reported – Such reports shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

2. Endangering Noncompliance Reporting

The permittee shall report to the Director any noncompliance that may endanger health or the environment, as follows:

- a) **Twenty-four Hour Reporting**
Endangering noncompliance information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. Such reports shall include, but not be limited to, the following information:
- (1) Any monitoring or other information that indicates any contaminant may cause an endangerment to a USDW, or
 - (2) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs.
- b) **Five-day Reporting**
A written submission shall be provided within five days of the time the permittee becomes aware of the circumstances of the endangering noncompliance. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
3. **Planned Changes**
The permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the UIC-permitted facility. Notification of planned changes on the part of the permittee, does not stay any permit condition.
4. **Anticipated Noncompliance**
The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. Notification of anticipated noncompliance on the part of the permittee, does not stay any permit condition.
5. **Permit Transfers**
This permit is not transferable to any person except in accordance with Part II (D)(6)(d) of this permit. The current permittee shall notify the Director at least 30 days in advance of the proposed transfer date. Notification shall comply with the requirements in Part II(D)(6)(d) of this permit.
6. **Compliance Schedule Reporting**
Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule specified in Part III B of this permit shall be submitted no later than 30 days following each schedule date.
7. **Electronic Reporting**
In addition to submittal of the hard copy data, the permittee shall submit the required monitoring data in the electronic format specified by the Director.

G. PLUGGING AND ABANDONMENT REQUIREMENTS

In the event any Brigham City Corporation Culinary Water Well is required to be plugged and abandoned, it shall be done so in such a manner as to be protective of any USDW and according to the requirements of the Utah Divisions of Water Rights and Drinking Water.

H. FINANCIAL RESPONSIBILITY

Brigham City Corporation is not required to maintain financial responsibility and resources to plug and abandon the permitted injection well facilities beyond that which is required by the Utah Divisions of Water Rights and Drinking Water.

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Attachment A

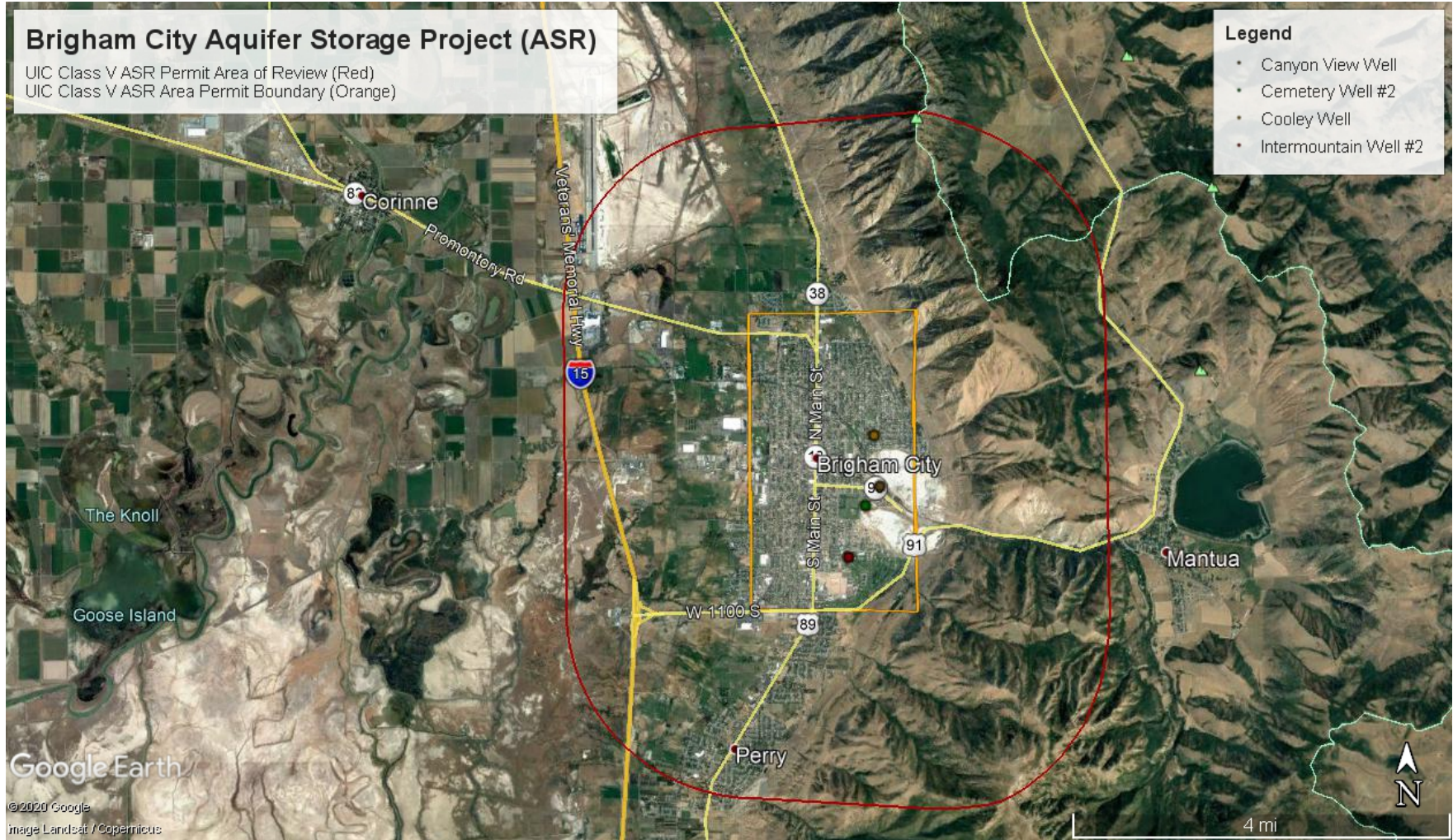
General Location Map Brigham City Class V ASR Permit
Box Elder County

Brigham City Aquifer Storage Project (ASR)

UIC Class V ASR Permit Area of Review (Red)
UIC Class V ASR Area Permit Boundary (Orange)

Legend

- Canyon View Well
- Cemetery Well #2
- Cooley Well
- Intermountain Well #2



Google Earth

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Image Landsat / Copernicus

Attachment B

Table 1 – Monitoring Parameters and Monitoring Schedule

TABLE I - BRIGHAM CITY CORPORATION MONITORING PARAMETERS AND MONITORING SCHEDULE Jan 2016

ANALYTE	CAS Number	UNITS	MCL (mg/L)	Secondary Drinking Water Regulations (mg/L)	5 Year Cycle per Source	Annually per Injection Source	<u>Annually New Sources</u> (11)
<i>Inorganics:</i>							
Aluminum	7429-90-5	mg/L		0.05 to 0.2	X		X
Antimony	7440-36-0	mg/L	0.006		X		X
Arsenic	7440-38-2	mg/L	0.010		X	X	X
Barium	7440-39-3	mg/L	2		X		X
Beryllium	7440-41-7	mg/L	0.004		X		X
<u>Bromide (1)</u>	24959-67-9	mg/L			X	X	X
Cadmium	7440-43-9	mg/L	0.005		X		X
Chloride	7647-14-5	mg/L		250	X		X
Chromium (Total)	7440-47-3	mg/L	0.1		X		X
Copper	7440-50-8	mg/L		1.0	X		X
Cyanide (as free Cyanide)	143-33-9	mg/L	0.2		X		X
Fluoride	7681-49-4	mg/L	4	2	X	X	X
Iron	7439-89-6	mg/L		0.3	X		X
Manganese	7439-96-5	mg/L		0.05	X		X
Mercury (inorganic)	7487-94-7	mg/L	0.002		X		X
Selenium	7782-49-2	mg/L	0.05		X		X
Silver	7440-22-4	mg/L		0.1	X		X
<u>Sulfate (2)</u>	7757-82-6	mg/L	1,000	250	X	X	X
Thallium	7440-28-0	mg/L	0.002		X		X
<u>Total Dissolved Solids (3)</u>		mg/L		500	X	X	X
Zinc	7440-66-6	mg/L		5	X		X

TABLE I - BRIGHAM CITY CORPORATION MONITORING PARAMETERS AND MONITORING SCHEDULE Jan 2016

ANALYTE	CAS Number	UNITS	MCL (mg/L)	Secondary Drinking Water Regulations (mg/L)	5 Year Cycle per Source	Annually per Injection Source	<u>Annually New Sources (11)</u>
<i>Nitrate/Nitrite:</i>							
Nitrate (as Nitrogen)	14797-55-8	mg/L	10		X	X	X
Nitrite (as Nitrogen)	14797-65-0	mg/L	1		X	X	X
Total Nitrate and Nitrite (as N)		mg/L	10		X	X	X
<i>Asbestos:</i>							
Asbestos	1332-21-4	million fibers/L longer than 10 microns	7		X		X
<i>Volatile Organic Contaminants (VOC):</i>							
		Method 524.2 VOC					
Benzene	71-43-2	mg/L	0.005		X		X
Carbon tetrachloride	56-23-5	mg/L	0.005		X		X
Dichlorobenzene o-	95-50-1	mg/L	0.6		X		X
Dichlorobenzene p-	106-46-7	mg/L	0.075		X		X
Dichloroethane (1,2-)	107-06-2	mg/L	0.005		X		X
Dichloroethylene (1,1-)	<u>75-35-4</u>	mg/L	0.007		X		X
Dichloroethylene (cis-1,2-)	156-59-2	mg/L	0.07		X		X
Dichloroethylene (trans-1,2-)	156-60-5	mg/L	0.1		X		X
Dichloromethane	75-09-2	mg/L	0.005		X		X

TABLE I - BRIGHAM CITY CORPORATION MONITORING PARAMETERS AND MONITORING SCHEDULE Jan 2016

ANALYTE	CAS Number	UNITS	MCL (mg/L)	Secondary Drinking Water Regulations (mg/L)	5 Year Cycle per Source	Annually per Injection Source	Annually New Sources (11)
Dichloropropane (1,2-)	78-87-5	mg/L	0.005		X		X
Ethylbenzene	100-41-4	mg/L	0.7		X		X
Monochlorobenzene	108-90-7	mg/L	0.1		X		X
Styrene	100-42-5	mg/L	0.1		X		X
Tetrachloroethylene	127-18-4	mg/L	0.005		X		X
Toluene	108-88-3	mg/L	1		X		X
Trichlorobenzene (1,2,4-)	120-82-1	mg/L	0.07		X		X
Trichloroethane (1,1,1-)	71-55-6	mg/L	0.2		X		X
Trichloroethane (1,1,2-)	79-00-5	mg/L	0.005		X		X
Trichloroethylene	79-01-6	mg/L	0.005		X		X
Vinyl chloride	75-01-4	mg/L	0.002		X		X
Xylenes	1330-20-7	mg/L	10		X		X
<i>Pesticides:</i>	Method 525.2 SVOC Pesticides and Semi-Volatile Organic Compounds						
2,4 - D (2,4 - dichlorophenoxyacetic acid)	94-75-7	mg/L	0.07		X		X
2,4,5-TP (Silvex)	93-72-1	mg/L	0.05		X		X
Alachlor	15972-60-8	mg/L	0.002		X		X
Aldicarb	116-06-3	mg/L	0.003		X		X
Aldicarb sulfone	1646-88-4	mg/L	0.003		X		X
Aldicarb sulfoxide	1646-87-3	mg/L	0.004		X		X

TABLE I - BRIGHAM CITY CORPORATION MONITORING PARAMETERS AND MONITORING SCHEDULE Jan 2016

ANALYTE	CAS Number	UNITS	MCL (mg/L)	Secondary Drinking Water Regulations (mg/L)	5 Year Cycle per Source	Annually per Injection Source	Annually New Sources (11)
Atrazine	1912-24-9	mg/L	0.003		X		X
Benzo(a)pyrene (PAH)	50-32-8	mg/L	0.0002		X		X
Carbofuran	1563-66-2	mg/L	0.04		X		X
Chlordane	57-74-9	mg/L	0.002		X		X
Dalapon (sodium salt)	75-99-0	mg/L	0.2		X		X
Di(2-ethylhexyl) adipate	103-23-1	mg/L	0.4		X		X
Di(2-ethylhexyl) phthalate	117-81-7	mg/L	0.006		X		X
Dinoseb	88-85-7	mg/L	0.007		X		X
Endrin	72-20-8	mg/L	0.002		X		X
Heptachlor	76-44-8	mg/L	0.0004		X		X
Heptachlor epoxide	1024-57-3	mg/L	0.0002		X		X
Hexachlorobenzene	118-74-1	mg/L	0.001		X		X
Hexachlorocyclopentadiene	77-47-4	mg/L	0.05		X		X
Lindane	58-89-9	mg/L	0.0002		X		X
Methoxychlor	72-43-5	mg/L	0.04		X		X
Oxamyl (Vydate)	23135-22-0	mg/L	0.2		X		X
Pentachlorophenol	87-86-5	mg/L	0.001		X		X
Picloram	1918-02-1	mg/L	0.5		X		X
Polychlorinated biphenyls (PCBs)	1336-36-3	mg/L	0.0005		X		X
Simazine	122-34-9	mg/L	0.004		X		X
Toxaphene	8001-35-2	mg/L	0.003		X		X

TABLE I - BRIGHAM CITY CORPORATION MONITORING PARAMETERS AND MONITORING SCHEDULE Jan 2016

ANALYTE	CAS Number	UNITS	MCL (mg/L)	Secondary Drinking Water Regulations (mg/L)	5 Year Cycle per Source	Annually per Injection Source	Annually New Sources (11)
<i>Radionuclides:</i>							
Combined Radium 226 & 228	7440-14-4	pCi/L	5		X		X
Gross alpha particle activity (including Radium 226 but excluding Radon and Uranium)		pCi/L	15		X		X
<u>Gross beta particle and photon emitters (5)</u>		mrem/yr	4		X		X
Tritium (only if gross beta exceeds 50 pCi/L)		pCi/L	20,000		X		X
Strontium-90 (only if gross beta exceeds 50 pCi/L)		pCi/L	8		X		X
Radon	10043-92-2	pCi/L	300		X		X
Uranium	7440-61-1	mg/L	0.03		X		X
<i>Total Trihalomethanes (TTHMs): (6)</i>		Method 524.2-THM	0.08		X	X	X
Chloroform	67-66-3	mg/L			X	X	X
Bromodichloromethane	75-27-4	mg/L			X	X	X
Dibromochloromethane	124-48-1	mg/L			X	X	X
Bromoform	75-25-2	mg/L			X	X	X
Trihalomethane Formation Potential (THMFP) - Standard Methods 5710 B			X	X	X		

TABLE I - BRIGHAM CITY CORPORATION MONITORING PARAMETERS AND MONITORING SCHEDULE Jan 2016

<u>Total Trihalomethanes (TTHMs): (6)</u>		Method 524.2-THM	0.08		X	X	X
Chloroform	67-66-3	mg/L			X	X	X
Bromodichloromethane	75-27-4	mg/L			X	X	X
Dibromochloromethane	124-48-1	mg/L			X	X	X
Bromoform	75-25-2	mg/L			X	X	X
Trihalomethane Formation Potential (THMFP) - Standard Methods 5710 B			X	X	X		
<u>Haloacetic acids (HAA5): (7)</u>		Method 6251 B (HAA)	0.06		X	X	X
<u>Trihaloacetic acids (THAAs)</u>							
Trichloroacetic acid (TCAA)	76-03-9	mg/L			X	X	X
Bromodichloroacetic acid (DBCAA)							
Dibromochloroacetic acid (DBCAA)							
Tribromoacetic acid (TBAA)							
<u>Dihaloacetic acids (DHAAs)</u>							
Dichloroacetic acid (DCAA)	76-43-6	mg/L			X	X	X
Bromochloroacetic acid (BCAA)							
Dibromoacetic acid (DBAA)	631-64-1	mg/L			X	X	X
<u>Monohaloacetic acids (MHAAs)</u>							
Monochloroacetic acid (MCAA)	79-11-8	mg/L			X	X	X
Monobromoacetic acid (MBAA)	79-08-3	mg/L			X	X	X
Haloacetic acids Formation Potential (HAAFP) - Standard Methods 5710 D					X	X	X

TABLE I - BRIGHAM CITY CORPORATION MONITORING PARAMETERS AND MONITORING SCHEDULE Jan 2016

<u>Disinfectants and Their By-Products: (8)</u>							
Chloramine (only if used as a disinfectant)	10599-90-3	mg/L	4		X	X	X
Chlorine	7782-50-5	mg/L	4		X	X	X
Chlorine Dioxide (only if used as a disinfectant)	10049-04-4	mg/L	0.8		X	X	X
Chlorite (only if Chlorine Dioxide is used as a disinfectant)	7758-19-2	mg/L	1		X	X	X
<u>Turbidity:</u>		NTU	<u>(9)</u>		X	X	X
<u>Total Coliform:</u>			<u>(10)</u>		X	X	X
<u>NOTES:</u>							
(1) DWQ has added bromide to the analytical parameter list with an analytical method reporting limit not to exceed 0.02 mg/L. If the bromide concentration exceeds 0.04 mg/L, BCC will be required to analyze for bromate concentrations.							
(2) According to Utah DDW, if Sulfate is greater than 500 mg/l the water management must demonstrate that no better water is available.							
(3) DDW has TDS limits of 2,000 mg/l but because of the Ground Water/UIC Rules, injection of water with TDS concentrations greater than 500 mg/l is not permitted.							
(5) See R309-200-5(4) (d) for actual MCL of 4 millirem/year. Use 50 pCi/L as a screening level for further analysis.							
(6) According to Utah DDW, the maximum contaminant level for community water systems serving a population of 10,000 or more and utilizing chlorine as a disinfectant is 80 µg/l. as system-wide running annual average.							
(7) HAA5 includes MCAA, DCAA, TCAA, MBAA, and DBAA							
(8) The permit limits for disinfectants are maximum residual disinfectant levels (MRDLs) and not MCLs							
(9) The turbidity limit for surface water sources or ground water sources under the direct influence of surface water is 0.3 NTU in at least 95% of the samples per month. The turbidity limit for slow sand filtration and diatomaceous earth filtration is 1.0 NTU in at least 95% of the samples per month. The turbidity level for ground water sources not under the direct influence of surface water is 5.0 NTU.							
10) For a system which collects less than 40 samples per month, no more than one sample per month may be total coliform-positive. For a system which collects 40 or more samples per month, no more than 5.0 % of the samples collected during a month may be total coliform-positive. Any fecal coliform-positive or Escherichia coliform (E. coli)-positive repeat sample or any total coliform-positive repeat sample following a fecal coliform-positive or E.coli-positive routine sample constitutes an acute MCL violation for total coliforms. This applies to samples taken throughout the distribution system. For the injection wells, no more than 5% of the monthly samples collected of the plant effluent may be total coliform-positive.							
(11) BCC will analyze the any new injection source annually for the permit cycle.							

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Attachment C

Standard Operating Procedures version 2021

Cooley Well

Intermountain Well #2

Cemetery Well #2

Canyon View Well

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ATTACHMENT C

STANDARD OPERATIONAL PROCEDURES (SOP) for CITY WELLS INJECTION – Canyon View Well

SOP-1

Initial Well Flush to Waste

1. Obtain initial measurements including static water level and flow meter totalizer readings (both magnetic water flow meter and turbine water flow meter).
2. Configure valve system to pump Canyon View Well #2 to waste. Referring to the Canyon View Well #2 Well Piping Layout:
 - a. Close Gate Valve #1.
 - b. Check Pump Control Valve to make sure it is open.
 - c. Set pressure control on Pump Control Valve so that the valve stays open until it is time to stop flushing to waste.
 - d. Check Gate Valve #2 to make sure it is open (this valve is normally left open).
3. Pump Canyon View Well #2 to waste for 1 hour to remove any iron scale or precipitate that has developed in the well piping.

SOP-2

Injection Phase – Startup

1. Obtain measurements of water levels, supply line pressure and flow meter totalizers for Canyon View Well #2. Record the static water level before startup for calculation of the maximum drawup for each injection cycle (see Item 3 SOP 3).
2. Flush injection water supply line to waste with the following steps:
 - a. Make sure that the well pump is not running.
 - b. Supply line should be flushed at 400 - 700 gpm to clear out debris and iron scale in the pipelines.
 - c. Check the Injection Throttling Valve to make sure it is closed.
 - d. Open Gate Valve #1 and flush for at least 1 hour. Water should clear with no detectable debris, sand or iron scale.
 - e. Reset pressure control on Pressure Relief Valve to normal setting.
3. Prepare to inject with the following steps:
 - a. Close Gate Valve #2.
 - b. Check the Injection Throttling Valve to make sure it is closed.
 - c. Check the pressure controls on the Pressure Sustaining/Check Valve to make sure that it is set for normal check valve operation.
 - d. Open the Air/Vacuum Valve on the injection pipeline.
 - e. Open Gate Valve #1.
4. Follow these steps to gradually reach the targeted injection flow rate.
 - a. Slowly divert injection water into well by opening the Injection Throttling Valve until the injection pipeline transitions from vacuum to pressure conditions.
 - b. Close the Air/Vacuum Valve on the injection pipeline.
 - c. Continue slowly opening Injection Throttling Valve until flow rate reaches the target flow rate. Take care not to divert water too rapidly into the well. The process of

diverting injection water into the well may take 15 to 30 minutes to reach the target injection flow rate.

- d. Back pressure at the well head should be from 5 - 30 psi.
5. Measure and record injection flow rate, well head back pressure, pressure upstream of Injection Throttling Valve, and water levels in the well.

SOP-3

Injection Phase – Monitoring

1. Monitor the following parameters daily during injection:
 - a. Injection rate
 - b. Well head back pressure in injection pipeline
 - c. Pressure upstream of Throttling Valve
 - d. Water level
 - e. Water color, turbidity, smell and taste of injection water
2. Evaluate field water quality data and confirm that there are no unusual readings (greater than 10% variation from previous or subsequent readings). Remeasure field parameters immediately if unusual readings are found.
3. Calculate the maximum allowable drawup water level for each injection cycle by subtracting the maximum drawup value (See Line #7 in Table 1 on Page 1) from the static water level measured at the beginning of the injection cycle. If the water level in the Canyon View Well #2 rises above the maximum drawup value, it may indicate possible plugging. If this occurs, contact the supervisor and consider shutting down injection and redeveloping the well (see SOP-4).

Max Drawup = SWL (Item 1, SOP2 or Item 4, SOP4) - Max Drawup Value (Line 7, Table 1)
Water Level

4. Redevelop well (see SOP-4) at the end of the injection cycle to the clean well prior to storage and recovery phases.

SOP-4

Injection Phase - Well Re-Development

1. Configure valves to pump Canyon View Well #2 to waste.
 - a. Close Injection Throttling Valve.
 - b. Obtain flow meter totalizer readings (both magnetic water flow meter and turbine water flow meter)
 - c. Close Gate Valve #1.
 - d. Open Gate Valve #2.
 - e. Check Pump Control Valve to make sure it is open.
 - f. Set pressure control on Pump Control Valve so that the valve stays open until it is time to stop flushing to waste.
 - g. Turn on the deep well pumping system.
2. Re-Develop Well as follows:
 - a. Pump well to waste for 15 minutes minimum.
 - b. Measure and record water levels during pumping.
 - c. Surge the well by shutting it off, waiting for all water to finish running back down
 - d. the well (5 min. minimum) and then turning on the pump again.

- e. Pump the well to waste for 2 hours.
 - f. Note the pumped water color, turbidity, smell, and taste and record observations
 - g. every 15 minutes.
3. Calculate specific capacity (S_c).

$$S_c = \frac{\text{Average pumping rate (gpm) over 2 hour period}}{\text{Drawdown (ft) after 2 hour period}}$$

If $S_c >$ Original Specific Capacity During Test Pump (Table 1 Line 5), redevelopment was successful and proceed to Injection Startup (SOP-2).

If $S_c <$ Original Specific Capacity During Test Pump (Table 1 Line 5), continue redevelopment (SOP-4).

4. Obtain a new Static Water Level for calculation of new maximum drawup water level (See Item 3 in SOP 3)
 - a. Allow well to recover for 45 minutes to 1 hour minimum.
 - b. Record new static water level.
 - c. Recalculate maximum allowable drawup water level (Item 3 SOP 3) for next infection cycle.

SOP-5

Recovery Phase – Startup

1. Configure valves to pump to waste.
 - a. Close Injection Throttling Valve.
 - b. Close Gate Valve #1.
 - c. Open Gate Valve #2.
 - d. Check Pump Control Valve to make sure it is open.
 - e. Set pressure control on Pump Control Valve so that the valve stays open until it is time to stop flushing to waste.
2. Obtain baseline measurements including static water levels and flow meter totalizer readings (magmeter and turbine flow meter). Obtain/prepare all equipment for pump testing.
3. Conduct a 24-hour constant rate pump test to document well performance at the start of recovery. Procedure is as follows:
 - a. Turn pump on. From when the pump first comes on to 10 minutes, collect water level and flow rate readings every minute.
 - b. From 11 minutes to 1 hour collect water level and flow rate readings every 5 minutes.
 - c. From 1 hour to 2 hours collect water level and flow rate readings every 20 minutes.
 - d. From 2 hours to 24 hours collect water level and flow rate readings every hour
 - e. Flow rate readings shall be measured accurately and recorded at the same time interval as drawdown data.

SOP-6

Recovery Phase – Monitoring

1. Continue pumping at sustained production flow rate.
2. Discontinue recovery pumping when 110% of the injection volume is reached.

3. Shutdown pump and allow well to recover for at least 48 hours.
4. Conduct a 24-hour constant rate pump test to document well performance at the end of recovery. Procedure is as follows:
 - a. Turn pump on. From when the pump first comes on to 10 minutes, collect water level and flow rate readings every minute.
 - b. From 11 minutes to 1 hour collect water level and flow rate readings every 5 minutes.
 - c. From 1 hour to 2 hours collect water level and flow rate readings every 20 minutes.
 - d. From 2 hours to 24 hours collect water level and flow rate readings every hour
 - e. Flow rate readings shall be measured accurately and recorded at the same time interval as drawdown data.

Attachment D

Monitoring, Recording, and Reporting Plan



ATTACHMENT D

Monitoring, Recording and Reporting Plan for CITY WELLS INJECTION – Canyon View Well

The purpose of this document is to detail the monitoring, recording, and reporting measures that Brigham City will take to ensure compliance with the injection well permit and all relevant water quality standards. This plan details the sampling, data management, and reporting methods used to meet compliance with Parts III.F and III.G of the permit.

Monitoring Plan

Injectate Sampling

Prior to the initialization of injection operations, samples of the injectate water will be collected at the nearest fire hydrant or sampling tap. Laboratory tests will be conducted to ensure that injectate water meets established quality standards. Samples will be collected and sent for analysis according to the timeline set forth within the permit. Samples shall be collected at the beginning of the injection event. Data submitted to meet compliance measures with the Utah Division of Drinking Water will serve to meet the groundwater monitoring requirements.

Sample Analysis

Attachment G of the permit provides a list of parameters for which each sample must be tested. This list is provided as a table which also lists the method and testing entity which must conduct the relevant tests. Samples will be collected according to the method-specific requirements of each parameter, including flushing, preservation, chain-of-custody, and transportation protocols. For the parameters where field analysis is the prescribed analysis method, testing will be performed by trained personnel with calibrated equipment. An example of a sample analysis report is attached to this document for reference.

Recording

The information detailed with each analysis shall include the date, time, and location of each sample collected; the name of the sampler; the date, time, and location of each analysis performed; the analysis method and reporting limit for each parameter; and the sample result. Electronic copies of the analysis report and field logs will be kept and maintained by Brigham City indefinitely.

During injection, the injection rate, injectate pressure, groundwater level, and water characteristics will be monitored daily. Using these logs of static ground water levels and the calculated injection volume, maximum drawup will be calculated and adhered to.

Reporting

All of the above data will be reported to the DWQ on a quarterly basis. Due to the long turnaround time of full laboratory analyses, reports will be submitted approximately 75 days from the end of each calendar quarter if injection occurred during that quarter. If no injection occurred during the previous quarter, a letter stating such will be sent to the DWQ. Each report will include a characterization of the injectate, injection pressure, rate and volume of injection events, injection zone water levels, all associated sample collection data, and all applicable sample results.



11/3/2020

Work Order: 20J1239
Project: ASR

Brigham City Corporation
Attn: Rene Cedillo
P.O. Box 1005
Brigham City, UT 84302

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.



Approved By:

Dave Gayer, Laboratory Director



Certificate of Analysis

Lab Sample No.: 20J1239-01

Name: Brigham City Corporation	Sample Date: 10/21/2020 11:02 AM
Sample Site: Cemetery 2	Receipt Date: 10/21/2020 2:00 PM
Comments:	Sampler: Thomas Braithwaite
Sample Matrix: Water	Project: ASR
PO Number:	System No.: UTAH02004
Source Code:	Sample Point:
	Report to State: N

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Inorganic								
Bromide	ND		0.01	mg/L	EPA 300.0	10/26/2020	10/26/2020	
Chlorine Dioxide	ND		0.50	mg/L	SM 4500 ClO2-D	10/27/2020	10/27/2020	SL-EFI, SPH
Chlorine Residual, Total	0.53	4	0.10	mg/L	SM 4500 Cl-G	10/21/2020 17:30	10/21/2020 17:30	SPH
Chlorite	ND	1	0.01	mg/L	EPA 300.0	10/27/2020	10/27/2020	
Fluoride	0.67	4	0.10	mg/L	EPA 300.0	10/21/2020	10/21/2020	
Nitrate as N	0.7	10	0.1	mg/L	EPA 300.0	10/21/2020 22:29	10/21/2020 22:29	
Nitrite as N	ND	1	0.1	mg/L	EPA 300.0	10/21/2020 22:29	10/21/2020 22:29	
Sulfate	10.6	250	1.0	mg/L	EPA 300.0	10/21/2020	10/21/2020	
Total Dissolved Solids (TDS)	256	1000	20	mg/L	SM 2540 C	10/26/2020	10/26/2020	
Turbidity	0.06	5	0.05	NTU	EPA 180.1	10/22/2020 15:31	10/22/2020 15:42	
Metals								
Arsenic, Total	0.0008	0.01	0.0005	mg/L	EPA 200.8	10/22/2020	10/22/2020	
Miscellaneous Tests								
Monochloramine	ND		0.10	mg/L	SM 4500 Cl-F	10/22/2020 16:52	10/22/2020 16:52	SL-EFI
Dichloramine	ND		0.10	mg/L	SM 4500 Cl-F	10/22/2020 16:52	10/22/2020 16:52	SL-EFI
Nitrogen Trichloride	ND		0.20	mg/L	SM 4500 Cl-F	10/22/2020 16:52	10/22/2020 16:52	SL-EFI
Regulated Haloacetic Acids (HAAs)								
Dibromoacetic Acid	ND		1.0	ug/L	EPA 552.2	10/23/2020	10/24/2020	
Dichloroacetic Acid	ND		1.0	ug/L	EPA 552.2	10/23/2020	10/24/2020	
Monobromoacetic Acid	ND		1.0	ug/L	EPA 552.2	10/23/2020	10/24/2020	
Monochloroacetic Acid	ND		2.0	ug/L	EPA 552.2	10/23/2020	10/24/2020	
Trichloroacetic Acid	ND		1.0	ug/L	EPA 552.2	10/23/2020	10/24/2020	
Total Haloacetic Acids	ND	60	2.0	ug/L	EPA 552.2	10/23/2020	10/24/2020	
Haloacetic Acid Potential (HAAs)								
Dibromoacetic Acid FP	ND		1.0	ug/L	EPA 552.2	11/02/2020	11/02/2020	
Dichloroacetic Acid FP	143		10.0	ug/L	EPA 552.2	11/02/2020	11/02/2020	
Monobromoacetic Acid FP	ND		1.0	ug/L	EPA 552.2	11/02/2020	11/02/2020	
Monochloroacetic Acid FP	ND		2.0	ug/L	EPA 552.2	11/02/2020	11/02/2020	
Trichloroacetic Acid FP	551		10.0	ug/L	EPA 552.2	11/02/2020	11/02/2020	
Total HAA Formation Potential	694		20.0	ug/L	EPA 552.2	11/02/2020	11/02/2020	
Trihalomethanes (THMs)								
Bromodichloromethane	ND		0.5	ug/L	EPA 524.2	10/22/2020	10/23/2020	
Bromoform	ND		0.5	ug/L	EPA 524.2	10/22/2020	10/23/2020	
Chloroform	ND		0.5	ug/L	EPA 524.2	10/22/2020	10/23/2020	
Dibromochloromethane	ND		0.5	ug/L	EPA 524.2	10/22/2020	10/23/2020	



Certificate of Analysis

Lab Sample No.: 20J1239-01

Name: Brigham City Corporation	Sample Date: 10/21/2020 11:02 AM
Sample Site: Cemetery 2	Receipt Date: 10/21/2020 2:00 PM
Comments:	Sampler: Thomas Braithwaite
Sample Matrix: Water	Project: ASR
PO Number:	System No.: UTAH02004
Source Code:	Sample Point:
	Report to State: N

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Trihalomethanes (THMs) (cont.)								
Total Trihalomethanes	ND	80	0.5	ug/L	EPA 524.2	10/22/2020	10/23/2020	



Certificate of Analysis

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.

1 mg/L = one milligram per liter or 1 mg/Kg = one milligram per kilogram = 1 part per million.

1 ug/L = one microgram per liter or 1 ug/Kg = one microgram per kilogram = 1 part per billion.

1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

SL-EFI = Analysis performed by Eurofins, 110 South Hill Street, South Bend, IN 46617

SPH = Sample submitted past method specified holding time.

Data Comparisons

Values reported in **RED** exceed Primary Drinking Water standards.

Values reported in **BLUE** exceed Secondary Drinking Water standards.

BLANK values in the MCL column indicate no standard.

DRINKING WATER SAMPLES ONLY

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: Brigham City Corporation
ADDRESS: P.O. Box 1005
CITY/STATE/ZIP: Brigham City, UT 84302
PHONE #: 435-723-3146 **FAX:** _____
CONTACT: Rene Cedillo **PROJECT:** ASR
EMAIL: rcedillo@bcutah.org

BILLING ADDRESS: _____
BILLING CITY/STATE/ZIP: _____
PURCHASE ORDER: _____



TURNAROUND TIME REQUIRED*: _____
 * Expedited turnaround subject to additional charge

State System Number
02004

Send to State
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Please fill in all blue highlighted areas. Thank you!

TESTS REQUESTED														Bacteria		
Arsenic	Anions: Br, F, NO3, NO2, SO4	Total Dissolved Solids	Turbidity	Chlorine Dioxide, Chloramine	Chlorine Residual	Chlorite	THMs	HAAs	HAA Formation Potential	Total Coliform + E. coli (Present/Absent)	Total Coliform + E. coli (Enumerated)	HPC (Plate Count)	R = Routine I = Investigative TR = Trigger Source RP = Repeat			
													REPEAT OR = Original Location UP = Upstream DN = Downstream			

Lab Use Only	CLIENT SAMPLE INFORMATION																						
	LOCATION	DATE	TIME	FACILITY ID (source code)	POINT CODE (DBP)	Field: Residual Chlorine		Arsenic	Anions: Br, F, NO3, NO2, SO4	Total Dissolved Solids	Turbidity	Chlorine Dioxide, Chloramine	Chlorine Residual	Chlorite	THMs	HAAs	HAA Formation Potential	Total Coliform + E. coli (Present/Absent)	Total Coliform + E. coli (Enumerated)	HPC (Plate Count)	Bacteria	LAB FAIL Ref #	
20J1239																							
-01	1. Cemetery 2	10-21-2010	11:02	N/A	N/A	.53	X	X	X	X	X	X	X	X	X	X	X						
	2.																						
	3.																						
	4.																						
	5.																						
	6.																						
	7.																						
	8.																						
	9.																						
	10.																						

Sampled by: [print] <u>Thomas Brantman, Jr</u>	Sampled by: [signature] <u>[Signature]</u>	ON ICE	NOT ON ICE	Temp (C°): <u>9.4</u>
Special Instructions:		Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.		
Relinquished by: [signature] <u>[Signature]</u>	Date/Time <u>10-21-2010 11:23</u>	Received by: [signature] <u>[Signature]</u>	Date/Time <u>10/21/20 11:23</u>	
Relinquished by: [signature] <u>[Signature]</u>	Date/Time <u>10/21/20 1400</u>	Received by: [signature] <u>[Signature]</u>	Date/Time <u>10-21-20 1400</u>	
Relinquished by: [signature] _____	Date/Time _____	Received by: [signature] _____	Date/Time _____	

CHEMTECH-FORD
 9632 South 500 West
 Sandy, UT 84070

801.262.7299 PHONE
 866.792.0093 FAX
www.ChemtechFord.com

Payment Terms are net 30 days OAC. 1.5% interest charge per month (18% per annum).
 Client agrees to pay collection costs and attorney's fees.

Work Order # 20J1239

CHEMTECH FORD LABORATORIES

Sample Receipt



CHEMTECH-FORD
LABORATORIES

Delivery Method:

- UPS USPS
 FedEx Chemtech Courier
 Walk-in Customer Courier

Receiving Temperature 9.4 °C

Sample #	Container	Chemtech Lot # or Preservative	Number of Subsamples	Preserved by Client/Third Party	Preserved in Receiving/Laboratory	Filtered in Field by Client	Misc Volume (oz/mL)	Comments
-01	AQ (2) ^M	1081						
	H (3)	1089						
	V (2)	1079 1089 OK						
	G AG	1070				250ml	Amber	

Sample Condition
(check if yes)

Custody Seals
 Containers Intact
 COC can be matched to bottles
 Received on Ice
 Correct Containers(s)
 Sufficient Sample Volume
 Headspace Present (VOC)
 Temperature Blank
 Received within Holding Time

Plastic Containers

- A- Plastic Unpreserved
- B- Miscellaneous Plastic
- C- Cyanide Qt (NaOH)
- E- Coliform/Ecoli/HPC
- F- Sulfide Qt (Zn Acetate)
- L- Mercury 1631
- M- Metals Pint (HNO3)
- N- Nutrient Pint (H2SO4)
- R- Radiological (HNO3)
- S- Sludge Cups/Tubs
- Q- Plastic Bag

Glass Containers

- D- 625 (Na2S2O3)
- G- Glass Unpreserved
- H- HAAs (NH4Cl)
- J- 508/515/525 (Na2SO3)
- K- 515.3 Herbicides
- O- Oil & Grease (HCl)
- P- Phenols (H2SO4)
- T- TOC/TOX (H3PO4)
- U- 531 (MCAA, Na2S2O3)
- V- 524/THMs (Ascorbic Acid)
- W- 8260 VOC (1:1 HCl)
- X- Vial Unpreserved
- Y- 624/504 (Na2S2O3)
- Z- Miscellaneous Glass