UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region08

Ref: 8P-W-UIC

APR 21 2016

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Nicholas Lott, General Manager
American Gilsonite Company
29950 Bonanza Highway
Bonanza, Utah 84008

Re: Draft Area Underground Injection Control Permit UT52338-00000 for Disposal of Produced Mine Dewatering Waste Fluid from the Bonanza Gilsonite Mine, Uintah County, Utah

Dear Mr. Lott:

Please find enclosed a copy of the U.S. Environmental Protection Agency's (EPA) Draft Area Underground Injection Control (UIC) Permit UT52338-00000 for Class V injection wells to dispose of produced mine dewatering waste fluid from the Bonanza Gilsonite Mine, located on the Uintah and Ouray Indian Reservation in Uintah County, Utah. Also enclosed are copies of the Statement of Basis for the proposed action and the Public Notice given on the EPA's website at https://www.epa.gov/uic/underground-injection-control-epa-region-8-co-mt-nd-sd-ut-and-wy.

The EPA regulations and procedures for issuing UIC Permit decisions are found in Title 40 of the Code of Federal Regulations Part 124 (40 CFR §124). These regulations and procedures require a Public Notice and the opportunity for the public to comment on this proposed UIC Permit decision. The public comment period will run for at least 30 days and a courtesy announcement of the comment period, also enclosed, will be published in the following newspapers:

The Vernal Express, Vernal
The Uinta Basin Standard, Roosevelt

A final decision will not be made until after the close of the comment period. All relevant comments will be taken into consideration. If any substantial comments are received, the effective date of the final permit will be delayed for an additional 30 days, as required by 40 CFR §124.15(b), to allow for any potential appeal of the final permit decision.

If you have any questions or comments about the proposed permit, please contact Jason Deardorff of my staff at the letterhead address citing "Mail Code 8P-W-UIC." You may also contact Mr. Deardorff by email at deardorff.jason@epa.gov or by telephone at (800) 227-8917, extension 312-6583.

Sincerely,

Douglas Minter
Chief, Underground Injection Control Unit
Office of Partnerships and Regulatory Assistance

Enclosures (3)

cc:

Ute Tribal Business Committee
Shaun Chapoose, Chairman
Edred Secakuku, Vice-Chairman
Reannin Tapoof, Executive Assistant

Bartholomew Stevens, Superintendent
BIA, Uintah & Ouray Indian Agency

Bart Powaukee, Environmental Director
Ute Indian Tribe

Bruce Pargeets, Assistant Director
Ute Indian Tribe Energy & Minerals Dept.

Brad Hill, Acting Director
Utah Division of Oil, Gas, and Mining

Robin Hansen, Petroleum Engineer
BLM Vernal Field Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL

DRAFT Area UIC Permit No. UT52338-00000

Class V Area Injection Well Permit for Disposal of Mine Dewatering Waste Fluid from American Gilsonite Company's Bonanza Mine

Issued To

American Gilsonite Company
29950 Bonanza Highway
Bonanza, Utah 84008

This page left intentionally blank.

PART 1. AUTHORIZATION TO CONSTRUCT AND OPERATE

Under the authority of the Safe Drinking Water Act (SDWA) and Underground Injection Control (UIC) Program regulations of the U. S. Environmental Protection Agency (EPA), codified at Title 40 of the Code of Federal Regulations (40 CFR) Parts 2, 124, 144, 146, and 147, American Gilsonite Company (hereafter "Permittee") is authorized to construct and operate up to three Class V injection wells within the portion of the Uintah and Ouray Indian Reservation described as T9S, R24E SW Quarter of the SE Quarter of Section 3, according to the terms and conditions of this Permit:

Well Name	Latitude			Longitude			Township and Range			
	Deg	Min	Sec	Deg	Min	Sec	Sec	Twp	Range	¼ Sec
AGC #1	40°	3'	31.8456"	109°	11'	50.050"	3	9S	24E	SE
AGC #2	40°	3'	31.4136"	109°	11'	51.587"	3	9S	24E	SE
AGC #3	40°	3'	30.6936"	109°	11'	50.464"	3	9S	24E	SE

Where a state or tribe is not authorized to administer the UIC program under the SDWA, the EPA regulates underground injection of fluids into wells so that injection does not endanger Underground Sources of Drinking Water (USDWs). The EPA UIC Permit conditions are based on authorities set forth at 40 CFR Parts 144 and 146, and address potential impacts to USDWs. Under 40 CFR Part 144, Subpart D, certain conditions apply to all UIC Permits and may be incorporated either expressly or by reference. This Permit is based on representations made by the applicant and on other information contained in the Administrative Record. Misrepresentation of information or failure to fully disclose all relevant information may be cause for termination, revocation and reissuance, or modification of this Permit and/or formal enforcement action. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege, nor does it authorize injury to persons or property or invasion of other private rights, or any infringement of other Federal, State or local laws or regulations (40 CFR §144.35).

This Permit is issued for a period of 10 years unless modified, revoked and reissued, or terminated pursuant to 40 CFR §144.33(d) or 144.40, and will be reviewed periodically to determine if action is required under 40 CFR §144.36(a). This EPA Permit may be adopted, modified, revoked and reissued or terminated if primary enforcement authority for a UIC Program is transferred to an Indian tribe or state. Upon the effective date of program authorization, reports, notifications, questions and other correspondence should be directed to the primacy agency.

Issue Date: Draft Effective Date: Draft

Draft

Darcy O'Connor
Acting Assistant Regional Administrator*
Office of Partnerships and Regulatory Assistance (OPRA)

*NOTE: Throughout this Permit the term "Director" refers to either the Assistant Regional Administrator for the Office of Partnerships and Regulatory Assistance (OPRA) or the Assistant Regional Administrator of Environmental Compliance, Enforcement and Justice (ECEJ).

PART 2. PROCEDURES FOR CONSTRUCTING AND COMMENCING INJECTION INTO WELLS

1. **Authorization to Construct**: The Permittee shall request in writing and obtain approval from the Director prior to commencing drilling of injection wells. To obtain approval to drill and complete injection wells, the Permittee shall submit to the Director for review:

   a) a cover letter referencing Area UIC Permit UT52338-00000 and well name(s), and requesting approval to drill and complete these wells according to the terms and conditions of Area UIC Permit UT52338-00000;
   b) a completed 7520-12 EPA injection well application form;
   c) an updated map of the ¼-mile Area of Review for each well showing the number, or name, and location of all producing wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected;
   d) cementing records, including cement bond logs, for any new wells in the AoR; and
   e) original documentation demonstrating Financial Responsibility for the subject well(s).

   Once EPA has confirmed that the proposed injection well meets Permit conditions, EPA Region 8 will authorize construction by email or other written communication to the Permittee.

2. **Injection Well Construction**: Upon drilling and completion of an injection well, the Permittee shall notify the Director of the completed construction as soon as possible but no later than 30 calendar days after the date that tubing and packer are set. Notification of well construction shall include:

   a. a cover letter referencing the name and the EPA well identification number of the constructed injection well;
   b. a well bore schematic diagram for the constructed well;
   c. a well location plat map of the constructed well;
   d. the results of a standard annulus pressure test according to Appendix B of this Permit;
   e. the measured or estimated initial pore pressure of the Bird's Nest injection zone according to Appendix B of this Permit;
   f. the measured or estimated temperature of the Bird's Nest injection zone according to Appendix B of this Permit; and
   g. logs and descriptive reports interpreting the result of each log required in Appendix B of this Permit.

3. **Postponement of Construction**: The Permittee shall construct and complete injection wells within one year unless the Permittee has requested an extension from the Director prior to expiration, and the Director approves an extension. Permittee's request to the Director shall be in writing and shall state the reasons for delay, and provide an estimated well completion date.

4. **Commencement of Injection**: The EPA will review materials submitted under Part 2, paragraph 2 to ensure that Permit conditions were complied with during well construction

and that planned operating parameters are in full compliance with this Permit. Once satisfied that all permit conditions have been met, the Director will authorize injection by email or other written correspondence and Permittee shall notify the Director as soon as possible but no more than 30 calendar days after placing the well on injection. Such notification shall include:

a. a statement of the date the well was put on injection; and
b. a statement of the MAIP and current injection pressure of the well.

Any logs or tests which require injection such as a temperature log or radioactive tracer survey required in Appendix B, or by the Director as part of the EPA Authorization to Inject, shall be completed within 180 calendar days of commencement of injection unless the Permittee requests in writing, and the Director approves, an extension. Once EPA has reviewed and approved the log or test, and is satisfied that all permit conditions have been met, EPA Region 8 will provide written notification of approval to the Permittee by email or other written correspondence.

PART 3. INJECTION WELL CONSTRUCTION REQUIREMENTS

The requirements discussed here and depicted in Appendix A represent the approved minimum construction standards for well casing and cement, well head configuration, injection tubing and packer. Deviation from the approved construction standards without prior approval from the Director is prohibited.

*****Permittee is advised to review Appendix B (Testing and Logging Program) to ensure that all required logs and tests are obtained prior to and following the cementing program for each casing string.*****

1. **Deviation Checks**: Deviation checks shall be conducted on all holes constructed by first drilling a pilot hole, and then enlarging the pilot hole by reaming or another method. Such checks shall be at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.

2. **Casing and Cement**: Injection wells shall be cased and cemented to prevent the movement of fluids into or between USDWs. The well casing and cement shall be designed for the life expectancy and purpose of the well. Remedial cementing may be required if shown to be inadequate by cement bond log or other attempted demonstration of Part II (external) mechanical integrity.

   a. 20-inch or similar surface casing shall be set in a 26-inch hole, or similar, to a depth of 170 feet or similar and cemented to surface.
   b. 9 5/8-inch or similar longstring casing shall be set in a 16-inch hole, or similar, to a depth of +/- 1,450 feet. Centralizers shall be placed on the first, third and every other collar for a total of 10 centralizers. Longstring casing shall be cemented to surface.
   c. Complete an 8 ¾-inch or similar open hole into the Bird's Nest injection zone to +/- 1,570 feet.

3. **Injection Tubing and Packer**: Injection tubing and packer are required on all injection wells. The packer shall be set immediately above the injection zone at a depth of +/- 1,410 feet. Appendix A

depicts injection well construction requirements.

4. **Sampling and Monitoring Devices on the Well Head**: The Permittee shall install and maintain in good operating condition:

   a. a "tap" at a conveniently accessible location on the injection flow line between the pump house or storage tanks and the injection well, isolated by shut-off valves, for collection of representative samples of the injected fluid; and
   b. a one-half (1/2) inch female iron pipe fitting, isolated by shut-off valves and located at the wellhead at a conveniently accessible location, for the attachment of a pressure gauge capable of monitoring pressures ranging from normal operating pressures up to the Maximum Allowable Injection Pressure:

      (1) on the injection tubing;

      (2) on the Tubing-Casing Annulus (TCA); and
   c. continuous recording devices located to monitor and record injection pressure, annulus pressure, flow rate, and volume; and
   d. a pressure actuated shut-off device attached to the injection flow line set to shut-off flow from the injection pump when or before the Maximum Allowable Injection Pressure (MAIP) is reached at the wellhead in the injection tubing string(s).

PART 4. WELL LOGGING AND TESTING REQUIREMENTS

1. **Logging and Testing Procedures**: The Permittee shall conduct all logs and tests according to current EPA approved procedures and submit all logging and testing results to the Director for review within 30 calendar days of completion of the logging or testing activity and, include with any data and test results, a report describing the methods used during logging or testing and an interpretation of the test or log results by a qualified log or test analyst.

2. **Annual Pressure Falloff Test**: The Permittee shall perform a pressure falloff test at least once every 365 calendar days as shown in Appendix B. The pressure falloff test is required at 40CFR Part 146.13(d)(1) to monitor pressure buildup in the injection zone, to monitor reservoir parameters, to identify any fracturing, and to identify any boundaries within the injection formations.

   The Permittee shall prepare a plan for running the yearly falloff test. EPA Region 6 has developed a set of guidelines that should be used by the Permittee when developing the site specific plan. Region 6 "UIC Pressure Falloff Testing Guideline" is available from EPA and will be provided upon request. The final test plan shall be submitted to Region 8 for review at least 30 days prior to conducting the annual pressure falloff test.

   It is important that the initial and subsequent tests follow the same test procedure, so that valid comparisons of reservoir pressure, permeability, and porosity can be made. The Permittee shall analyze test results and provide a report with an appropriate narrative interpretation of the test results, including an estimate of reservoir parameters, information of any reservoir boundaries, and estimate of the well skin effect and reservoir flow conditions. The report shall also compare the test

results with previous years test data, unless it is the first test performed at that well, and shall be prepared by a knowledgeable analyst.

3. **Required Tests and Logs**: Required tests and logs are listed in Appendix B of this Permit.

PART 5. MECHANICAL INTEGRITY OF INJECTION WELLS

The Permittee shall maintain the mechanical integrity of injection wells at all times and demonstrate mechanical integrity as specified by the EPA. Injecting into a well that lacks mechanical integrity is prohibited.

1. **Definition of Mechanical Integrity**: An injection well has mechanical integrity if:

   a. there is no significant leak in the casing, tubing, or packer (Part I); and
   b. there is no significant fluid movement into a USDW through vertical channels adjacent to the injection well bore (Part II).

2. **Mechanical Integrity Demonstration Requirements**: The Permittee shall demonstrate Part I (internal) mechanical integrity prior to commencing injection and periodically thereafter as described in Part 5, 3(a) below or as required the Director. The Permittee shall demonstrate Part II (external) mechanical integrity according to Part 5, 3(b) prior to commencement of injection or as required by the Director. The Director may require additional or alternative tests if the results presented by the operator are not satisfactory to the Director to demonstrate mechanical integrity. Results of mechanical integrity tests shall be submitted to the Director as soon as possible but no more than 30 calendar days after the test is complete.

3. **Approved Methods for Demonstrating Mechanical Integrity**:

   a. Part I (Internal) mechanical integrity shall be demonstrated prior to commencement of injection and this demonstration shall be repeated no less than once every five years after the last demonstration. Part I mechanical integrity shall be demonstrated by a standard annulus pressure test or other method approved by the Director.
   b. Part II (External) mechanical integrity shall be demonstrated by a Cement Bond Log (CBL) that is determined by the Director to demonstrate Part II mechanical integrity or other approved Part II mechanical integrity demonstration method including a temperature log, oxygen activation log, or noise log that shall be repeated no less than once every five years.
   c. EPA approved methods shall be used to demonstrate mechanical integrity. EPA Region 8 Ground Water Section Guidance No. 34 "Cement Bond Logging Techniques and Interpretation", Ground Water Section Guidance No. 37, "Demonstrating Part II (External) Mechanical Integrity for a Class VI injection well permit", and Ground Water Section Guidance No. 39, "Pressure Testing Injection Wells for Part I (Internal) Mechanical Integrity" will be provided upon request.

4. **Notification of Mechanical Integrity Testing**: The Permittee shall notify the Director at least seven calendar days prior to any regularly scheduled mechanical integrity test. When the mechanical integrity test is conducted after a well construction, well conversion, or a well rework, any prior notice is sufficient. The Director may allow a shorter notification period if it would be sufficient to

enable EPA to witness the mechanical integrity test. Notification may be in the form of a yearly or quarterly schedule of planned mechanical integrity tests, or it may be on an individual basis.

5. **Loss of Mechanical Integrity**: If the Permittee fails to demonstrate mechanical integrity during a test or a loss of mechanical integrity becomes evident during operation (such as presence of abnormal[1] pressure in the Tubing-Casing Annulus (TCA), water flowing at the surface, etc.), the Permittee shall notify the Director within 24 hours (see Part 13, Paragraph 17(e) of this Permit) and the well shall be shut-in within 48 hours unless the Director requires immediate shut-in. Within five calendar days of discovering the loss of mechanical integrity, the Permittee shall submit a written report that documents the circumstances and repairs undertaken or a proposed remedial action plan. Injection operations shall not be resumed until after the well has successfully been repaired, has demonstrated mechanical integrity and the Permittee has received written notification from the Director. A demonstration of mechanical integrity shall be re-established within 90 days of any loss of mechanical integrity unless written approval of an alternate time period has been given by the Director.

PART 6. REQUIREMENTS FOR OPERATING INJECTION WELLS

Injection between the outermost casing string protecting underground sources of drinking water and the wellbore is prohibited.

1. **Injection Zone**: An *injection zone* is a geological formation, group of formations, or part of a formation that receives fluids through a well. The Injection Zone for Area UIC Permit UT52338-00000 consists of the Bird's Nest Aquifer within the Parachute Creek member of the Green River Formation. The Injection Zone is located within the Authorized Permit Area between the approximate depths of 1,446 feet to 1,569 feet. In no case shall the operation of injection wells cause the movement of injected or formation fluids outside of the injection zone.

2. **Confining Zones**: A *Confining Zone* is a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone. The designated upper Confining Zone for Area UIC Permit UT52338-00000 consists of a continuous sequence of low porosity lacustrine shales and marlstones located within the upper Parachute Creek member of the Green River Formation at an approximate depth interval of 1,410 feet to 1,446 feet. The lower confining zone, also within the Parachute Creek member of the Green River, is the upper portion of the Mahogany Bench Oil Shale; a sequence of interbedded calcareous shales and siltstones from approximately 1,570 feet to 1,720 feet.

3. **Injection Volume Limitation**: There is no limitation on the volume of fluid that may be injected into this well, provided further that in no case shall injection pressure exceed the Maximum Allowable Injection Pressure (MAIP).

4. **Injection Fluid Limitation**: This Permit authorizes the injection of mine dewatering waste fluid produced from American Gilsonite's Bonanza Mine water production wells, for the purpose of disposal. The Permittee shall provide an annual listing of sources of injected fluids in accordance with the reporting requirements in Appendix C of this Permit. Disposal of fluids that are not

[1] Abnormal pressure on the tubing-casing annulus is 100 psig or 10 percent of the injection tubing pressure, whichever is less.

groundwater produced from American Gilsonite's Bonanza Mine water production wells is prohibited. Injection of hazardous waste is prohibited. Injection of waste fluids from industrial processes is prohibited.

5. **Tubing-Casing Annulus (TCA)**: The TCA shall be filled with water treated with a corrosion inhibitor or other fluid approved by the Director. The TCA valve shall remain closed during normal operating conditions and the TCA pressure shall be maintained at zero (0) psi. If TCA pressure cannot be maintained at zero (0) psi, the Permittee shall follow the procedures in Ground Water Section Guidance No. 35 "Procedures to follow when excessive annular pressure is observed on a well."

PART 7. MAXIMUM ALLOWABLE INJECTION PRESSURE (MAIP)

1. **Maximum Allowable Injection Pressure (MAIP) is 300 psig**: Except during well stimulation, the MAIP shall not exceed 300 psig as measured at the well head. Appendix B of this Permit requires a step rate test to be conducted within 180 days of commencement of injection and the EPA will use this data to determine whether a formation parting pressure for the Bird's Nest injection zone can be identified or ruled out below a pressure achieved during the test. In the event the EPA determines that a higher injection pressure than 300 psig will not initiate new fractures or propagate existing fractures in the injection zone, the EPA will follow a permit modification process and notify the Permittee in writing of the revised MAIP.

   In no case shall injection pressure initiate fractures in the confining zone or cause the movement of injection or formation fluids into an underground source of drinking water.

2. **Modification of the MAIP**: Permittee may request an increase or decrease of the MAIP, or the MAIP may be increased or decreased by the Director. The Permittee may be required to conduct a step rate injection test or other suitable test to provide information for determining the fracture pressure of the injection zone. In the event of any change to the MAIP, the EPA would follow a permit modification process and notify the Permittee in writing of the revised MAIP.

PART 8. AREA OF REVIEW (AOR) WELL REQUIREMENTS

All wells located inside or within a ¼-mile radius of T9S, R24E SW Quarter of the SE Quarter of Section 3 shall be drilled and/or cemented so as to preclude upward and downward fluid movement from the Bird's Nest Injection Zone. Plugged and abandoned wells in the AOR of an injection well shall be cemented so as to preclude upward or downward fluid movement from the Bird's Nest Injection Zone or, in the case of uncased, drilled and abandoned wells that penetrate the injection zone, shall have cement plugs that isolate the injection zone from underground sources of drinking water.

PART 9. REQUIREMENTS FOR WORKOVERS AND ALTERATIONS

1. **Definition**: Workover and alternation mean any addition, physical alteration or activity that may affect the tubing, packer or casing and includes well stimulation such as hydraulic fracturing,

polymer gel injection and the use of acid to descale tubing and casing or to treat the injection zone.

2. **Procedures**: Prior to beginning any addition, physical alteration or workover activity, the Permittee shall give advance notice to the Director. Such notice may be given via email correspondence, faxed letter or post. The Permittee shall record all workovers and changes to well construction on a Well Rework Record (EPA Form 7520-12) and when appropriate, provide an updated well bore diagram, and shall provide this and any other record of well workover, including monitoring, logging or test data to the Director within 30 calendar days of completion of the activity.

3. **Re-establishing Mechanical Integrity and Resuming Injection**: A successful demonstration of Part I (internal) mechanical integrity is required following the completion of any well workover or alteration. Injection operations shall not be resumed until the well has successfully demonstrated Part I mechanical integrity and the Director has provided written approval to resume injection.

PART 10. MONITORING, RECORDKEEPING AND REPORTING OF RESULTS

1. **Monitoring Parameters, Frequency, Records and Reports**: Monitoring parameters are specified in Appendix C of this Permit. Pressure monitoring recordings shall be taken at the wellhead. The listed parameters are to be monitored, recorded and reported at the frequency indicated even during periods when the well is not operating. Monitoring records must include:

   a. the date, time, exact place and the results of the observation, sampling, measurement, or analysis, and;
   b. the name of the individual(s) who performed the observation, sampling, measurement, or analysis; and
   c. the analytical techniques or methods used for analysis.

2. **Monitoring Methods**:

   a. Monitoring observations, measurements, samples, etc. taken for the purpose of complying with these requirements shall be representative of the activity or condition being monitored.
   b. Injection pressure, annulus pressure, injection rate, and cumulative injected volumes shall be observed and recorded at the wellhead under normal operating conditions, and all parameters shall be observed simultaneously to provide a clear depiction of well operation.
   c. Pressures are to be measured in pounds per square inch (psi).
   d. Fluid volumes are to be measured in standard oilfield barrels (bbl).
   e. Fluid rates are to be measured in barrels per day (bbl/day).

3. **Records Retention**:

   a. Records of calibration and maintenance, 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 shall be retained for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended any time prior to its expiration by request of the Director.

b. Records of the nature and composition of all injected fluids must be retained until three years after the completion of any plugging and abandonment (P&A) procedures specified under 40 CFR 144.52(a)(6) or under Part 146 Subpart G, as appropriate. The Director may require the Permittee to deliver the records to the Director at the conclusion of the retention period. The Permittee shall continue to retain the records after the three year retention period unless the Permittee delivers the records to the Director or obtains written approval from the Director to discard the records.
c. The Permittee shall retain records at the location designated in APPENDIX C.

4. **Quarterly Reporting**: Regardless of whether the well is operating or not, the Permittee shall submit Quarterly Reports to the Director summarizing the results of the monitoring required and as specified by Appendix C. Form 7520-11 may be copied and shall be used to submit the Quarterly Reports, however, the monitoring requirements specified in this Permit are mandatory even if EPA Form 7520-11 indicates otherwise.

PART 11. INACTIVE INJECTION WELLS AND CONVERTING INJECTION WELLS TO NON-INJECTION WELLS

1. **Inactive Injection Wells**: After any period of two years during which there is no injection, the Permittee shall plug and abandon the well in accordance with Part 12 of this Permit unless:

   a. The Permittee provides written notice to the Director; and
   b. describes the actions or procedures that will be taken to ensure the well will not endanger USDWs during the period of inactivity, including compliance with mechanical integrity demonstration, financial responsibility and all other permit requirements; and
   c. receives written notice by the Director temporarily waiving plugging and abandonment requirements.

2. **Conversions to Non-Injection Wells**: The Director may, for cause or upon a written request from the Permittee, allow conversion of the well from a Class V injection well to a non-Class V well. Conversion may not proceed until the Permittee receives written approval from the Director. Conditions of such conversion may include but are not limited to, approval of the proposed well rework, follow up demonstration of mechanical integrity, well-specific monitoring and reporting following the conversion, and demonstration of practical use of the converted configuration

PART 12. PLUGGING AND ABANDONMENT REQUIREMENTS

1. **Notification of Well Abandonment and Project Closure**: The Permittee shall notify the Director in writing at least 45 calendar days prior to plugging and abandoning an injection well.

2. **Well Plugging Requirements**: Injection wells shall be plugged with cement in a manner which isolates the injection zone and prevents the movement of fluids into or between underground sources of drinking water and in accordance with 40 CFR §146.10. Tubing, packer and other downhole apparatus shall be removed. Cement with additives such as accelerators and retarders that control or enhance cement properties may be used for plugs; however, volume-extending additives and gel

cements are not approved for plug use. If cement retainers or bridge plugs are not used then plug placement shall be verified by tagging. Plugging gel of suitable density shall be placed between all plugs. A minimum 50 ft. surface plug shall be set inside the long string casing to seal pathways for fluid migration into the subsurface. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. Prior to placement of the cement plug(s) the well shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method.

3. **Approved Plugging and Abandonment Plan**: In addition to the requirements in Part 12, paragraph two, Permittee shall:

   a. Isolate the injection zone: Remove downhole apparatus from the well and perform necessary clean out; displace well fluid with plugging gel. Set a cast iron bridge plug (CIBP) immediately above the injection zone at a depth +/- 1,410 feet with a minimum of 20 ft. cement plug on top of the CIBP.
   b. Isolate the Uinta Formation from the Green River Formation: Set a minimum 100 ft. cement plug inside the longstring casing, centered on the contact between the Green River and Uinta Formations.
   c. Isolate Surface Fluid Migration Paths: Set a cement plug inside the longstring casing from surface to at least 50 feet depth.

4. **Plugging and Abandonment Report**: Within 60 calendar days after plugging a well, the Permittee shall submit a report (EPA Form 7520-13) and a well bore diagram of the plugged well to the Director. The plugging report shall be certified as accurate by the person who performed the plugging operation. The report shall consist of either:

   a. statement that the well was plugged in accordance with the approved plugging and abandonment plan; or
   b. where actual plugging differed from the approved plugging and abandonment plan, an updated version of the plan, on the form supplied by the Director, specifying the differences.

PART 13. CONDITIONS APPLICABLE TO ALL PERMITS

1. **Effect of Permit**: The Permittee is allowed to engage in underground injection in accordance with the conditions of this Permit. The Permittee shall not construct, operate, maintain, convert, plug, abandon, or conduct any other 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 under 40 CFR part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not authorized by this Permit or by rule is prohibited. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of any other Federal, State or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any enforcement action brought under the provisions of Section 1431 of the Safe Drinking Water Act (SDWA) or any other law governing protection of public health or the environment, for any imminent and substantial endangerment to human health or the environment, nor does it serve as a shield to the Permittee's

independent obligation to comply with all UIC regulations. Nothing in this Permit relieves the Permittee of any duties under applicable regulations.

2. **Modification, Reissuance, or Termination**: The Director may, for cause or upon a request from the Permittee, modify, revoke and reissue, or terminate this Permit in accordance with 40 CFR §124.5, 144.12, 144.39, and 144.40. Also, this Permit is subject to minor modification for causes as specified in 40 CFR 144.41. The filing of a request for modification, revocation and reissuance, termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any condition of this Permit.

3. **Transfer of Permit**: Under 40 CFR 144.38, this Permit is transferable provided the current Permittee notifies the Director at least 30 calendar days in advance of the proposed transfer date (EPA Form 7520-7) and provides a written agreement between the existing and new Permittees containing a specific date for transfer of Permit responsibility, coverage and liability between them. The notice shall adequately demonstrate that the financial responsibility requirements of 40 CFR 144.52(a)(7) will be met by the new Permittee. The Director may require modification or revocation and reissuance 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; in some cases, modification or revocation and reissuance is mandatory.

4. **Permittee Change of Address**: Upon the Permittee's change of address, or whenever the operator changes the address where monitoring records are kept, the Permittee must provide written notice to the Director within 30 calendar days.

5. **Severability**: The Provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit shall not be affected thereby.

6. **Confidentiality**: In accordance with 40 CFR Part 2 and 40 CFR §144.5, information submitted to the EPA 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 EPA may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in 40 CFR Part 2 (Public Information). Claims of confidentiality for the following information will be denied: The name and address of the Permittee, and information which deals with the existence, absence or level of contaminants in drinking water.

7. **Duty to Comply**: The Permittee must comply with all conditions of this Permit. Any noncompliance constitutes a violation of the Safe Drinking Water Act (SDWA) and is grounds for enforcement action; for Permit termination, revocation and reissuance, or 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 under 40 CFR 144.34. All violations of the SDWA may subject the Permittee to penalties and/or criminal prosecution as specified in Section 1423 of the SDWA.

8. **Duty to Reapply**: If the Permittee wishes to continue an activity regulated by this Permit after the

expiration date of this Permit, under 40 CFR §144.37 the Permittee must apply for a new permit prior to the expiration date.

9. **Need to Halt or Reduce Activity Not a Defense**: 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.

10. **Duty to Mitigate**: The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Permit.

11. **Proper Operation and Maintenance**: 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.

12. **Permit Actions**: This Permit may be modified, revoked and reissued or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

13. **Property Rights**: This Permit does not convey any property rights of any sort, or any exclusive privilege.

14. **Duty to Provide Information**: 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 reissuing, 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. The Permittee is required to submit any information required by this Permit or by the Director to the mailing address designated in writing by the Director.

15. **Inspection and Entry**: The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by 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 must be 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 purpose of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any location.

16. **Signatory Requirements**: All applications, reports or other information submitted to the Director shall be signed and certified according to 40 CFR §144.32. This section explains the requirements

for persons duly authorized to sign documents, and provides wording for required certification.

17. **Reporting Requirements**:
    a. The Permittee shall give prior notice to the Director as soon as possible of any planned changes, physical alterations or additions to the permitted facility.
    b. Anticipated noncompliance: The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
    c. Monitoring Reports: Monitoring results shall be reported at the intervals specified in this Permit.
    d. Compliance schedules: Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than 30 calendar days following each schedule date.
    e. Twenty-four hour reporting: The Permittee shall report to the Director any noncompliance which may endanger human health or the environment, including:

        (1) Any monitoring or other information which indicates that any contaminant may cause 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.

        Information shall be provided, either directly or by leaving a message, within 24 hours from the time the Permittee becomes aware of the circumstances by telephoning (800) 227-8917 and requesting the EPA Region 8 UIC Program Compliance and Technical Enforcement Director, or by contacting the EPA Region 8 Emergency Operations Center at (303) 293-1788. In addition, a follow up written report shall be provided to the Director within five calendar days of the time the Permittee becomes aware of the circumstances. 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 the steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
    f. Oil Spill and Chemical Release Reporting: The Permittee shall comply with all reporting requirements related to the occurrence of oil spills and chemical releases by contacting the National Response Center (NRC) at (800) 424-8802, (202) 267-2675, or through the NRC website http://www.nrc.uscg.mil/index.htm.
    g. Other Noncompliance: The Permittee shall report all instances of noncompliance not reported under paragraphs Part 17, Paragraph 11(b) or Paragraph 11(e) at the time the monitoring reports are submitted. The reports shall contain the information listed in Paragraph 11(e) of Part 17.
    h. Other information: Where the Permittee becomes aware that it failed 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 promptly submit such facts or information to the Director.

PART 14. FINANCIAL RESPONSIBILITY

1. **Method of Providing Financial Responsibility**: The Permittee shall demonstrate and maintain financial responsibility and resources to close, plug and abandon the underground injection well(s) covered by this permit at all times. The Director may, on a periodic basis, require the holder of a permit to revise the estimate of the resources needed to plug and abandon the well(s) to reflect changes in such costs and may require the Permittee to provide a revised demonstration of financial responsibility. No substitution of a demonstration of financial responsibility shall become effective until the Permittee receives written notification from the Director that the alternative demonstration of financial responsibility is acceptable.

2. **Types of Adequate Financial Responsibility**: Adequate financial responsibility to properly plug and abandon injection wells under the federal UIC requirements must include completed original versions of one of the following:

   a. a surety bond with a standby trust agreement;
   b. a letter of credit with a standby trust agreement;
   c. a fully funded trust agreement; or
   d. an independently audited financial statement with a Chief Financial Officer's letter.

   A surety bond acceptable to the Director shall contain wording identical to EPA's model language and shall be issued by a surety bonding company found to be acceptable to the U.S. Department of Treasury, which can be determined by review of that department's Circular #570, currently available on the internet at http://fms.treas.gov/c570/c570.html.

   A letter of credit acceptable to the Director shall contain wording identical to EPA's model language and be issued by a bank or other institution whose operations are regulated and examined by a State or federal agency.

   A fully funded trust agreement acceptable to the Director shall contain wording identical to EPA's model language. Annual reports from the financial institution managing the trust account shall be submitted to the Director showing the available account balance.

   An independently audited financial statement with Chief Financial Officer's letter acceptable to the Director shall contain wording identical to EPA's model language and shall demonstrate the Permittee meets or exceeds certain financial ratios. If this financial instrument is used, it must be resubmitted annually, within 90 days after the close of the Permittee's fiscal year, using the financial data available from the most recent fiscal year.

   A standby trust agreement acceptable to the Director shall contain wording identical to EPA's model language. Annual reports from the financial institution managing the standby trust account shall be submitted to the Director showing the available account balance.

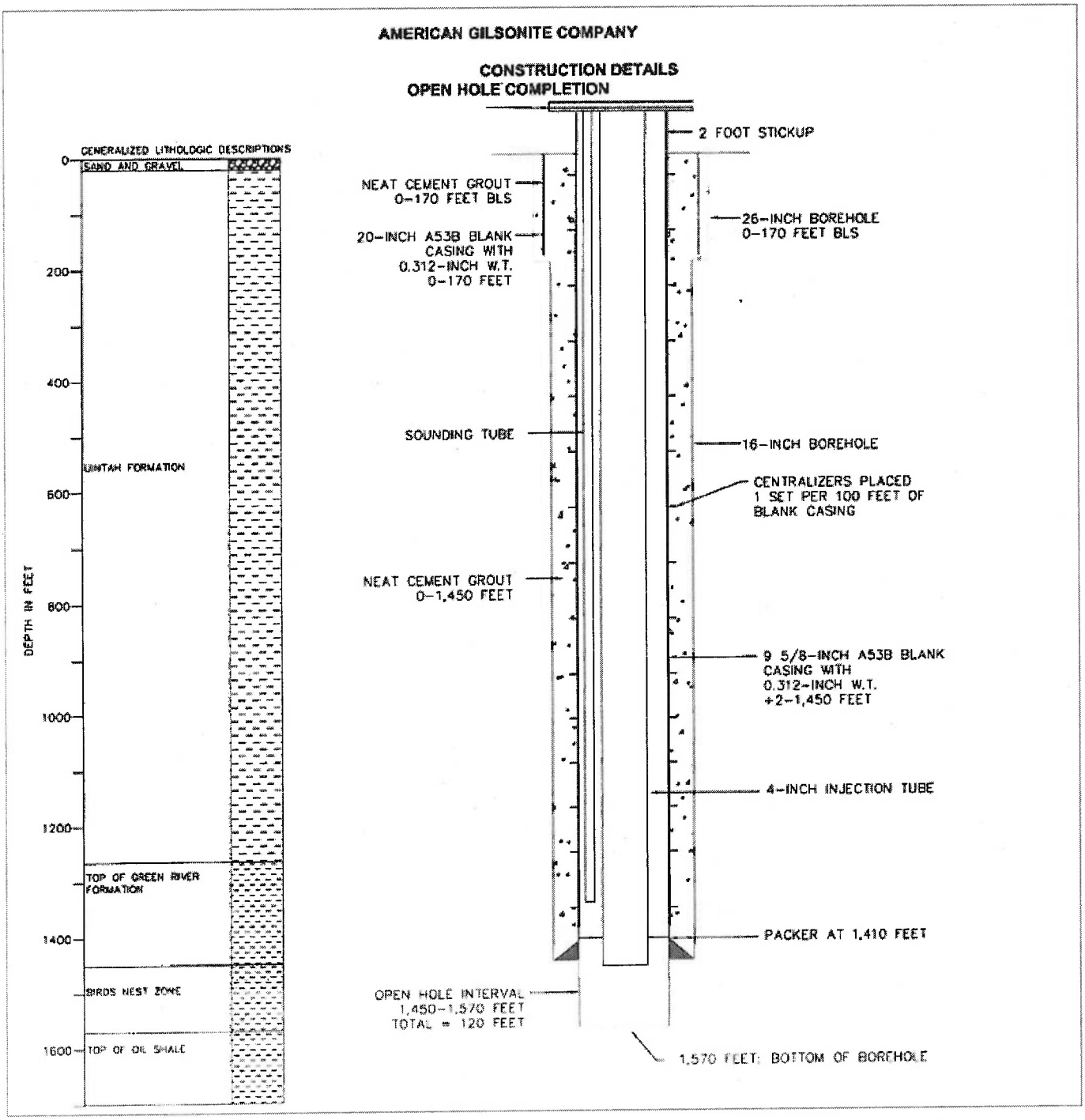
3. **Determining How Much Coverage is Needed**: The Permittee when periodically requested to revise the plugging and abandonment cost estimate discussed above must submit three current independent plugging and abandonment cost estimates for EPA to accurately determine the likely cost to plug the well(s).

4. **Insolvency:** In the event of:

   a. the bankruptcy of the trustee or issuing institution of the financial mechanism; OR
   b. suspension or revocation of the authority of the trustee institution to act as trustee; OR
   c. the institution issuing the financial mechanism losing its authority to issue such an instrument;

   The Permittee must notify the Director in writing, within ten business days, and the Permittee must establish other financial assurance or liability coverage acceptable to the Director within 60 days after any event specified in (a), (b), or (c) above. The Permittee must also notify the Director by certified mail of the commencement of voluntary or involuntary proceedings under Title 11 (Bankruptcy), U.S. Code naming the owner or operator as debtor, within 10 business days after the commencement of the proceeding. A guarantor, if named as debtor of a corporate guarantee, must make such a notification as required under the terms of the guarantee.

Appendix A: Well Construction Diagram



Appendix B: Testing and Logging Program

SURFACE/CONDUCTOR CASING		
TYPE OF LOG/TEST	PURPOSE	DUE DATE
Resistivity	Open-hole formation evaluation	Prior to setting 20" casing
Spontaneous Potential	Open-hole formation evaluation	Prior to setting 20" casing
Caliper	Casing cement evaluation	Prior to setting 20" casing
Gamma Ray	Open-hole formation evaluation	Prior to setting 20" casing
Cement bond	Casing cement evaluation	After cementing 20" casing and prior to setting 9-5/8" casing

LONGSTRING CASING		
TYPE OF LOG/TEST	PURPOSE	DUE DATE
Resistivity	Open-hole formation evaluation	Prior to setting 9-5/8" casing
Spontaneous Potential	Open-hole formation evaluation	Prior to setting 9-5/8" casing
Porosity	Open-hole formation evaluation	Prior to setting 9-5/8" casing
Gamma Ray	Open-hole formation evaluation	Prior to setting 9-5/8" casing
Fracture finder	Open-hole formation evaluation	After cementing 9-5/8" casing
Cement bond	Part II (external) mechanical integrity	After cementing 9-5/8" casing

OPEN HOLE INTERVAL AND INJECTION ZONE		
TYPE OF LOG/TEST	PURPOSE	DUE DATE
Resistivity	Injection formation evaluation	After open hole completion
Gamma Ray	Injection formation evaluation	After open hole completion
Fracture finder	Injection formation evaluation	After open hole completion
Spontaneous Potential	Injection formation evaluation	After open hole completion
Porosity	Injection formation evaluation	After open hole completion
Determine the initial pore pressure of the Bird's Nest Injection Zone	Pressure management of injection zone	Prior to receiving EPA Authorization to Inject
Determine the temperature of the Bird's Nest Injection Zone	Injection formation and fluid movement evaluation	Prior to receiving EPA Authorization to Inject

OTHER REQUIRED TESTS		
TYPE OF LOG/TEST	PURPOSE	DUE DATE
Standard Annulus Pressure test	Part I (internal) mechanical integrity	Prior to receiving EPA Authorization to Inject and no less than once every five years thereafter AND immediately following any well rework activity
Step Rate Test	Determine fracture parting pressure	Due within 180 days of commencement of injection
Pressure Fall Off Test	Monitoring and management of injection zone pressure	Due within 180 days of commencement of injection and then no less than once every 365 days
Temperature Log	Determine baseline temperature profile	Prior to receiving EPA Authorization to Inject

Appendix C: Monitoring and Reporting Requirements

CONTINUOUSLY	
MONITOR, OBSERVE AND RECORD	Injection Pressure (psig)
	Annulus Pressure (psig)
	Injection Rate (bbl/day)
	Cumulative Injected Volume (bbl/day)

QUARTERLY	
ANALYZE	Injection fluid total dissolved solids content (mg/L) and specific gravity
	Injection fluid Specific Conductivity
	Injection fluid pH
	Other chemical or physical properties of the injection fluid as determined by the Director
REPORT	Monthly Average, Maximum, and Minimum values for Injection Pressure (psig)
	Monthly Average, Maximum, and Minimum values for Annulus Pressure (psig)
	Monthly Average, Maximum, and Minimum values for Daily Injection Rate (bbl/day)
	Cumulative Volume Injected since the well began injection operations (bbls)
	Results of quarterly injectate fluid analyses
	Any new oil-gas or water supply wells drilled and completed inside or within a ¼-mile radius of T9S, R24E SW Quarter of the SE Quarter of Section 3 and provide a well completion report and/or cementing records.

REPORTING PERIOD		REPORT DUE TO EPA
1st Quarter	January 1 – March 31	15-May
2nd Quarter	April 1 – June 30	15-Aug
3rd Quarter	July 1 – September 30	15-Nov
4th Quarter	October 1- December 31	15-Feb

Records of all monitoring activities must be maintained and made available for inspection at the following location:

American Gilsonite Company
29950 Bonanza Highway
Bonanza, Utah 84008

STATEMENT OF BASIS FOR DRAFT AREA UIC PERMIT UT52338-00000

Class V Area Permit for Disposal of Produced Mine Dewatering Waste Fluid from American Gilsonite Company's Bonanza Mine, Located on the Uintah and Ouray Indian Reservation in Uintah County, Utah

Contact: Jason Deardorff
U.S. Environmental Protection Agency
Ground Water Program, 8P-W-UIC
1595 Wynkoop Street
Denver, Colorado 80202-1129
Telephone: 1-800-227-8917 ext. 312-6583

This Statement of Basis gives the derivation of site-specific Underground Injection Control (UIC) permit conditions and the reasons for them.

EPA UIC permits regulate the injection of fluids into underground injection wells to prevent endangerment to Underground Sources of Drinking Water (USDWs). EPA UIC permit conditions are based upon the authorities set forth in regulatory provisions at 40 CFR Parts 144 and 146, and are intended to prevent movement of contaminants into USDWs. Issuance of this permit does not convey property rights of any sort or any exclusive privilege, nor authorize injury to persons or property or invasion of other rights, or any infringement of other Federal, State or local laws or regulations. Under 40 CFR 144 Subpart D, certain conditions apply to all UIC permits and may be incorporated either expressly or by reference. General permit conditions for which the content is mandatory and not subject to site-specific differences (40 CFR Parts 144, 146 and 147) are not discussed in this document.

The EPA administers the UIC program throughout Indian country in Utah, including the Uintah and Ouray Indian Reservation. Regulations specific to injection wells located in Indian country in Utah are found at 40 CFR 147 Subpart TT. This permit will expire 10 years from the date of signature unless modified, revoked or reissued by the Director or upon EPA authorization of primary enforcement responsibility (primacy) for applicable portions of the UIC Program to the Ute Indian Tribe, unless the Tribe chooses to adopt and administer this permit as a Tribal permit.

Part 1. General Information and Description of Project

Permittee:
American Gilsonite Company
29950 Bonanza Highway
Bonanza, Utah 84008

Facility:
American Gilsonite Company's Bonanza Mine Located within the Exterior Boundary of the Uintah and Ouray Indian Reservation in Uintah County, Utah

On behalf of American Gilsonite Company (AGC or "the Permittee" or "the applicant"), Stantec Consulting Services (Stantec) submitted an application to EPA Region 8's Underground Injection Control (UIC) Program on July 14, 2015, for an area UIC permit to construct and operate up to three Class I non-hazardous injection wells on a 660 by 660-foot square portion of AGC property, located within the exterior boundary of the Uinta and Ouray Indian Reservation. Due to applicant-requested changes in the well locations and associated surface infrastructure, Stantec submitted a revised application package to the EPA on December 1, 2015.

During permit application review, the EPA determined that the requested disposal wells constitute Class V rather than Class I injection because the proposed injection zone may not be below the lowermost Underground Source of Drinking Water (USDW) according to published literature, and has therefore elected to issue a Class V permit instead of the requested Class I Non-hazardous UIC permit. The Class V permit reflects all regulatory elements of a Class I Non-hazardous permit except that it does not emplace fluids below the lowermost USDW, since USDWs potentially occur beneath the proposed Bird's Nest Aquifer injection zone at this location.

Figure 1 shows the proposed permit area, the single planned well pad and the locations of the three proposed injection wells on the single well pad. Figures 2 and 3 show local and regional overviews of the permit area. Table 1 lists the proposed injection wells and their locations.

Although AGC may complete up to three injection wells, it is anticipated that one well will be sufficient for the anticipated rate of injection. The other two UIC wells are planned as a contingency in the event a single injection well is not adequate to handle the rate of water produced by AGC's mine dewatering pumping.

On July 1, 2015, the EPA's National Pollutant Discharge Elimination System (NPDES) Technical Enforcement Program and AGC entered into an Administrative Order on Consent (AOC) to resolve violations of AGC's NPDES effluent limitations because the EPA found 36 compliance samples collected by AGC from 2011 to the present to be in violation of AGC's NPDES permit. The AOC requires AGC to address the ongoing TDS issues and other violations by April 30, 2016. AGC elected to install one or more underground injection wells to dispose of wastewater instead of pursuing very costly water treatment measures. The NPDES Program estimates 1.8 to 3 million pounds of pollutants will be reduced per year as a result of this enforcement action.

STATEMENT OF BASIS FOR DRAFT AREA UIC PERMIT UT52338-00000

Class V Area Permit for Disposal of Produced Mine Dewatering Waste Fluid from American Gilsonite Company's Bonanza Mine, Located on the Uintah and Ouray Indian Reservation in Uintah County, Utah

Contact: Jason Deardorff
U.S. Environmental Protection Agency
Ground Water Program, 8P-W-UIC
1595 Wynkoop Street
Denver, Colorado 80202-1129
Telephone: 1-800-227-8917 ext. 312-6583

This Statement of Basis gives the derivation of site-specific Underground Injection Control (UIC) permit conditions and the reasons for them.

EPA UIC permits regulate the injection of fluids into underground injection wells to prevent endangerment to Underground Sources of Drinking Water (USDWs). EPA UIC permit conditions are based upon the authorities set forth in regulatory provisions at 40 CFR Parts 144 and 146, and are intended to prevent movement of contaminants into USDWs. Issuance of this permit does not convey property rights of any sort or any exclusive privilege, nor authorize injury to persons or property or invasion of other rights, or any infringement of other Federal, State or local laws or regulations. Under 40 CFR 144 Subpart D, certain conditions apply to all UIC permits and may be incorporated either expressly or by reference. General permit conditions for which the content is mandatory and not subject to site-specific differences (40 CFR Parts 144, 146 and 147) are not discussed in this document.

The EPA administers the UIC program throughout Indian country in Utah, including the Uintah and Ouray Indian Reservation. Regulations specific to injection wells located in Indian country in Utah are found at 40 CFR 147 Subpart TT. This permit will expire 10 years from the date of signature unless modified, revoked or reissued by the Director or upon EPA authorization of primary enforcement responsibility (primacy) for applicable portions of the UIC Program to the Ute Indian Tribe, unless the Tribe chooses to adopt and administer this permit as a Tribal permit.

Part 1. General Information and Description of Project

Permittee:
American Gilsonite Company
29950 Bonanza Highway
Bonanza, Utah 84008

Facility:
American Gilsonite Company's Bonanza Mine Located within the Exterior Boundary of the Uintah and Ouray Indian Reservation in Uintah County, Utah

On behalf of American Gilsonite Company (AGC or "the Permittee" or "the applicant"), Stantec Consulting Services (Stantec) submitted an application to EPA Region 8's Underground Injection Control (UIC) Program on July 14, 2015, for an area UIC permit to construct and operate up to three Class I non-hazardous injection wells on a 660 by 660-foot square portion of AGC property, located within the exterior boundary of the Uinta and Ouray Indian Reservation. Due to applicant-requested changes in the well locations and associated surface infrastructure, Stantec submitted a revised application package to the EPA on December 1, 2015.

During permit application review, the EPA determined that the requested disposal wells constitute Class V rather than Class I injection because the proposed injection zone may not be below the lowermost Underground Source of Drinking Water (USDW) according to published literature, and has therefore elected to issue a Class V permit instead of the requested Class I Non-hazardous UIC permit. The Class V permit reflects all regulatory elements of a Class I Non-hazardous permit except that it does not emplace fluids below the lowermost USDW, since USDWs potentially occur beneath the proposed Bird's Nest Aquifer injection zone at this location.

Figure 1 shows the proposed permit area, the single planned well pad and the locations of the three proposed injection wells on the single well pad. Figures 2 and 3 show local and regional overviews of the permit area. Table 1 lists the proposed injection wells and their locations.

Although AGC may complete up to three injection wells, it is anticipated that one well will be sufficient for the anticipated rate of injection. The other two UIC wells are planned as a contingency in the event a single injection well is not adequate to handle the rate of water produced by AGC's mine dewatering pumping.

On July 1, 2015, the EPA's National Pollutant Discharge Elimination System (NPDES) Technical Enforcement Program and AGC entered into an Administrative Order on Consent (AOC) to resolve violations of AGC's NPDES effluent limitations because the EPA found 36 compliance samples collected by AGC from 2011 to the present to be in violation of AGC's NPDES permit. The AOC requires AGC to address the ongoing TDS issues and other violations by April 30, 2016. AGC elected to install one or more underground injection wells to dispose of wastewater instead of pursuing very costly water treatment measures. The NPDES Program estimates 1.8 to 3 million pounds of pollutants will be eliminated to surface waters per year as a result of this enforcement action.

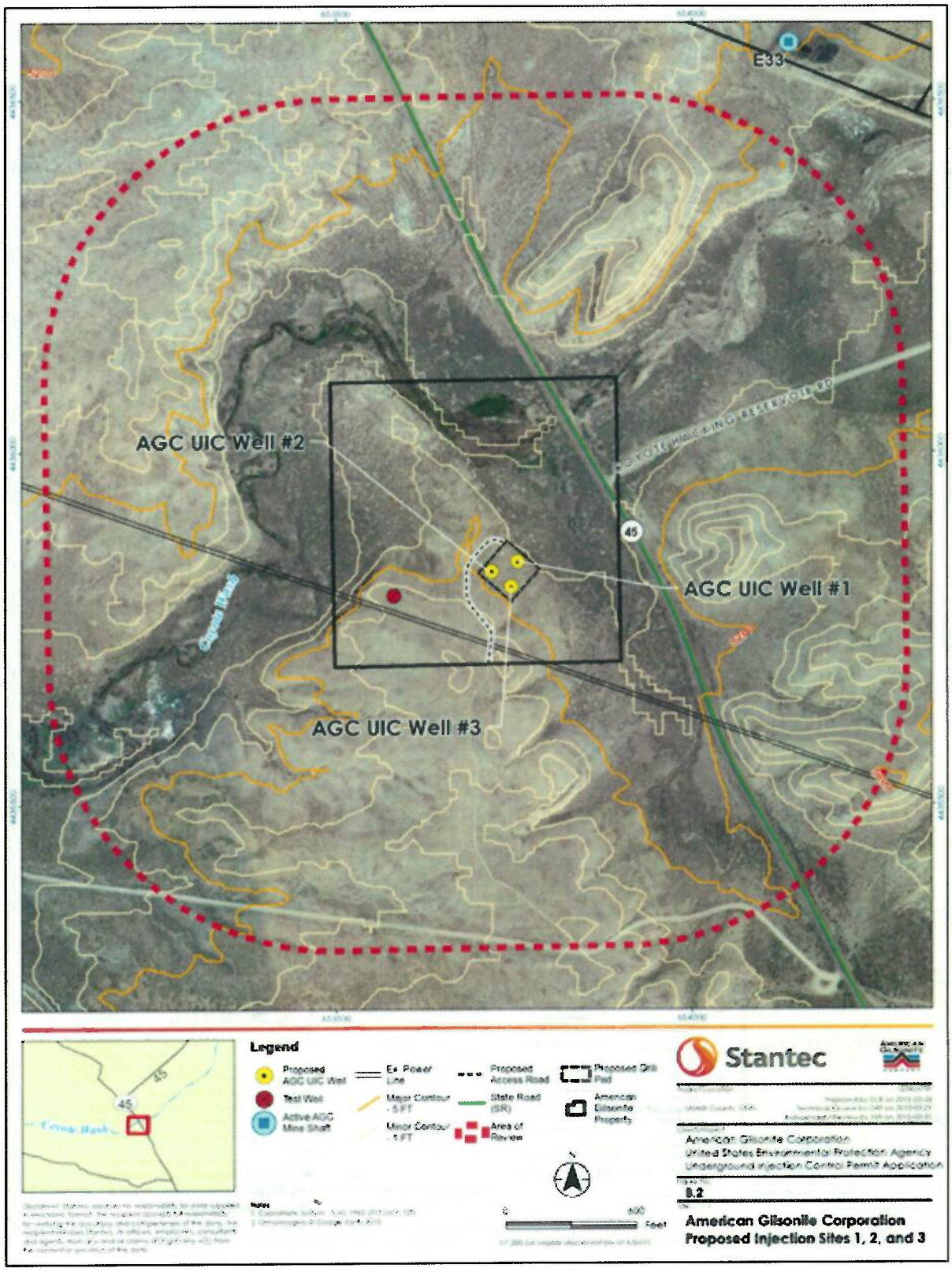

E33
AGC UIC Well #2
AGC UIC Well #1
AGC UIC Well #3
45
Legend
Proposed AGC UIC Well
Test Well
Active AGC Mine Shaft
Ex. Power Line
Major Contour - 5 FT
Minor Contour - 1 FT
Proposed Access Road
State Road (SR)
Area of Review
Proposed Site Pad
American Gilsonite Property
Stantec
American Gilsonite Corporation
United States Environmental Protection Agency
Underground Injection Control Permit Application
8.2
American Gilsonite Corporation
Proposed Injection Sites 1, 2, and 3

Figure 1: Map of proposed permit area, well pad and proposed well locations.

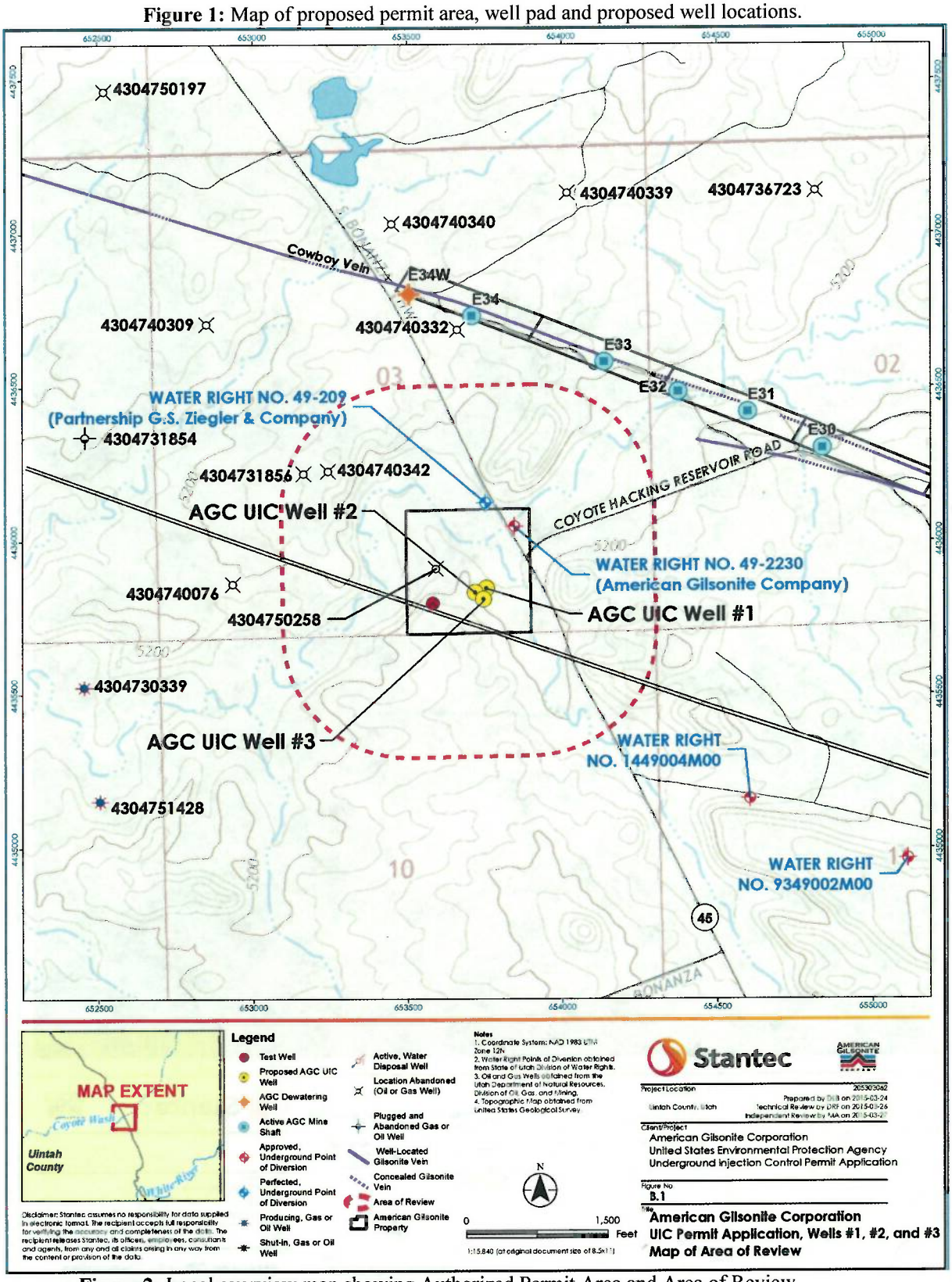


Figure 2: Local overview map showing Authorized Permit Area and Area of Review

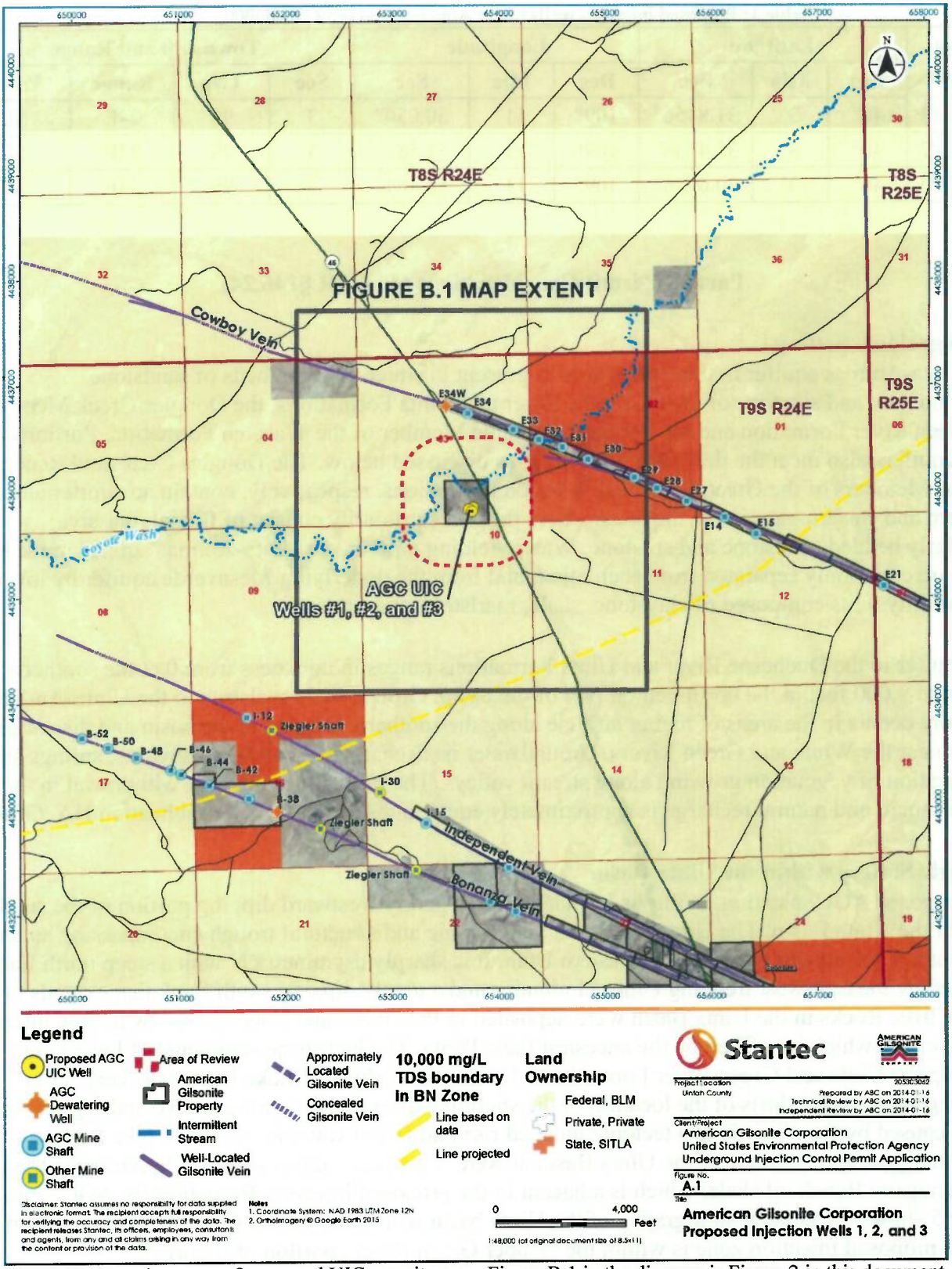


Figure 3: Overview map of proposed UIC permit area – Figure B.1 in the diagram is Figure 2 in this document

Table 1: Proposed injection wells under Area Permit UT52338-00000

Well Name	Latitude			Longitude			Township and Range			
	Deg	Min	Sec	Deg	Min	Sec	Sec	Twp	Range	¼ Sec
AGC #1	40°	3'	31.8456"	109°	11'	50.050"	3	9S	24E	SE
AGC #2	40°	3'	31.4136"	109°	11'	51.587"	3	9S	24E	SE
AGC #3	40°	3'	30.6936"	109°	11'	50.464"	3	9S	24E	SE

Part 2. Permit Considerations (40 CFR §146.24)

Hydrogeologic Setting

The Uinta-Animas aquifer in the Uinta Basin is present in water-yielding beds of sandstone, conglomerate, and siltstone of the Duchesne River and Uinta Formations, the Douglas Creek Member of the Green River Formation and the Renegade Tongue Member of the Wasatch Formation. Portions of these aquifers also meet the definition of USDW as discussed below. The Douglas Creek and Renegade Tongue Members of the Green River and Wasatch Formations, respectively, contain an aquifer along the southern and eastern margins of the basin where the rocks primarily consist of fluvial, massive, irregularly bedded sandstone and siltstone. Water yielding units in the Uinta-Animas aquifer in the Uinta Basin are commonly separated from each other, and from the underlying Mesaverde aquifer by low permeability units composed of claystone, shale, marlstone and limestone.

The aquifer in the Duchesne River and Uinta Formations ranges in thickness from 0 at the southern margin to 9,000 feet in the north-central part of the basin. Groundwater recharge to the Uinta-Animas generally occurs in the areas of higher altitude along the southern margins of the basin and discharge occurs near the White and Green Rivers. Groundwater is discharged primarily to streams, springs and by transpiration of vegetation growing along stream valleys. The rate of groundwater withdrawal in the basin is small and natural recharge is approximately equal to discharge (USGS publication HA 730-C).

Geologic Setting within the Uinta Basin

The proposed AGC injection facility is located within a gently westward dipping portion of the southern flank of the Uinta Basin. The Uinta Basin is a topographic and structural trough encompassing an area of more than 9,300 square miles in northeastern Utah. It is sharply asymmetrical with a steep north flank bounded by the east-west trending Uinta Mountains and a gently dipping south flank that extends to the Book Cliffs. Rocks in the Uinta Basin were deposited in Paleocene and Eocene time by a large internal drainage area which was filled by the ancestral Lake Uinta. The lacustrine sediments of Lake Uinta make up the Uinta and Green River Formations. The southern shore of Lake Uinta was very flat, resulting large cyclic shifts of the location of the shoreline during many transgressive and regressive cycles caused by the climatic and tectonic induced rise and fall of water levels in the lake. Figure 4 shows the geologic structure of the Uinta Basin at AGC's proposed injection site relative to the top of the Mahogany Bench oil shale, which is adjacent to the proposed injection formation for AGC's project. Figure 5 shows the general stratigraphy of the Uinta basin with focus on the Green River Formation. AGC's proposed injection zone is within the "Upper Green River" portion of Figure 5.

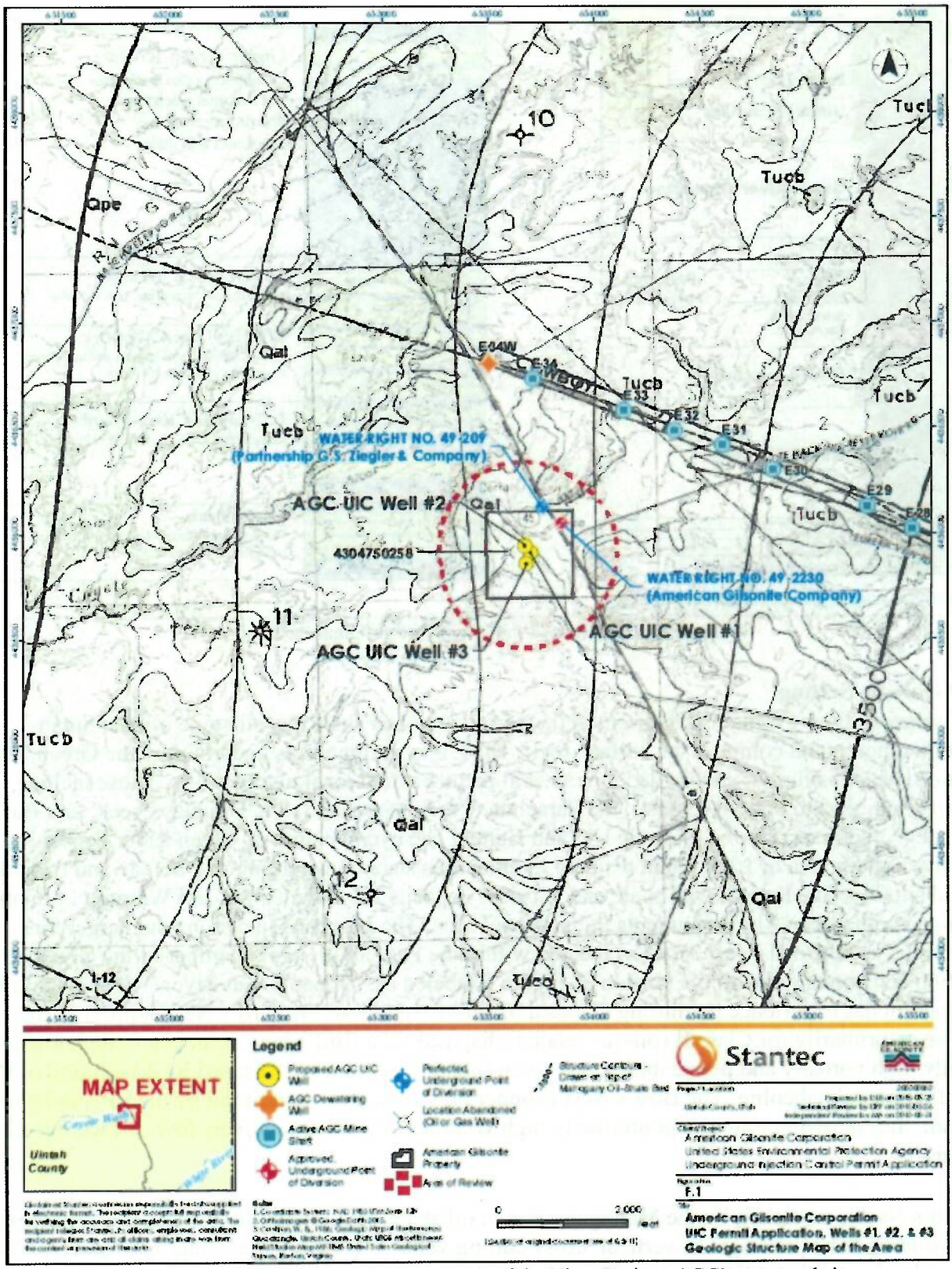


Figure 4: Map showing the geologic structure of the Uinta Basin at AGC's proposed site.

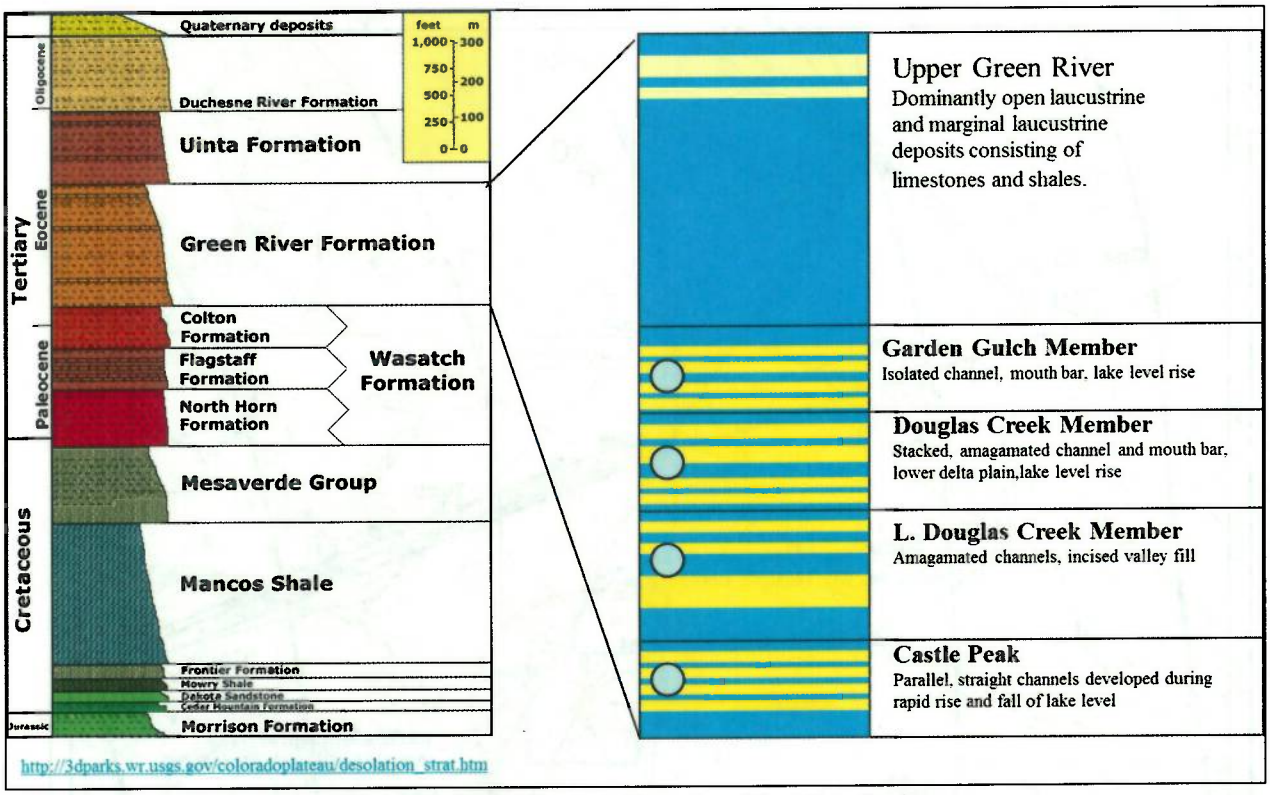


Figure 5: Generalized stratigraphy of the Uinta Basin.

Local Geologic Setting

The Duschesne River Formation is absent in the permit area and shale and siltstone of the Uintah Formation outcrop and compose the surface rock. The Uinta Formation is underlain by the Green River Formation, which is further subdivided into several members and local marker units. These include, from top (youngest) to bottom (oldest), the Parachute Creek, Garden Gulch, Douglas Creek, and Basal Carbonate (sometimes referred to as the Uteland Butte). The cyclic nature of Green River deposition in the southern shore area of Lake Uinta resulted in numerous stacked, intertonguing deltaic and near-shore sand and silt deposits. Red alluvial shale and siltstone deposits from the Colton and Wasatch Formations intertongue with Green River sediments in the permit area. The proposed injection zone target for AGC's wells is the Bird's Nest Aquifer, located within the Parachute Creek member of the Green River Formation and contained with the portion of Figure 5 labeled as "Upper Green River." EPA Region 8 UIC Program has experience permitting disposal of saline water into the Bird's Nest Aquifer in the Uinta Basin, primarily for Class II (oil-gas related) disposal. The Bird's Nest is an evaporite known for unusually high porosity and permeability, and often found to contain vugs caused by dissolution of the evaporitic mineral nahcolite. The Bird's Nest is under pressured and often found by the EPA to be under a vacuum, thus allowing it to accept unusually high volumes of fluid at relatively low surface injection pressures.

The Bird's Nest is underlain by the Mahogany Bench oil shale, also within the Parachute Creek member, and considered to be the origin of vertical, cross-cutting veins of Gilsonite that outcrop in some parts of the Uinta Basin and that AGC mines at Bonanza, Utah. Gilsonite is a natural resinous hydrocarbon that occurs across the greater Uintah Basin though it is predominantly found on the eastern margin of the

basin near the Colorado border. Vertical veins, generally between two and six feet wide but up to 28 feet wide, may extend many miles in length and occasionally as deep as 2,000 feet. Some Gilsonite veins have been observed to be highly friable and fractured, transmitting fluids at depth while others are viscous and likely preclude vertical fluid movement.

Proposed Injection Zone

An *injection zone* is a geological formation, group of formations, or part of a formation that receives fluids through a well. The proposed injection zone for Area UIC Permit UT52338-00000 is the Bird's Nest Aquifer. The depth interval of the Bird's Nest injection zone at the proposed injection site is from 1,446 to 1,570 feet. As previously discussed, the Bird's Nest is a commonly-preferred formation for fluid disposal in the Uinta Basin due to its high permeability and porosity and ability to accept high volumes of fluid at relatively low injection pressures compared to disposal wells completed into other Uinta Basin formations.

Confining Zones

A *Confining Zone* is a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone. The designated upper Confining Zone for Area UIC Permit UT52338-00000 consists of a continuous sequence of low porosity lacustrine shales and marlstones located within the upper Parachute Creek member of the Green River Formation at an approximate depth interval of 1,410 feet to 1,446 feet. The lower Confining Zone is a 150-foot thick interval of interbedded calcareous shale and siltstone beginning at the approximate depth of 1,570 feet. This feature is the upper portion of the Mahogany Bench oil shale and is known to be regionally continuous in lateral extent.

Potential for Subsurface Gilsonite Veins

Gilsonite is a resinous hydrocarbon that occurs exclusively in vertical veins within the Uinta Basin of Utah. The mineral is thought to have originated from the Mahogany Bench Oil Shale, migrating upward through regional fracture networks and then widening and filling these fractures over time. Where veins of Gilsonite outcrop at the surface, the sometimes-tarry (sticky and gooey), sometimes-friable (hard and cracked) hydrocarbon is mined as an economic resource. This UIC permit is being requested to dispose of Uinta Formation water flooding into the actively-mined Bonanza Gilsonite vein and being produced to the surface.

The EPA has considered the possibility that vertical veins of Gilsonite in the subsurface might cross cut the upper confining zone near the proposed injection site, thereby creating pathways for fluid migration from the Green River injection zone into Uinta Formation USDWs. This could especially be problematic if a Gilsonite vein that cross cut the impermeable confining zone was friable (extensively fractured) and therefore presented a highly conductive fluid movement path from the injection zone into Uinta Formation USDWs. The EPA finds the presence of transmissive veins of Gilsonite at the depth of the Bird's Nest Injection Zone, at the location of AGC's proposed injection site, to be highly unlikely based on the following lines of evidence and reasoning.

In 2015, AGC contractor Stantec drilled a stratographic test well at the proposed site that identified a strong "drain" effect into the Bird's Nest Aquifer. The draining of Uinta Formation fluids into the Bird's

Nest was so dramatic that AGC briefly considered managing water in its Gilsonite mines via several Class V drain wells into the Bird's Nest rather than continuing to pump mine water to the surface. The applicant was unable to pull a water sample from the Bird's Nest Aquifer even after isolating it from the Uinta Formation using a packer, demonstrating that the injection zone is not only severely under pressured compared to overlying Uinta Formation waters, but on an extreme vacuum even when isolated from the Uinta Formation.

The applicant has proposed and the EPA generally agrees, that the rapid flooding of AGC's Bonanza Gilsonite Mine with Uinta Formation waters, and the rapid draining of these same waters upon breaching the confining zone into a severely under pressured Bird's Nest Aquifer, are indicative of hydraulic isolation of Uinta Formation waters from the Bird's Nest Aquifer. Even if subsurface Gilsonite veins are present at or near the injection site, this "drain" effect indicates that such veins are not transmissive of fluids, since extreme disparity in hydrostatic pressures between the Uinta Formation and the Bird's Nest would not exist over such a short stratographic interval in the presence of hydraulic conductivity between these formations.

The EPA finds that the presence of abundant water in AGC's Uinta Formation Gilsonite mines and the hydrostatic pressure effects observed in the stratographic test well indicate that communication across the confining zone is not occurring and has therefore made the determination that the confining zone at this site is free of transmissive veins of Gilsonite.

Underground Sources of Drinking Water (USDWs)

Aquifers or the portions thereof which are being or could in the future be used as a source of drinking water are considered to be USDWs. Generally, aquifers with a Total Dissolved Solids (TDS) content below 10,000 mg/L are considered by the EPA to be USDWs. Pursuant to the UIC regulations at 40 CFR § 144.12, underground injection cannot cause movement of a contaminant into a USDW. If data indicates that the receiving aquifer is a USDW, an aquifer exemption would be necessary before injection could be authorized.

Based on the stratographic test well and specifically, the applicant's inability to produce water from the Bird's Nest Aquifer, the EPA does not expect the Bird's Nest at this location to be a USDW even if the TDS content of Bird's Nest waters is determined to be less than 10,000 mg/L, because it does not appear to be able to produce a quantity of water sufficient to supply a public water supply system. Nonetheless, the permit requires that a water sample from the Bird's Nest Aquifer be obtained prior to receiving EPA authorization to inject into the well and the EPA will re-evaluate whether a USDW is present in the injection zone at that time.

Water well data provided by the applicant indicates that USDWs are present in the shallow subsurface as is common throughout the Uinta Basin and Table 2 shows the single water supply well identified within the AoR, however, the application states that AGC was unable to locate this well at the reported location. There are several additional water rights identified in maps but these wells had not been drilled or "perfected" as of the date of the EPA's permit decision. Water produced from the Bonanza Mine workings which extend deep into the Uinta Formation suggest that USDWs extend much deeper and, as discussed under Confining Zones, are likely perched on confinement above the Bird's Nest injection

zone. For this reason, the EPA considers the entirety of the Uinta Formation to be a USDW and the terms and conditions of this permit including well construction, operational and plugging and abandonment requirements are set with the goal of protecting Uinta Formation aquifers from the proposed Bird's Nest injection activity. The EPA notes, however, that the fluid being emplaced into the Bird's Nest via this injection permit is fluid produced from these same aquifers in the Uinta Formation the permit is designed to protect.

Table 2: Drinking water well identified within Area of Review

Well Type / Number	Owner	Distance from AGC UIC Well #1 and Location	Date Drilled	Depth Drilled (ft bgs)	Casing Diameter	Depth to Water (ft bgs)	Max Quantity of Water Measured Gallons per minute (gpm)
Perfected Underground Source / Water Right No. 49-209	Partnership G.S. Ziegler & Company	970 feet N 1,350' and W 1,800' from SE corner Section 3, T9S, R24E, SLB&M	Dec. 1955	100	8-inch	12	11

Literature review by the applicant identified that according to Utah Department of Natural Resources Special Study 147, *Geological Characterization of the Bird's Nest Aquifer, Uinta Basin, Utah*, by Vanden Berg et al. (2013), the Bird's Nest Aquifer is likely to be greater than 10,000 mg/L at AGC's proposed location. In addition, AGC completed a stratigraphic test well and attempted to recover formation fluids from the Bird's Nest Aquifer for analysis but was unable due to severe under pressurization effects within the Bird's Nest. Because the EPA does not expect the Bird's Nest Aquifer to be able to produce a quantity of water sufficient to supply a public water supply system, the EPA has determined that, even if the TDS of formation fluids is less than 10,000 mg/L, the Bird's Nest injection zone is not likely to meet the definition USDW at the proposed location. The proposed injection permit includes a requirement for water sampling of the Bird's Nest and if a water sample is able to be obtained upon initial well completion, the EPA will reconsider whether a USDW is present at that time.

While no USDWs have been identified beneath the proposed Bird's Nest injection zone, Utah Department of Natural Resources Special Study 144, *Moderately Saline Groundwater in the Uinta Basin, Utah*, estimates that USDWs may be present to an approximate depth of 2,500 feet. The EPA notes that the scale of this study, both its wide geographic extent and the resolution of groundwater data used, as well as the methodology used, prevent a conclusion about the precise depth of USDWs at AGC's site in the absence of direct sampling data. Nonetheless, the EPA has designated this UIC permit as Class V instead of Class I because Special Study 144 finds that USDWs may exist below the Bird's Nest injection zone at AGC's proposed location. Table 3 shows the geologic contact depths and water quality as determined using the best available data.

Table 3: Formation contact depths and TDS content (TDS of less than 10,000 mg/L indicates the presence of USDW)

Formation	Depth (feet below land surface)	TDS Content
Uinta	Surface to 1,410	< 10,000 mg/L
Green River	1,410	Unknown
Bird's Nest Injection Zone	1,446	> 10,000 mg/L
Mahogany Bench Shale	1,570	Unknown
TD (Within Green River)	1,600	Unknown

Part 3. Considerations Under Federal Law (40 CFR §144.4)

The EPA has determined that its permit decision authorizing injection wells is in compliance with the following applicable Federal laws:

National Historic Preservation Act (NHPA)
Section 106 of the NHPA and related regulations require that federal agencies consider the effects of federal undertakings on historic properties. For undertakings on tribal land, agencies consult with the Tribal Historic Preservation Officer (THPO), or if no THPO has been certified by the National Park Service, with the State Historic Preservation Officer (SHPO) *and* with the tribe. In accordance with 36 C.F.R. § 800.3(a), the EPA has made an initial determination that one historic property exists within the Area of Potential Effects (APE), but that this site will be avoided during construction activities. Therefore, the EPA concludes that a historic property is present, but that the proposed construction will have no effect upon it.

Cultural Resources Inventories (CRIs) for the proposed project, dated June 5 and October 21, 2015, were prepared by SWCA Environmental Consultants. The second CRI was conducted because AGC's initially proposed surface work plan changed following discussions with the state and the BLM regarding permitting for associated surface infrastructure. The October 21 CRI does not duplicate surveys conducted for the June 5 CRI, and instead supplements the first report. The June 5 CRI found that no historic properties are present and recommended a finding of "no historic properties affected" while the expanded October 21 CRI identified the Camp No. 2 Cabin as a historic property eligible for listing in the National Register of Historic Places, and recommended this site be avoided during construction.

Based on the information provided, the EPA has determined that one historic property exists within the APE for the proposed action but that the proposed construction activity (pipeline assembly and installation) will avoid the historic property by approximately 240 feet. Therefore, the EPA concludes that a historic property is present, but that the undertaking will have no adverse effect on it.

In accordance with Section 106 of the NHPA, the EPA is requesting concurrence regarding this determination from both the Utah SHPO and the Ute Tribe. The EPA intends to conduct these consultation processes concurrent with the public comment period for EPA's draft permit decision but will not issue a final permit decision until the NHPA consultation process has concluded.

Endangered Species Act (ESA)

The EPA utilized the county search tool at www.fws.gov to determine the species of concern under the ESA and identified 12 threatened or endangered species including two bird species, five flowering plant species, four fish species and one mammal for Uintah County, Utah:

- Mexican spotted owl (*Strix occidentalis lucida)*
- Yellow-billed Cuckoo (*Coccyzus americanus*)
- Clay reed-mustard (*Schoenocrambe argillacea*)
- Pariette cactus (*Sclerocactus brevispinus*)
- Shrubby reed-mustard (*Schoenocrambe suffrutescens*)
- Uinta Basin hookless cactus (*Sclerocactus wetlandicus*)
- Ute ladies'-tresses (*Spiranthes diluvialis*)
- Canada lynx (*Lynx canadensis*)
- Bonytail chub (*Gila elegans*)
- Colorado pikeminnow (*Ptychocheilus lucius*)
- Razorback sucker (*Xyrauchen texanus*)
- Humpback chub (*Gila cypha*)

At the request of EPA Region 8, AGC contractor Stantec commissioned two Biological Assessments (BA) for the proposed project by SWCA Environmental Consultants, dated June 5, 2015, and October 9, 2015. The second BA was conducted because AGC's initially proposed surface work plan changed following discussions with the BLM and other surface regulatory agencies. The October 9, 2015 BA discusses the potential for the 8 listed terrestrial species to occur in the project area in Table 4 as follows:

Table 4: Potential for occurrence of 8 listed terrestrial species in the project area

Common Name ***Scientific Name***	**Habitat Association**	**Potential for Occurrence in Survey Areas**
Mexican spotted owl *(Strix occidentalis Lucida)*	Found primarily in canyons with mixed conifer forests, pine-oak woodlands, and riparian areas; nests on platforms and large cavities in trees, as well as on ledges and in caves. Breeding and nesting season is approximately March through August.	None. The survey area is not located within known potential or occupied habitat.
Western Yellow-billed Cuckoo *(Coccyzus americanus occidentalis)*	Present in riparian obligate and can be present in large tracts of Cottonwood/willow habitats. However, this species has also been documented in lowland deciduous woodlands, alder thickets, deserted farmlands, and orchards	None. No cottonwood/willow or other dense riparian habitat exists in the survey area.
Clay reed-mustard	Uintah—canyon rims and steep	None. Formation does not

Schoenocrambe (Hesperidanthus) Argillacea	slopes; contact zone, Uinta–Green River formations; MDS; 5,000–5,650 feet amsl.	exist in the survey area. Survey area out of range for this species.
Pariette cactus *(Sclerocactus brevispinus)*	Duchesne, Uintah—Pariette Wash south of Myton; Uinta Formation, Wagonhound Member, alkaline clay; shadscale saltbush, mat-saltbush, greasewood community; 4,700–5,400 feet amsl.	None. Survey area out of range for this species.
Shrubby reed-mustard *Schoenocrambe (Hesperidanthus) suffrutescens*	Duchesne, Uintah—Big Pack Mountain, Wrinkles Road, Hill Creek Basin; Green River Formation, calcareous shale; MDS, PJS, or MB; 5,400–6,000 feet amsl.	None. Formation and associated soils do not exist in the survey area. Survey area out of range for this species.
Uintah Basin hookless cactus *(Sclerocactus wetlandicus)*	Duchesne, Uintah—widespread in BLM Vernal Field Office area; alluvial benches Ouray to Carbon County line; MDS; 4,700–6,000 feet amsl.	None. Survey area is 0.65 mile from the USFWS potential habitat polygon. No suitable habitat observed in the survey area.
Ute ladies'-tresses *(Spiranthes diluvialis)*	Daggett, Duchesne, Uintah—unconsolidated alluvium; riparian corridors, wetlands, wet meadows; 4,400–6,810 feet amsl.	None. Survey area is out of range for this species.
Canada lynx *(Lynx canadensis)*	Primarily present in Douglas-fir, spruce fir, and subalpine forests at elevations above 7,800 feet. The lynx uses large, woody debris, such as downed logs and windfalls.	None. If extant in Utah, this species is most likely present in montane forests.

Because the eight terrestrial species discussed in Table 4 have no potential to occur within or near the project area, the EPA has concluded that its UIC permit decision will have no effect on these species.

The October 9, 2015, BA also indicates that four endangered fish species do not occur in the project area. However, the EPA has determined that its UIC permit decision has the potential to affect critical fish habitat in the upper Colorado River system. These effects may be caused by construction activity within the ephemeral dry wash tributary to Coyote Wash but more importantly by the cessation of ongoing discharge of mine dewatering waste to Coyote Wash, a tributary to portions of the Colorado River designated as critical fish habitat.

The EPA has determined that any disturbance to the surface caused by installation of water and electrical supply lines across or in proximity to the ephemeral dry wash tributary to Coyote Wash is not expected to cause adverse effects to the four fish species because the dry wash is not connected to fish

habitat except during rare precipitation events that are unlikely to occur during the short-duration installation of these components. The EPA also considers that AGC's Storm Water Pollution Prevention Plan is designed to prevent such impacts from occurring during project construction.

While no adverse effects are expected, the EPA anticipates a beneficial effect of its UIC permit decision to the four endangered fish species based a resultant reduction of between 1.8 and 3 million pounds of pollutants discharged to critical fish habitat each year, including dissolved solids, suspended solids and hydrocarbons.

Pursuant to 50 CFR section 402.13, the EPA is entering into an informal consultation process with the U.S. Fish and Wildlife Service (USFWS) regarding its proposed action and anticipates that the 30-day Section 7 consultation period may run concurrently with a solicitation of public comment regarding the EPA's draft permit decision. The EPA will not issue a final UIC permit decision until its ESA consultation process with the USFWS has concluded.

Fish and Wildlife Coordination Act

The EPA will coordinate with the BLM, USFWS and the Ute Tribal Business Committee regarding this permit decision and these groups will be solicited to review and comment on the project. The EPA is also aware of ongoing discussions between the applicant and the BLM Field Office in Vernal, Utah, regarding this project.

Executive Order 12898

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The EPA has concluded that there may be potential EJ communities proximate to the Authorized Permit Area. The primary potential human health or environmental effects to these communities associated with injection well operations would be to local aquifers that are currently being used or may be used in the future as USDW. The EPA's UIC program authority under the Safe Drinking Water Act is designed to protect USDWs through the regulation of underground injection wells and the EPA has concluded that the specific conditions of the permit would prevent contamination to USDWs, including USDWs currently used, or may be used in the future, by potential communities of EJ concern.

The EPA has also determined that: 1) surface disturbance to install associated infrastructure will occur on privately owned AGC land, 2) construction of associated infrastructure will be of limited duration (1-4 weeks) and 3), that underground injection of AGC's produced mine water would eliminate the discharge of pollutants to surface waters proximate to EJ communities of concern.

In reviewing these findings, the EPA has concluded that this permit action will not have a disproportionately high and adverse human health or environmental effect on potential communities of EJ concern. Nevertheless, the UIC program is conducting enhanced public outreach including publishing a public notice announcement in local newspapers and holding a public hearing if requested.

Part 4. Cumulative Effects Analysis (40 CFR, Part 144.33(c)(3))

EPA has considered the cumulative effects of construction and operation of up to three injection wells and determined that the cumulative effects of this permit action are acceptable to the EPA.

Groundwater Quality

This permit sets requirements to protect USDWs from contamination from the proposed injection activity. The established geologic confining units, well construction requirements, and injection pressure, well testing and plugging and abandonment requirements are designed to prevent fluid movement into USDWs. Based on these requirements and direct knowledge obtained by previous regulation of Bird's Nest disposal wells within the Uinta Basin, the EPA has determined that the proposed underground injection will have no cumulative impact on USDWs.

The EPA considers that the cumulative effect to fluids in the injection zone as a result of this permit decision is likely to be a temporary "freshening," or lowering of the Total Dissolved Solids (TDS) content. Based on experience elsewhere in the Uinta Basin, the EPA expects lower TDS Uinta Formation water to temporarily freshen affected portions of the Bird's Nest Aquifer. Over geologic time scales, the salinity of injection zone water is expected to return to its original salinity as the injected fluid re-establishes geochemical equilibrium with formation fluids the Bird's Nest Formation and as original Bird's Nest water flows back into the permit area following the cessation of injection.

Pressure Effects

The EPA has considered the cumulative effects to injection zone pressure resulting from as many as three Bird's Nest injection wells at this location. The UIC Program limits the injection pressure of wells to pressures below a "fracture parting pressure" or, a threshold pressure below which existing fractures in a geologic injection zone will not be opened or extended in the subsurface, thus preventing any significant fluid movement through potential pathways in the protective confining zone. The assumption is made that the fracture pressure of a low permeability confining zone is higher than the fracture pressure of a higher permeability injection zone. These threshold pressures are determined using injection test data from wells.

The EPA does not anticipate a prolonged change in pressure in the Bird's Nest to occur as a result of this decision and expects that, over years or perhaps 10's of years following cessation of injection, pressures in the Bird's Nest would return to their initial levels. The Bird's Nest has been shown in many locations to be highly conductive of fluids, so much so that the formation is often on such an extreme vacuum so as to be unable to be sufficiently pressured to determine a maximum safe pressure ceiling or fracture pressure. For this reason, the EPA conservatively limits injection into Bird's Nest disposal wells to 300 psig at the surface, which is a comparatively low surface injection pressure to other Uinta Basin formations which may inject at the surface at pressures of 2,000 psig or more.

To date, the EPA has found this 300 psig surface injection pressure limit to be sufficient to dispose of unusually high quantities of water and expects similar performance at AGC's proposed location. Nevertheless, the proposed permit requires initial measurement of the injection zone pressure to determine baseline pressure conditions and that injection pressure be kept beneath a threshold value set

by EPA at all times during operation. The highest possible reservoir pressures would occur at the locations of the injection wells and this is where the EPA directly controls reservoir pressure by limiting injection pressure - the Permittee must continuously monitor injection pressure to ensure that reservoir pressure thresholds are not exceeded. In the event that reservoir pressure was found to pose a risk to USDWs as a cumulative effect of injection under this permit, the EPA would take action to require the Permittee undertake measures to reduce the reservoir pressure to an acceptable level. These actions could include curtailing injection into the Bird's Nest Aquifer entirely.

The applicant has identified one shallow (100 feet) drinking water well in the area and the EPA has determined that there will be no effect on these shallow drinking water aquifers as a result of any change in pressure of the Bird's Nest Aquifer. The shallow aquifers being used as a drinking water resource are hydraulically isolated from waters of the injection zone and EPA's well cementing requirements and injection pressure limitations prevent hydraulic communication between the injection zone and shallower aquifers from occurring.

Part 5. Description of Permitting Approach

EPA Region 8 pioneered the currently proposed area permitting approach in 2012 in Newfield's Monument Butte Oil Field Class II (oil-gas related) project, also located within the Uinta Basin, although the EPA has also previously issued area UIC permits for Class I disposal wells. The primary advantages of an area UIC permit are a decrease in complexity of regulation and a decrease in the back and forth of postal mail where multiple injection wells are involved. In this case, an area UIC permit means that EPA will not need to issue further UIC permits in the event that AGC should need more than a single injection well.

Part 2 of this permit describes how injection wells will be individually authorized by the EPA as they are requested by the Permittee and this process is summarized here:

1. The Permittee must first request and obtain an authorization to construct injection wells from the EPA. Part 2, Section 1 of the permit contains protocols for requesting and obtaining EPA permissions to construct wells.

2. EPA will review the submitted materials and check the information for accuracy. Once EPA has determined that the request to drill and complete the well(s) is in accordance with permit conditions, EPA will notify the Permittee of an approval via written correspondence.

3. Once an injection well is drilled and completed, Permittee will notify the EPA by submitting the materials required in Part 2, Section 2 of the permit within 30 calendar days.

4. Following receipt of the materials required under Part 2, Section 2, the EPA will review the well completion and testing data to ensure the injection well was constructed in accordance with permit conditions. Upon a determination that the Permittee is in compliance with permit conditions, and that the portion of the aquifer receiving the fluid is not a USDW, the EPA will authorize commencement

of injection into the well by written correspondence.

5. Upon commencement of injection, the Permittee must notify the EPA within 30 days that injection has commenced.

6. If EPA determines that a temperature log or radioactive tracer survey is required for the injection well, these must be completed within 180 calendars days of commencement of injection. Once all initial testing data is reviewed and approved by the EPA, the EPA will notify the Permittee via written correspondence and the Permittee may continue to operate the injection well according to the terms and conditions of Area UIC Permit UT52338-00000.

Part 6. Permit Conditions for Area UIC Permit UT52338-00000

Well Construction (40 CFR 146.11 and Part 3 of the permit)
Injection well construction requirements are stipulated in Part 3 of the Permit. The Permit requires that surface and longstring casing be cemented to surface. The EPA does not allow the operation of any injection well that causes the movement of fluid into or between USDWs because this is prohibited in 40 CFR, Part 144.12.

The Permit requires at least one cement barrier, one barrier of steel casing, an annular space to monitor for leaks and an inner steel barrier, between the injectate and all USDWs from the injection zone to the surface. Well construction requirements are depicted in Figure 6 as follows:

1. 20-inch or similar surface casing shall be set in a 26-inch hole, or similar, to a depth of 170 feet or similar and cemented to surface.
2. 9 5/8-inch or similar longstring casing shall be set in a 16-inch hole, or similar, to a depth of +/- 1,450 feet. Centralizers shall be placed on the first, third and every other collar for a total of 10 centralizers. Longstring casing shall be cemented to surface.
3. Complete an 8 ¾-inch or similar open hole into the Bird's Nest injection zone, from base of longstring casing to +/- 1,570 feet.

The EPA will use EPA Region 8 Ground Water Guidance #34 to inform a determination as to the adequacy of the long string casing cement on a well-specific basis. Cement quality for both casing strings will be verified by cement bond or cement evaluation type logs. Remedial cementing may be required for any sections showing inadequate cement bonding.

Injection tubing is required to be installed from a packer up to the surface inside the long string well casing. The packer will be set within the designated confining zone. The tubing and packer are designed to prevent injected fluid from coming in contact with the outermost well casing.

The Tubing-Casing Annulus (TCA) allows the casing, tubing and packer to be monitored continuously for mechanical integrity and will allow the detection of any leaks in the casing, tubing or packer.

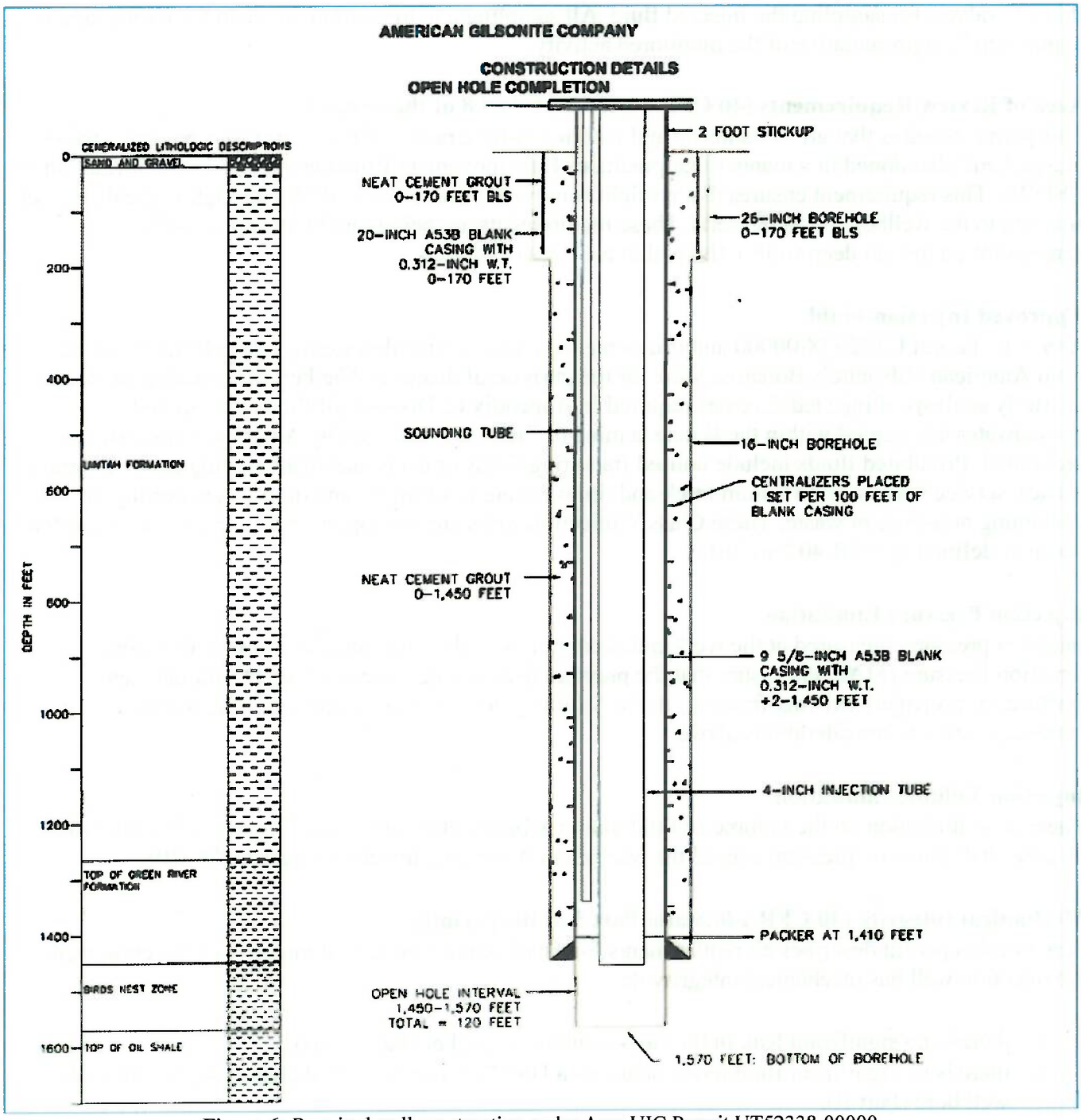


Figure 6: Required well construction under Area UIC Permit UT52338-00000

The Permittee is required to install and maintain wellhead equipment that allows for monitoring pressures and provides access for sampling the injected fluid. Required equipment includes: 1) shut-off valves located at the wellhead on the injection tubing and on the TCA; 2) a flow meter that measures the cumulative volume of injected fluid; 3) fittings or pressure gauges attached to the injection tubing and

the TCA for monitoring the injection and TCA pressures; and 4) a tap on the injection line, isolated by shut-off valves, for sampling the injected fluid. All sampling and measurement taken for monitoring is required to be representative of the monitored activity.

Area of Review Requirements (40 CFR 144.55 and Part 8 of the permit)
This permit requires that all wells inside and within a ¼-mile radius of the permit area be cemented or plugged and abandoned in a manner that precludes fluid movement from the injection zone formation to USDWs. This requirement ensures that no fluid is moved upward into USDWs through vertical channels adjacent to the wellbore of AOR wells. These requirements are being met by the applicant's demonstration that no deep wells exist within the Area of Review.

Approved Injection Fluid
Area UIC Permit UT52338-00000 authorizes the injection of mine dewatering waste fluid produced from American Gilsonite's Bonanza Mine for the purpose of disposal. The Permittee shall provide an a quarterly analysis of injected fluids as required in Appendix C. Disposal of fluids that are not groundwater intercepted within the Bonanza mine or fluids not produced by American Gilsonite are prohibited. Prohibited fluids include unused fracturing fluids or acids, gas plant cooling tower cleaning wastes, service wastes, and vacuum truck and drum rinsate from trucks and drums transporting or containing non-exempt waste. These Class V injection wells are not approved for injection of hazardous waste as defined by CFR 40 Part 261.

Injection Pressure Limitation
Injection pressure, measured at the wellhead, shall not exceed a calculated Maximum Allowable Injection Pressure (MAIP) to assure that the pressure used during injection does not initiate new fractures or propagate existing fractures in the confining zone. Injection pressure is also discussed in cumulative effects considerations above.

Injection Volume Limitation
There is no limitation on the volume of fluid that may be injected into this well, provided further that in no case shall injection pressure exceed the Maximum Allowable Injection Pressure (MAIP).

Mechanical Integrity (40 CFR 146.8 and Part 5 of the permit)
Part 5 of this permit describes all requirements for establishing mechanical integrity of injection wells. An injection well has mechanical integrity if:

1. there is no significant leak in the casing, tubing or packer (Part I); and
2. there is no significant fluid movement into a USDW through vertical channels adjacent to the well bore (Part II).

This permit prohibits injection into any well that lacks mechanical integrity. A demonstration of mechanical integrity includes both internal (Part I) and external (Part II) mechanical integrity as defined above. The methods and frequency of these demonstrations are dependent upon well-specific conditions and are determined by the Director on a well-by-well basis. See Part 5 and Appendix B of the permit for all mechanical integrity testing requirements.

Injection Well Monitoring and Reporting Program (40 CFR 146.13 and Appendix C)
The EPA has applied all Class I Non-hazardous monitoring and reporting requirements at 40 CFR 146.13 to this Class V well. Injection pressure, annulus pressure and flow rate are required to be monitored continuously and the Permittee must analyze a sample of the injected fluid for Total Dissolved Solids (TDS), specific conductivity, pH and specific gravity and report these to the EPA quarterly.

Plugging and Abandonment Requirements (40 CFR 146.10 and Part 12 of the permit)
The plugging and abandonment plan required in Part 12 of this permit accomplishes objectives intended to prevent fluid movement into or between USDWs. Because all casing strings will be cemented to surface, fluid movement behind pipe into or between USDWs is precluded. Cement plugs inside longstring casing isolate the injection zone and prevent fluid from moving into shallower formations through the well bore.

Financial Responsibility Requirements (40 CFR 144.52 and Part 14 of the permit)
The Permittee is required to maintain financial responsibility and resources to close, plug and abandon the underground injection operation in the manner prescribed in Part 14 of the permit. The EPA may, from time to time, require the Permittee to submit an estimate of the resources needed to plug and abandon the injection wells governed under this permit and, if necessary, revise its demonstration of financial responsibility.

At the time of EPA's issuance of the draft permit decision, AGC has not established Financial Responsibility (FR). AGC has been in communication with EPA Region 8 regarding FR and is expected to establish FR for the proposed AGC #1 well. EPA will not issue a final permit decision until the applicant's demonstration of FR for the AGC #1 well is deemed acceptable to the EPA.

Public Notice Announcement for immediate publication in:

The Vernal Express, Vernal
The Uinta Basin Standard, Roosevelt

The U.S. Environmental Protection Agency Region 8 (EPA) intends to issue an Underground Injection Control (UIC) permit-related action, under the authority of the Safe Drinking Water Act and UIC Program regulations, that would authorize American Gilsonite Company to dispose of produced mine dewatering fluid from its Bonanza Gilsonite Mine by underground injection into part of the Green River Formation in Uintah County, Utah. The EPA will be issuing a public notice of this proposed action and requesting comment on its website at https://www.epa.gov/uic/underground-injection-control-epa-region-8-co-mt-nd-sd-ut-and-wy, for a minimum of 30 days. Notification of any extension of the public comment period will appear at the web address only and will not appear in this newspaper. Alternatively, the public may contact Jason Deardorff by email at deardorff.jason@epa.gov, or by phone at 1-800-227-8917 extension 312-6583 or (303) 312-6583, to obtain information about the proposed action, including copies of associated documentation, or to be added to the notification list for any extension of the public comment period and any final EPA decision.

Public Notice to https://www2.epa.gov/uic/underground-injection-control-epa-region-8-co-mt-nd-sd-ut-and-wy upon signature of draft Decision

Title: Draft Area UIC Permit UT52338-00000 for American Gilsonite Company's Bonanza Mine in Uintah County, Utah

Summary: American Gilsonite Company (AGC) operates the Bonanza Gilsonite Mine near the company-owned town of Bonanza, Utah, located approximately 45 miles south of Vernal, Utah. On July 1, 2015, the EPA and AGC executed an Administrative Order on Consent (AOC) to resolve violations of AGC's National Pollutant Discharge Elimination System (NPDES) Permit effluent limitations for discharges to Coyote Wash, a tributary to the White River and part of the Colorado River system. The AOC requires AGC to address ongoing issues and other violations by April 30, 2016.

Pursuant to the AOC, AGC has requested, and the EPA's UIC Program is proposing issuance of, a Class V area UIC permit to dispose of produced mine dewatering waste fluid via underground injection instead of discharging it to surface waters.

The proposed UIC permit would authorize between one and three injection wells disposing fluid waste into the Bird's Nest Aquifer within the Green River Formation, from a single well pad located on privately-owned AGC land. Based on published water quality data and a stratographic test well, the EPA does not anticipate the Bird's Nest Aquifer to be an Underground Source of Drinking Water at the proposed location.

Program/Statute: Safe Drinking Water Act (SDWA); Underground Injection Control (UIC)

Applicant/Respondent(s): American Gilsonite Company

Proposed action: The EPA proposes issuance of Final Area UIC Permit UT52338-00000 to authorize between one and three underground waste disposal wells on privately-owned land within the exterior boundary of the Uintah and Ouray Indian Reservation in Uintah County, Utah.

Permit or application number: UT52338-00000

EPA Contact: Jason Deardorff
U.S. Environmental Protection Agency
Ground Water Program, 8P-W-UIC
1595 Wynkoop Street
Denver, Colorado 80202-1129
Telephone: 303-312-6583 or 1-800-227-8917 ext. 312-6583
deardorff.jason@epa.gov