

FINAL

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

UIC Permit Number: UTU-27-IP-88A335D

Millard County, Utah

Permit Issued to:

Leamington Town Corporation  
P.O. Box 38101  
Leamington, Utah 84638

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- [Attachment A](#) - General Location Map of the Leamington Town ASR Project, Millard County.
- [Attachment B](#) - Map of the UIC Area of Review including the Class V ASR Well
- [Attachment C](#) - Corrective Action Plan for Artificial Penetrations into Injection Zone within Area of Review
- [Attachment D](#) - Driller's Log for Leamington Community Water Well
- [Attachment E](#) - Injection Well Operating Plan and Procedures
- [Attachment F](#) - Monitoring, Recording, and Reporting Plan
- [Attachment G](#) - Monitoring Parameters and Schedule

## **PART I. AUTHORIZATION TO INJECT**

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

Leamington Town Corporation (Leamington)  
P.O. Box 38101  
Leamington, Utah 84638-0101

is hereby authorized to operate Leamington Culinary Water Well as a Class V Aquifer Storage and Recovery (ASR) wells in Millard County, Utah. A general location map is included as Attachment A.

Leamington intends to inject the excess water in its water storage tanks originating from the Leamington Town springs in Fool Creek Canyon. The spring water is treated by gas chlorination several miles above the point where it enters the storage tanks.

The Leamington Culinary Water Well is located in the SE/4 of the NE/4 of the SW/4 of Section 10, T 15 S, R4 W, SLB&M. A map showing the area of review including the proposed Class V ASR well is included as Attachment B.

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 Leamington Town ASR Project, Millard County
- Attachment B - Map of the UIC Area of Review including the Class V ASR Well
- Attachment C - Corrective Action Plan for Artificial Penetrations into Injection Zone within Area of Review
- Attachment D - Driller's Log for Leamington Community Water Well
- Attachment E - Injection Well Operating Plan and Procedures
- Attachment F - Monitoring, Recording, and Reporting Plan
- Attachment G - Monitoring Parameters and Schedule

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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 shall become effective **April 24, 2015**

This permit and the authorization to inject shall be issued for 10 years, unless terminated, and will expire on **April 24, 2025**.

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Walter L. Baker, P.E.  
Director  
Utah Division of Water Quality

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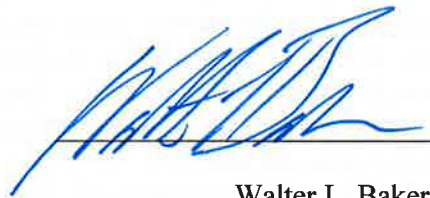
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Walter L. Baker, P.E.  
Director  
Utah Division of Water Quality



## **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)<sup>1</sup>

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

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<sup>1</sup> 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.

systems only when necessary to achieve compliance with the conditions of this 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 justifies 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.

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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



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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 10 years.

**B. COMPLIANCE SCHEDULE**

(40CFR144.53)

Leamington 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 (Operating Plan)

Leamington shall submit for the Director's approval an Operating Plan that meets the requirements of Part III (E) of this permit.

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)

Leamington shall submit for the Director's approval a Monitoring, Recording and Reporting Plan that meets the requirements of Part III (F) and (G) 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 Leamington wishes to construct a new ASR well, an application for a major permit modification will be required.

**D. REQUIREMENTS PRIOR TO INJECTION**

1. Demonstration of Adequate Monitoring Equipment

Prior to commencing injection, Leamington must demonstrate to the Director that adequate instrumentation and methods have been put in place to acquire the monitoring data of Part III (F) of this permit.

2. Director's Approval to Commence Injection

Prior to commencing injection, Leamington must receive written notice from the Director granting approval to commence injection.

## E. OPERATING REQUIREMENTS

### 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. Operating Plan

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

### 3. Injection Zone

Injection is explicitly limited to the Early Quaternary – Pliocene deltaic deposits of the Sevier River Lynndyl Bench.

### 4. Injection Pressure and Rate Limitation

Injection pressure and injection rate shall be limited to prevent flowing artesian conditions in any well within the 2 mile radius of review around the Leamington Town Culinary Water Well.

### 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.

The maximum annual injection volume is limited to between on half (1/2) the volume flowing through the Fool Creek-Leamington Pipeline and up to the 0.25 cubic feet per second (112 gallons per minute) water right Leamington has for the Upper and Lower Netties, Upper and Lower Narrows, and Black Willow Springs in Fool Creek Canyon.

### 6. Injection Fluid Limitations

- a) Fluid injected is limited to water originating from Upper and Lower Netties, Upper and Lower Narrows, and Black Willow Springs in Fool Creek Canyon which is treated by gas chlorination and stored in the water storage tanks near the well site.

- b) Prior to injection the water shall be treated by the gas chlorinator located approximately 2 miles above the water storage tanks.
- c) Injected water shall meet all Federal and State Maximum Contaminate Levels for Drinking Water (MCLs), and State Ground Water Quality Standards. The maximum total dissolved solids (TDS) of the injected water shall not exceed 500 milligrams per liter (mg/l).
- d) The permittee shall not inject any hazardous waste as defined by UAC R315-2-3 or 40 CFR 261 at any time during the operation of the facility.
- e) All additives introduced into the injection stream must meet all Utah Rules for Public Drinking Water Systems in UAC R309-525-11.
- f) 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.
- g) 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 Director that the injection fluid has exceeded Federal or State MCLs, State Ground Water Quality Standards, TDS of 500 mg/l, or may otherwise affect the health of persons, the permittee shall stop injection immediately. Injection shall not recommence until approval has been received by the Director.

7. Security

- a) The gas chlorinator facility shall be secured at all times.
- b) The water storage tanks shall be secured at all times
- c) The well head of the Leamington Town Culinary Water Well shall be secured at all times.

F. MONITORING AND RECORDING REQUIREMENTS  
(40CFR144.54)

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 F 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 and Recovered Fluid Characterization

Leamington shall monitor the nature of injected and recovered fluids according to the monitoring parameter list and schedule in Attachment G 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 3-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

Leamington 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 during periods of injection.

6. Injection Zone Fluid Level

Leamington shall monitor the fluid level in the injection zone semi-monthly.

G. REPORTING REQUIREMENTS

(40 CFR 144.54)

1. Quarterly Monitoring Reports

a) Schedule for Submitting Quarterly Monitoring Report

<u>Quarter</u>		<u>Report Due On:</u>
1 <sup>st</sup> Quarter	Jan 1 – Mar 31	Apr 15
2 <sup>nd</sup> Quarter	Apr 1 – Jun 30	July 15
3 <sup>rd</sup> Quarter	Jul 1 – Sep 30	Oct 15
4 <sup>th</sup> 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 / Recovered Fluid Characterization
- (2) Injection Pressure, Rate, Volume



- (3) Injection Zone Fluid Level
- (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.
- (5) Other Required Monitoring

2. Endangering Noncompliance Reporting

Leamington 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

Leamington 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

Leamington 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. Permit Review Report

Within 30 days after receipt of this permit, Leamington shall report to the Director that the person(s) responsible for implementing this permit has read and is personally familiar with all terms and conditions of this permit.

8. Electronic Reporting

In addition to submittal of the hard copy data, Leamington shall submit the required monitoring data in the electronic format specified by the Director.

H. PLUGGING AND ABANDONMENT REQUIREMENTS

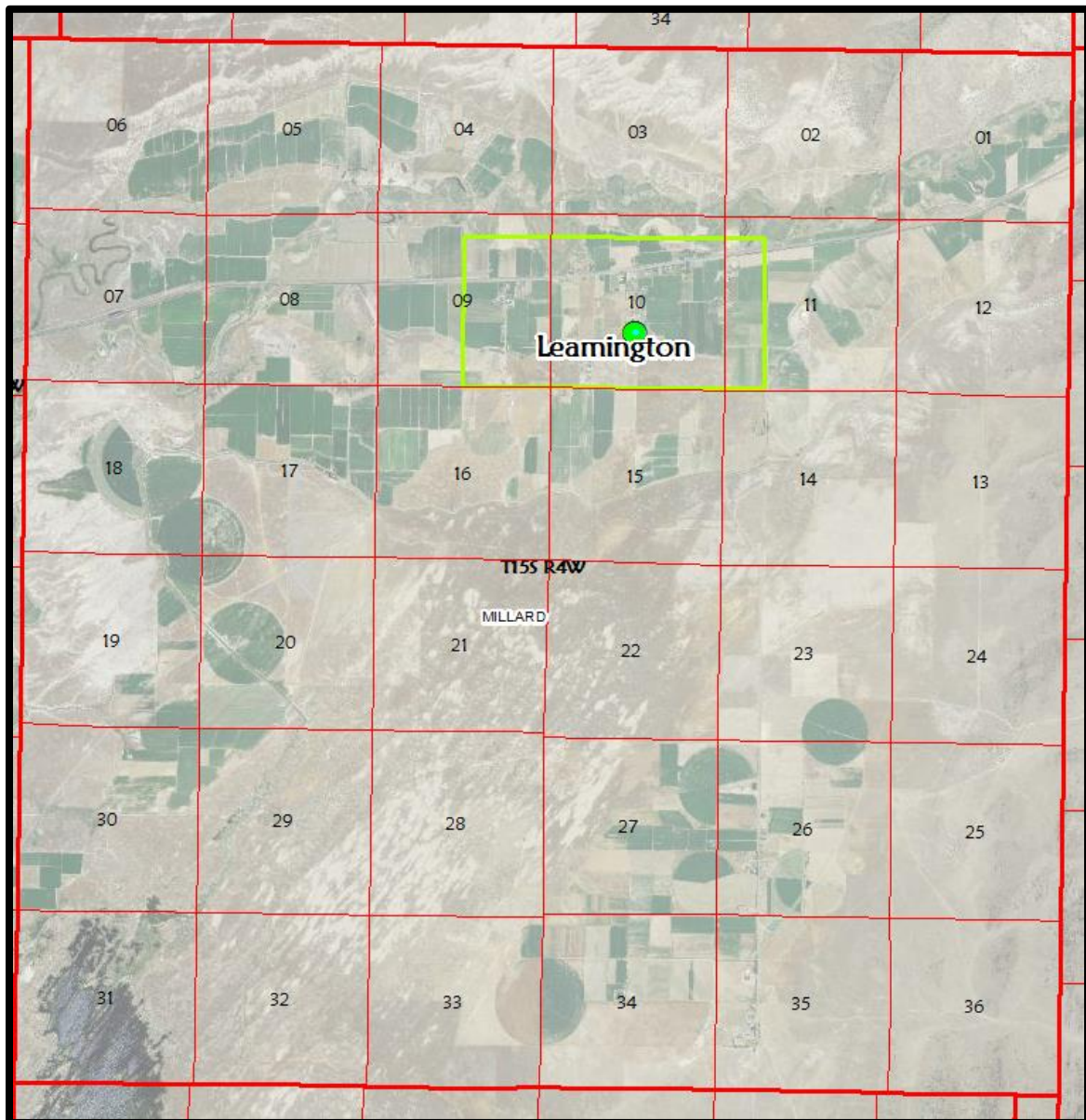
In the event the Leamington Culinary Water Well is required to be plugged and abandoned, it shall be done so in such a manner as to be protective of any USDW and according to the requirements of the Utah Divisions of Water Rights and Drinking Water.

I. FINANCIAL RESPONSIBILITY

Leamington 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.

# Attachment A

General Location Map of the Leamington ASR Project,  
Millard County

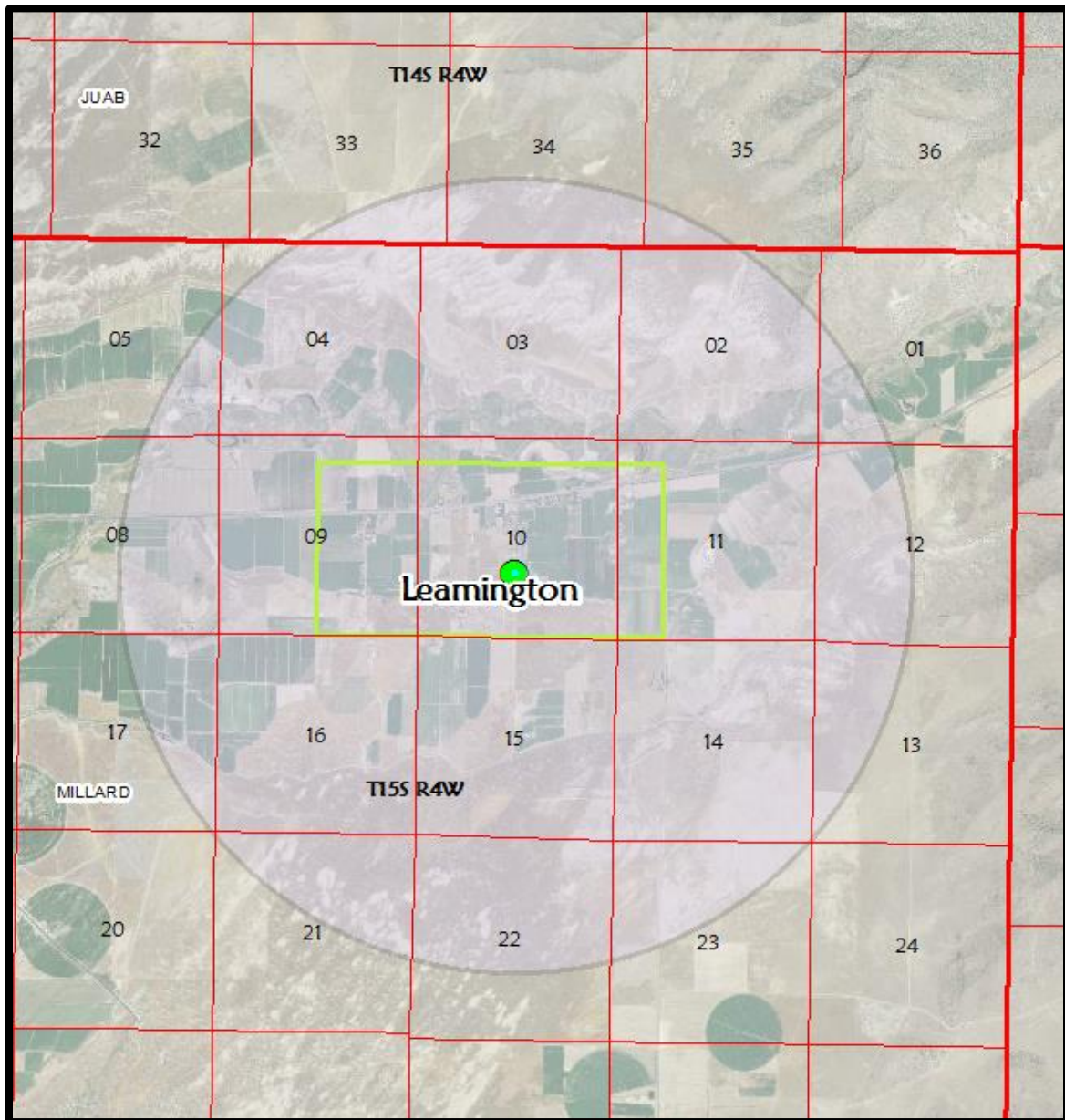


The Leamington Aquifer Storage and Recovery (ASR) project is located within the town boundary of Leamington, Utah in Millard County.

Section 10 of T. 15 S., R. 4 W.; SLB&M

# Attachment B

## Map of the UIC Area of Review



Map showing the 2-mile radius area of review around the Leamington Community Water Well.

## Attachment C

Corrective Action Plan for Artificial Penetrations into Injection  
Zone within Area of Review

(At the time of the effective date of this permit no corrective action  
was required.)

**Attachment D**  
Driller's Log for Leamington  
Community Water Well



Form 113-5M-12-60

Examined 11-18-63 ACT  
 Recorded: B. C. 11-18-63 ACT  
 Inspection Sheet 11-19-63-222  
 Copied

# REPORT OF WELL DRILLER

## STATE OF UTAH

Application No. 32871-0430  
 Claim No.  
 Coordinate No. (C-154) 1060

GENERAL STATEMENT: Report of well driller is hereby made and filed with the State Engineer, in accordance with the laws of Utah. (This report shall be filed with the State Engineer within 30 days after the completion or abandonment of the well. Failure to file such reports constitutes a misdemeanor.)

(1) WELL OWNER: Jo Gordon Neilson

Name Herman S. Lane City  
 Address 440 S. T. 15 S. R. 4 W. 22N

## (2) LOCATION OF WELL:

County Millard Ground Water Basin (leave blank)

North 2110 feet. East 1020 feet from NW Corner

South 440 feet. West 15 feet from 32.84 (strike out words not needed) S. R. 4 W. 22N

## (3) NATURE OF WORK (check):

Replacement Well ☐ Deepening ☐ Repair ☐ New Well ☒ Abandon ☐  
 If abandonment, describe material and procedure:

## (4) NATURE OF USE (check):

Domestic ☐ Industrial ☐ Municipal ☒ Stockwater ☐  
 Irrigation ☐ Mining ☐ Other ☐ Test Well ☐

## (5) TYPE OF CONSTRUCTION (check):

Rotary ☐ Dug ☐ Jetted ☐  
 Cable ☒ Driven ☐ Bored ☐

## (6) CASING SCHEDULE:

1.0" Diam. from 1 foot to 142 feet Gage 281  
 10.0" Diam. from 1 foot to 637 feet Gage 281  
 10.0" Diam. from 1 foot to 827 feet Gage 282

New ☐ Rejected ☐ Used ☐

## (7) PERFORATIONS:

Perforated? Yes ☒ No ☐

Type of perforator used Mills

Size of perforations 3/8 inches by 3 inches

12 perforations from 810 feet to 785 feet

perforations from        feet to        feet

perforations from        feet to        feet

perforations from        feet to        feet

perforations from        feet to        feet

## (8) SCREENS:

Well screen installed? Yes ☐ No ☐

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to

Diam. Slot size Set from ft. to

## (9) CONSTRUCTION:

Was well gravel packed? Yes ☐ No ☐ Size of gravel:

Gravel placed from        feet to        feet

Was a surface seal provided? Yes ☒ No ☐

To what depth? 142-6 feet

Material used in seal:       

Did any strata contain unusable water? Yes ☐ No ☐

Type of water: Depth of strata

Method of sealing strata off: 15 sacks of Cement

permanently bottom 12" casing 10"

10" casing

Was surface casing used? Yes ☒ No ☐

Was it cemented in place? Yes ☒ No ☐

## (10) WATER LEVELS:

Static level 53 feet below land surface Date Oct. 20

Artesian pressure        feet above land surface Date

## (11) FLOWING WELL:

Controlled by (check) Valve ☐

Cap ☐ Plug ☐ No Control ☐

Does well leak around casing? Yes ☐ No ☐

## (12) WELL TESTS:

Drawdown is the distance in feet the water level is lowered below static level.

Was a pump test made? Yes ☒ No ☐ If so, by whom? Rhodes Bros.

Yield: 450 gal./min. with 50 feet drawdown after 24 hours

" " " " " "

Bailer test:        gal./min. with        feet drawdown after        hours

Artesian flow        s.p.m. Date

Temperature of water        Was a chemical analysis made? No ☐ Yes ☒

## (13) WELL LOG:

Diameter of well 8 7/8 inches

Depth drilled 870 feet. Depth of completed well 830 feet.

NOTE: Place an "X" in the space or combination of spaces needed to designate the material or combination of materials encountered in each depth interval. Under REMARKS make any desirable notes as to occurrence of water and the color, size, nature, etc., of material encountered in each depth interval. Use additional sheet if needed.

DEPTH	MATERIAL										REMARKS
	Clay	Silt	Sand	Gravel	Cobbles	Pebbles	Flint	Conglomerate	Bedrock	Other	
From											
15			X								Surface
45			X								Water 45'
45-60			X	X							
60-90			X								Fine
90-125			X								
125-360			X	X	X						
360-510			X	X	X						Layers -
510-780			X	X	X						Water weak
780-830			X	X	X						Water strong
830-870			X	X	X						Drilled Solid Work

Work started 6-26 1963 Completed Oct. 26 1963

## (14) PUMP:

Manufacturer's Name

Type: H. P.

Depth to pump or bowline feet

## Well Driller's Statement:

This well was drilled under my supervision, and this report is true to the best of my knowledge and belief.

Name Scott Stephenson Drilling Co.

(Person, firm, or corporation) (Type or print)

Address Fillmore, Utah

(Signed) Scott Stephenson (Well Driller)

License No. 106 Date Oct. 26 1963

USE OTHER SIDE FOR ADDITIONAL REMARKS

# Attachment E

## Injection Well Operating Plan and Procedures

## E. Operating Requirements

### 1. Class V ASR Injection Well Operation Standards

The Injection Well is directly connected to the distribution system which includes water storage tanks and a spring collection system. All necessary measures are taken to protect the water from any contaminants which may cause a violation to drinking water standards or adversely affect health. Precautionary measures are taken during all activities such as construction, operation, maintenance, plugging, abandonment, etc. Therefore, any water conveyed back into the aquifer is free of contaminants and health hazardous substances.

### 3. Injection Zone

The Injection Well is stationary and as such only conveys water back into the aquifer in a single location. Flow into the well is gravity flow (non-pressurized). Therefore, the injection is explicitly limited to the appropriate zone and does not affect adjacent zones.

### 4. Injection Pressure and Rate Limitation

The Injection Well piping is equipped with an orifice, which limits the flow to 70 gallons per minute (gpm). Water is conveyed back into the well by gravity flow, therefore the pressure is limited to the maximum head attainable at the connected water storage tanks. No artesian conditions at wells within a 2 mile radius have been reported as a result of aquifer replenishment via the injection well, therefore this maximum pressure limit is acceptable.

### 5. Injection Volume Limitation

The Injection Well piping is equipped with a flow meter and SCADA system used to calculate the volume of water injecting into the aquifer. In this way, the volume is monitored and recorded. This information is sent to the state as a report (see Reporting Requirements in Attachment G for more information). If the monitored volume is above the prescribed constraints set forth by the state, the Town of Leamington will stop all injection.

### 6. Injection Fluid Limitations

- a. Water is conveyed to the Injection Well as follows: Water collected from the Upper and Lower Netties, Upper and Lower Narrows, and Black Willow Springs in Fool Creek Canyon is conveyed to the water storage tanks and then to the distribution system. When the spring flow is greater than the demand of the water system the excess is then used to replenish the aquifer. Therefore, only water coming from the springs stated previously is able to make it to the Injection Well. If there is any possibility that water from another source could be injected, the Town of Leamington will notify the state.
- b. The water is treated by a gas chlorination system more than 2 miles above the water storage tanks.
- c. The Injection Well is feed by the culinary water system and therefore by design the water meets all Federal and State Maximum Contaminate Levels for Drinking Water (MCLs), and State Ground Water Quality Standards. These standards include the rule that the maximum total dissolved solids (TDS) of the injected water shall not exceed 500 milligrams per liter (mg/l). The water system is tested regularly to ensure compliance with such regulations as is required by the Utah Department of Water Quality. This information is to be submitted with the quarterly reporting as outlined in Attachment G.

- d. The culinary water system which is directly connect to the Injection Well is free of hazardous waste as defined by UAC R315-2-3 and/or 40 CFR 261. The system is protected from such contamination as the culinary water system has been designed to all applicable Federal and State Rules and Regulations. To ensure compliance, regular reports are submitted to the state (see Reporting Requirements in Attachment G for more information).
  - e. The Injection Well is directly connected to the culinary water system which is regulated to ensure compliance with all Utah Rules for Public Drinking Water Systems in UAC R309-525-11 in regards to additives introduced into the injection stream. Through regular monitoring and reporting of the water, the Town of Leamington makes sure water stays in compliance (see Reporting Requirements in Attachment G for more information).
  - f. The Town of Leamington shall notify the Director 10 days in advance of any changes in the injection fluid or process additives which my alter the quality or chemical composition of the water.
  - g. The Town of Leamington shall stop all aquifer replenishment through the injection well immediately by closing valves which are on the injection lines to stop any contaminated water from entering the aquifer in the event of a spill or dumping incident which may adversely affect the quality of water conveyed to the Injection Well, or if the water has exceeded Federal or State MCLs, State Ground Water Quality Standards, TDS of 500 mg/l, or in any way the water may adversely affect health. No injection of water shall be permitted until approval has been received by the Director.
7. Security
- a. The gas chlorinator facility is secured inside a building which is locked. Only designated persons by the Town of Leamington are allowed access.
  - b. Access to all critical features of the water storage tanks are secured by lock and key. Only designated persons by the Town of Leamington are allowed access.
  - c. The well head of the Leamington Town Culinary Water Well is contained within a building which is able to be locked. Only designated persons by the Town of Leamington are allowed access.

# Attachment F

## Monitoring, Recording, and Reporting Plan

## F. Monitoring and Recording Requirements

### 3. Monitoring Equipment and Methods

The monitoring of all flow injected into the aquifer is accomplished through a flow meter in the aquifer injection line. This flow meter is connected to a SCADA system for regular monitoring of injected volume. Typical equipment used for water quality testing (e.g., sample bottles) is used for all water testing. Pressure is monitored from pressure transducers in the well house which are connected to the injection line.

### 4. Injectate and Recovered Fluid Characterization

The Town of Leamington will monitor the injected and recovered fluids according to the monitoring parameter list and schedule in Attachment G of this permit. This injectate / recovered fluid characterization is to be accomplished by water testing and submitted with the quarterly monitoring reports.

### 5. Injection Pressure, Injection Rate, and Injection Volume

Leamington will monitor the injection pressure, injection rate, and injection volume as required by Attachment G of this permit.

### 6. Injection Zone Fluid Level

The fluid level in the injection zone shall be monitored semi-monthly and recorded on the recording worksheet included in Attachment G.

## G. Reporting Requirements

### 1. Quarterly Monitoring Reports

#### a. Schedule for Submitting Quarterly Monitoring Reports

The schedule which a representative of the Town of Leamington will submit quarterly monthly reports as outlined in the permit.

#### b. Content of Quarterly Monitoring Reports

The following monitoring data will be included in the quarterly monitoring reports:

- (1) Injectate / Recovered Fluid Characterization – This is to be accomplished with water quality testing. The report compared to the monitoring parameters and schedule in Attachment G which shows the maximum levels of contaminant.
- (2) Injection Pressure, Rate, Volume – The worksheet included in Attachment G which this will be regularly recorded on will be scanned and submitted.
- (3) Injection Zone Fluid Level – The worksheet which this will be regularly recorded on will be scanned and submitted.
- (4) Noncompliance Not Previously Reported – A Town of Leamington representative will report any noncompliance as specified in the permit.

### 2. Endangering Noncompliance Reporting

Leamington will report to the Director any noncompliance that may endanger health or the environment as follows:

#### a. Twenty-four Hour Report

Endangering noncompliance information as outlined in the permit will be provided orally within 24 hours from the time Town of Leamington representative becomes aware of such circumstances.

b. Five-day Reporting

The Town Leamington representative will provide a written submission with the content outlined in this permit within five days of the time they become aware of the circumstances of the endangering noncompliance.

3. Planned Changes

The Town of Leamington representative will give written notice to the Director, as soon as possible, of any planned physical alternations or additions to the UIC-permitted facility.

4. Anticipated Noncompliance

The Town of Leamington representative will give advance notice to the Director of any planning changes in the permitted facility or activity that may result in noncompliance with the permit.

5. Permit Transfers

The Town of Leamington representative will notify the Director at least 30 days in advance of the proposed transfer date of this permit as outlined in the permit.

6. Compliance Schedule Reporting

The Town of Leamington representative will submit 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 will be submitted no later than 30 days following each schedule date.

7. Permit Review Report

Within 30 days after receipt of this permit, the Town of Leamington Representative will report to the Director that the person(s) reasonable for implementing his permit has read and is personally familiar with all terms and conditions of this permit.

8. Electronic Reporting

In addition to submittal of the hard copy data, the Town of Leamington will submit the required monitoring data in the electronic format specified by the Director.

# Leamington ASR - Semi-Monthly Monitoring During Periods of Injection

Year: \_\_\_\_\_

Month	Semi-Monthly Date	Injection Pressure	Injection Rate	Injection Volume	Depth to Fluid Level	Comments
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						



Attachment G

Monitoring Parameters and Schedule

ATTACHMENT G

Underground Injection Control (UIC) Monitoring Parameters and Monitoring Schedule for Leamington ASR Project (13)

Analyte	CAS Number	Units	Maximum Contaminant Level (MCL)	Secondary Drinking Water Regulations	New Injectate Characterization (1)	Yearly Injectate	3-Year Injectate	6-Year Injectate	Baseline Well GW Characterization	Yearly Well GW	3-Year Well GW
Inorganics and Metals:											
Aluminum	7429-90-5	mg/L		0.05 to 0.2	X		X		X		X
Antimony	7440-36-0	mg/L	0.006		X		X		X		X
Arsenic	7440-38-2	mg/L	0.01		X		X		X		X
Barium	7440-39-3	mg/L	2		X		X		X		X
Beryllium	7440-41-7	mg/L	0.004		X		X		X		X
Cadmium	7440-43-9	mg/L	0.005		X		X		X		X
Chloride	7647-14-5	mg/L		250	X		X		X		X
Chromium (Total)	7440-47-3	mg/L	0.1		X		X		X		X
Copper	7440-50-8	mg/L		1	X		X		X		X
Cyanide (as free Cyanide)	143-33-9	mg/L	0.2		X		X		X		X
Fluoride	7681-49-4	mg/L	4	2	X		X		X		X
Iron	7439-89-6	mg/L		0.3	X		X		X		X
Manganese	7439-96-5	mg/L		0.05	X		X		X		X
Mercury (inorganic)	7487-94-7	mg/L	0.002		X		X		X		X
Nickel	7440-02-0	mg/L			X		X		X		X
Selenium	7782-49-2	mg/L	0.05		X		X		X		X
Silver	7440-22-4	mg/L		0.1	X		X		X		X
Sodium		mg/L			X		X		X		X
Sulfate (2)	7757-82-6	mg/L	1,000	250	X		X		X		X
Thallium	7440-28-0	mg/L	0.002		X		X		X		X
Total Dissolved Solids (3)		mg/L	2000	500	X		X		X		X
Zinc	7440-66-6	mg/L		5	X		X		X		X

ATTACHMENT G

Underground Injection Control (UIC) Monitoring Parameters and Monitoring Schedule for Leamington ASR Project (13)

Analyte	CAS Number	Units	Maximum Contaminant Level (MCL)	Secondary Drinking Water Regulations	New Injectate Characterization (1)	Yearly Injectate	3-Year Injectate	6-Year Injectate	Baseline Well GW Characterization	Yearly Well GW	3-Year Well GW
<b>Nitrate/Nitrite:</b>											
Nitrate (as Nitrogen)	14797-55-8	mg/L	10		X	X			X	X	
Nitrite (as Nitrogen)	14797-65-0	mg/L	1		X	X			X	X	
Total Nitrate and Nitrite (as N)		mg/L	10		X	X			X	X	
<b>Asbestos:</b>											
Asbestos (4)	1332-21-4	million fibers/L longer than 10 microns	7		X				X		
<b>Volatile Organic Contaminants (VOC):</b>											
Benzene	71-43-2	mg/L	0.005		X		X		X		X
Carbon tetrachloride	56-23-5	mg/L	0.005		X		X		X		X
Dichlorobenzene o-	95-50-1	mg/L	0.6		X		X		X		X
Dichlorobenzene p-	106-46-7	mg/L	0.075		X		X		X		X
Dichloroethane (1,2-)	107-06-2	mg/L	0.005		X		X		X		X
Dichloroethylene (1,1-)	75-35-4	mg/L	0.007		X		X		X		X
Dichloroethylene (cis-1,2-)	156-59-2	mg/L	0.07		X		X		X		X
Dichloroethylene (trans-1,2-)	156-60-5	mg/L	0.1		X		X		X		X
Dichloromethane	75-09-2	mg/L	0.005		X		X		X		X
Dichloropropane (1,2-)	78-87-5	mg/L	0.005		X		X		X		X
Ethylbenzene	100-41-4	mg/L	0.7		X		X		X		X
Monochlorobenzene	108-90-7	mg/L	0.1		X		X		X		X
Styrene	100-42-5	mg/L	0.1		X		X		X		X
Tetrachloroethylene	127-18-4	mg/L	0.005		X		X		X		X
Toluene	108-88-3	mg/L	1		X		X		X		X
Trichlorobenzene (1,2,4-)	120-82-1	mg/L	0.07		X		X		X		X

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Underground Injection Control (UIC) Monitoring Parameters and Monitoring Schedule for Leamington ASR Project (13)

Analyte	CAS Number	Units	Maximum Contaminant Level (MCL)	Secondary Drinking Water Regulations	New Injectate Characterization (1)	Yearly Injectate	3-Year Injectate	6-Year Injectate	Baseline Well GW Characterization	Yearly Well GW	3-Year Well GW
Trichloroethane (1,1,1-)	71-55-6	mg/L	0.2		X		X		X		X
Trichloroethane (1,1,2-)	79-00-5	mg/L	0.005		X		X		X		X
Trichloroethylene	79-01-6	mg/L	0.005		X		X		X		X
Vinyl chloride	75-01-4	mg/L	0.002		X		X		X		X
Xylenes	1330-20-7	mg/L	10		X		X		X		X
<b>Pesticides:</b>											
2,4 - D (2,4 - dichlorophenoxyacetic acid)	94-75-7	mg/L	0.07		X				X		X
2,4,5-TP (Silvex)	93-72-1	mg/L	0.05		X				X		X
Alachlor	15972-60-8	mg/L	0.002		X				X		X
Aldicarb	116-06-3	mg/L	0.003		X				X		X
Aldicarb sulfone	1646-88-4	mg/L	0.003		X				X		X
Aldicarb sulfoxide	1646-87-3	mg/L	0.004		X				X		X
Atrazine	1912-24-9	mg/L	0.003		X				X		X
Benzo(a)pyrene (PAH)	50-32-8	mg/L	0.0002		X				X		X
Carbofuran	1563-66-2	mg/L	0.04		X				X		X
Chlordane	57-74-9	mg/L	0.002		X				X		X
Dalapon (sodium salt)	75-99-0	mg/L	0.2		X				X		X
Di(2-ethylhexyl) adipate	103-23-1	mg/L	0.4		X				X		X
Di(2-ethylhexyl) phthalate	117-81-7	mg/L	0.006		X				X		X
Dinoseb	88-85-7	mg/L	0.007		X				X		X
Endrin	72-20-8	mg/L	0.002		X				X		X
Heptachlor	76-44-8	mg/L	0.0004		X				X		X
Heptachlor epoxide	1024-57-3	mg/L	0.0002		X				X		X
Hexachlorobenzene	118-74-1	mg/L	0.001		X				X		X
Hexachlorocyclopentadiene	77-47-4	mg/L	0.05		X				X		X

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Lindane	58-89-9	mg/L	0.0002		X				X		X
Methoxychlor	72-43-5	mg/L	0.04		X				X		X
Oxamyl (Vydate)	23135-22-0	mg/L	0.2		X				X		X
Pentachlorophenol	87-86-5	mg/L	0.001		X				X		X
Picloram	2/1/1918	mg/L	0.5		X				X		X
Polychlorinated biphenyls (PCBs)	1336-36-3	mg/L	0.0005		X				X		X
Simazine	122-34-9	mg/L	0.004		X				X		X
Toxaphene	8001-35-2	mg/L	0.003		X				X		X
<b>Radionuclides:</b>											
Gross alpha particle activity (including Radium 226 but excluding Radon and Uranium)		pCi/L	15		X			X	X		X
Radium-226 (only required if gross alpha is >= 5pCi/L)	7440-14-4	pCi/L	5					X	X		X
Radium-228	7440-14-4	pCi/L	5					X	X		X
Uranium (only if gross alpha MCL is exceeded)	7440-61-1	mg/L	0.03		X			X	X		X
Gross beta particle and photon emitters (5)		mrem/yr	4		X			X	X		X
Tritium (only if gross beta exceeds 50 pCi/L)		pCi/L	20,000		X			X	X		X
Strontium-90 (only if gross beta exceeds 50 pCi/L)		pCi/L	8		X			X	X		X
Radon	10043-92-2	pCi/L			X			X	X		X

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Total Trihalomethanes (TTHMs): (required only if Chlorine is used as disinfectant) (6)											
		mg/L	0.08		X	X			X	X	
Chloroform	67-66-3	mg/L			X	X			X	X	
Bromodichloromethane	75-27-4	mg/L			X	X			X	X	
Dibromochloromethane	124-48-1	mg/L			X	X			X	X	
Bromoform	75-25-2	mg/L			X	X			X	X	
Haloacetic acids (HAA5): (required only if Chlorine is used as disinfectant) (7)											
		mg/L	0.06		X	X			X	X	
Trihaloacetic acids (THAAs)											
Trichloroacetic acid (TCAA)	76-03-9	mg/L			X	X			X	X	
Dihaloacetic acids (DHAAs)											
Dichloroacetic acid (DCAA)	76-43-6	mg/L			X	X			X	X	
Dibromoacetic acid (DBAA)	631-64-1	mg/L			X	X			X	X	
Monohaloacetic acids (MHAAs)											
Monochloroacetic acid (MCAA)	79-11-8	mg/L			X	X			X	X	
Monobromoacetic acid (MBAA)	79-08-3	mg/L			X	X			X	X	

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Disinfectants and Their By-Products: (8)											
Chloramine (only if used as a disinfectant)	10599-90-3	mg/L	4		X	X			X	X	
Chlorine	7782-50-5	mg/L	4		X	X			X	X	
Chlorine Dioxide (only if used as a disinfectant)	10049-04-4	mg/L	0.8		X	X			X	X	
Chlorite (only if Chlorine Dioxide is used as a disinfectant)	7758-19-2	mg/L	1		X	X			X	X	
Bromide / Bromate (only if Ozone is used as a disinfectant)	24959-67-9	mg/L			X	X			X	X	
(9)											
Turbidity:		NTU	(10)		X	X			X	X	
Total Coliform:			(11)		X	X			X	monthly	
Additional Parameters for New Source Monitoring to Comply with DDW Requirements:											
Color		Color Units		15	X				X		
Corrosivity				Non-Corrosive	X				X		
Foaming Agents		mg/L		0.5	X				X		
Odor		Threshold Odor Number		3	X				X		

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pH		pH units		6.5 – 8.5	X	X			X	X	X
Ammonia, as N		mg/L			X				X		
Boron		mg/L			X				X		
Calcium		mg/L			X				X		
Lead		mg/L			X				X		
Magnesium		mg/L			X				X		
Potassium		mg/L			X				X		
Specific Conductivity at 25 <sup>0</sup> C		µmhos/cm			X	X			X	X	X
Bicarbonate		mg/L			X				X		
Carbon Dioxide		mg/L			X				X		
Carbonate		mg/L			X				X		
Hydroxide		mg/L			X				X		
Phosphorous, Ortho as P		mg/L			X				X		
Silica, dissolved as SiO <sub>2</sub>		mg/L			X				X		
Surfactant as MBAS		mg/L			X				X		
Total Hardness as CaCO <sub>3</sub>		mg/L			X				X		
Alkalinity as CaCO <sub>3</sub>		mg/L			X				X		
Temperature		degrees C or F				X			X	X	X
Total Organic Carbon (TOC) (12)		mg/L			X				X		



## NOTES:

- (1) Permittee shall analyze any new injection source annually for the permit cycle. This is to comply with the Division of Drinking Water's requirement for new source monitoring.
- (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 the TDS limit of the Ground Water Class of the receiving aquifer is not permitted.
- (4) Asbestos monitoring is not required unless the new source is located in area of natural deposits of asbestos or the distribution system contains any asbestos cement piping.
- (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 a location based 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) 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, permittee will be required to analyze for bromate concentrations.
- (10) 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.
- (11) 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.
- (12) If surface water is the source of the injectate, total organic carbon (TOC) shall be included for analysis.
- (13) Contact the Utah Division of Drinking Water for any analytical data that may be available for any injectate source or ground water before commencing a monitoring plan.