

**U.S. ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PERMIT: CLASS IID
PERMIT NUMBER NYU119401**

Pursuant to the Underground Injection Control (“UIC”) regulations of the U.S. Environmental Protection Agency (“EPA”) codified at Title 40 of the Code of Federal Regulations (“C.F.R.”), Parts 124, 144, 146, and 147, National Fuel Gas Supply Corporation, 6363 Main Street, Williamsville, New York 14221 (“National Fuel” or “Permittee”) is hereby authorized to continue to operate a Class IID brine disposal well (Allen Whitesell SC-546) upon the condition that the Permittee meets the restrictions set forth herein. The facility is located at 42.08574° latitude and -77.81721° longitude, Hallsport - Independence Road, Independence, New York 14806. Injection is authorized into the Oriskany Sandstone.

All references to Title 40 of the C.F.R. are to all regulations that are in effect on the date that this permit is effective. The following attachments are incorporated into this permit:

- Attachment 1: Plugging and Abandonment Plan
- Attachment 2: Facility Map (Area of Review)
- Attachment 3: Seismicity Response

This permit shall become effective on _____, 2026. This permit and the authorization to inject shall expire at midnight on _____, 2036, unless terminated. It will expire, also, upon delegation of primary enforcement responsibility to the State of New York, unless that State chooses to adopt this permit as a State permit.

Signed this _____ day of _____ 2026.

DRAFT

Javier Laureano, PhD
Director, Water Division
EPA Region 2

PART I **GENERAL PERMIT COMPLIANCE**

A. EFFECT OF PERMIT

The Permittee can engage in underground injection in accordance with the conditions of this permit. Notwithstanding any other provision of this permit, the Permittee authorized by this permit shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water ("USDWs"), if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 C.F.R. §§141 and 142 or may otherwise adversely affect the health of persons. Any underground injection activity not specifically authorized in this permit is prohibited. Compliance with this permit during its term constitutes compliance with Part C of the Safe Drinking Water Act ("SDWA"). Such compliance does not constitute a defense to any action brought for violation of Section 1431 of the SDWA, or any other common or statutory law or regulation. Pursuant to 40 C.F.R. §§144.35(b) and 144.35(c), 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 State or local law or regulations. Nothing in this permit shall be construed to relieve the Permittee of any duties under applicable regulations.

B. PERMIT ACTIONS

1. Modification, Revocation, Reissuance and Termination

The Director may, for cause or upon request from the Permittee, modify, or revoke and reissue this permit in accordance with 40 C.F.R. §§144.12 and 144.39. Additionally, the Director may, for cause, terminate this permit in accordance with 40 C.F.R. §144.40. The permit is subject to minor modifications for cause as specified in 40 C.F.R. §144.41. The filing of a request for a permit modification, or revocation and reissuance, or 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 permit condition.

2. Transfer of Permits

This permit is not transferable to any person except in accordance with 40 C.F.R. §144.38.

C. 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.

D. CONFIDENTIALITY

In accordance with 40 C.F.R. §§2.203(b) and 144.5, any information submitted to 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, 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 C.F.R. §2. Pursuant to 40 C.F.R. §144.5(b), claims of confidentiality for the following information will be denied:

- 1) The name and address of the Permittee.
- 2) Information which deals with the existence, absence or level of contaminants in drinking water.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply

Pursuant to 40 C.F.R. §144.51(a), the Permittee shall comply with all applicable UIC Program regulations and conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with 40 C.F.R. §144.34. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. Such noncompliance may also be grounds for enforcement action under the Resource Conservation and Recovery Act ("RCRA").

2. Penalties for Violations of Permit Conditions

Any person who violates a permit requirement is subject to civil penalties, fines, and other enforcement action under the SDWA and may be subject to such actions pursuant to RCRA. Any person who willfully violates permit conditions may be subject to criminal prosecution.

3. Continuation of Expiring Permits

a. **Duty to Reapply:** If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must submit a complete application for a new permit at least 180 days before this permit expires.

b. **Permit Extensions:** The conditions of an expired permit may continue in force only in accordance with 5 United States Code ("U.S.C.") §558(c) and 40 C.F.R. §144.37.

c. **Effect:** Permits continued under 5 U.S.C. §558(c) and 40 C.F.R. §144.37 remain fully effective and enforceable.

d. **Enforcement:** Pursuant to 40 C.F.R. §144.37(c), when the Permittee is not in compliance with the conditions of the expiring or expired permit, the Director may choose to do any or all of the following:

- (1) Initiate enforcement action based upon the permit which has been continued;

(2) Issue a notice of intent to deny the new permit. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;

(3) Issue a new permit under 40 C.F.R. §124 with appropriate conditions; or

(4) Take other actions authorized by UIC regulations.

e. State Continuation: Pursuant to 40 C.F.R. §144.37(d), an EPA-issued permit does not continue in force beyond its expiration date under Federal law if at that time a State has primary enforcement authority under the SDWA. A State authorized to administer the UIC program may continue either EPA- or State-issued permits until the effective date of the new permits, if State law allows. Otherwise, the facility or activity is operating without a permit from the time of expiration of the old permit to the effective date of the new State-issued permit.

4. Need to Halt or Reduce Activity not a Defense

Pursuant to 40 C.F.R. §144.51(c), it shall not be a defense, for a Permittee in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate

Pursuant to 40 C.F.R. §144.51(d), the Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance

Pursuant to 40 C.F.R. §144.51(e), the Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance include 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.

7. Duty to Provide Information

Pursuant to 40 C.F.R. §144.51(h), the Permittee shall furnish to the Director, within a time specified, any information that 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.

8. Inspection and Entry

Pursuant to 40 C.F.R. §144.51(i), the Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

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

9. Records

- a. Pursuant to 40 C.F.R. §144.51(j)(2)(i), the Permittee shall retain records and all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit, for a period of at least three years from the date of the sample, measurement, or report.
- b. Pursuant to 40 C.F.R. §144.51(j)(2)(i), the Permittee shall maintain records of all data required to complete the permit application form for this permit and any supplemental information submitted pursuant to 40 C.F.R. §144.31 for a period of at least three years from the date the application was signed. These periods may be extended by request of the Director at any time.
- c. Pursuant to 40 C.F.R. §144.51(j)(2)(ii), the Permittee shall retain records concerning the nature and composition of all injected fluids until three years after the completion of plugging and abandonment which has been carried out in accordance with Attachment 1 and is consistent with 40 C.F.R. §146.10.
- d. Pursuant to 40 C.F.R. §144.51(j)(2)(ii), the Permittee shall continue to retain such records after the retention period specified by Paragraphs 9a to 9c above, unless he delivers the records to the Director or obtains written approval from the Director to discard the records.
- e. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The name(s) of individual(s) who performed the sampling or measurements;
 - (3) A precise description of both sampling methodology and the handling (custody) of samples;
 - (4) The date(s) analyses were performed;
 - (5) The name(s) of individual(s) who performed the analyses;
 - (6) The analytical techniques or methods used; and
 - (7) The results of such analyses.

10. Monitoring

Pursuant to 40 C.F.R. §144.51(j), samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Monitoring results shall be reported at the intervals specified in Part II, Section D of this permit. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in Table I of 40 C.F.R. §136.3 or in Appendix III of 40 C.F.R. §261 or in certain circumstances by other methods that have been approved by the Director.

11. Signatory Requirements

All reports or other information, required to be submitted by this permit or requested by the Director, shall be signed and certified in accordance with 40 C.F.R. §144.32.

12. Reporting Requirements

a. **Planned Changes:** Pursuant to 40 C.F.R. §144.51(l)(1), the Permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility relative to injection activity.

b. **Anticipated Noncompliance:** Pursuant to 40 C.F.R. §144.51(l)(2), the Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

c. **Compliance Schedules:** Pursuant to 40 C.F.R. §144.51(l)(5), 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 days following each schedule date.

d. **Twenty-four Hour Reporting:**

(1) Pursuant to 40 C.F.R. §144.51(l)(6), the Permittee shall report to the Director any noncompliance that may endanger health or the environment. Any such information shall be provided orally and/or by e-mail within 24 hours from the time the Permittee becomes aware of the circumstances. Such reports shall include, but not be limited to, the following information:

(a) Any monitoring or other information that indicates that any contaminant may cause an endangerment to an underground source of drinking water; and

(b) Any noncompliance with a permit condition, or malfunction of the injection system, that may cause fluid migration into or between underground sources of drinking water so as to cause a violation of primary drinking water regulations under 40 C.F.R. §§141 and 142 or otherwise adversely affect the health of persons.

e. **Five Day Written Reporting:** Pursuant to 40 C.F.R. §144.51(l)(6), for any noncompliance subject to the reporting requirements in Paragraph 12.d.(1) above, a written submission shall also be provided within five 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 steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

f. **Other Noncompliance:** Pursuant to 40 C.F.R. §144.51(l)(7), the Permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph 12.e above.

g. **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 or NRC@uscg.mil.

h. **Other Information:** Pursuant to 40 C.F.R. §144.51(l)(8), when the Permittee becomes aware that he 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 submit such facts or information within 10 days.

i. Report on Permit Review: Within 30 days of the effective date of this permit, the Permittee shall report to the Director that he has read and is personally familiar with all terms and conditions of this permit.

j. Report Submittal:

(1) Oral/e-mail reporting required under this Section shall be provided to:

(a) E-mail to: region2_uic@epa.gov

(b) Harper Stanfield: stanfield.harper@epa.gov; (212) 637-3728 and/or

(c) Dorina Aliu, Supervisor, Drinking Water and Ground Water Protection

Section: aliu.dorina@epa.gov; (212) 637-3959

F. CONVERSION OR PLUGGING AND ABANDONMENT

1. Notice of Conversion or Plugging and Abandonment

Pursuant to 40 C.F.R. §144.51(n), the Permittee shall notify the Director no later than 45 days before the conversion or abandonment of the well subject to the provisions of this permit.

2. Plugging and Abandonment

The Permittee shall plug and abandon the well subject to the provisions of this permit consistent with 40 C.F.R. §146.10 and the Plugging and Abandonment Plan, which is hereby incorporated into this permit as Attachment 1. Additional federal, state or local laws and regulations may also apply.

Pursuant to 40 C.F.R. §144.51(p), within 60 days after plugging the well, or by the time of the next quarterly report after plugging the well (whichever is earlier), the Permittee shall submit a report to the Director with EPA Form 7520-19, Well Rework Record, Plugging and Abandonment Plan, or Plugging and Abandonment Affidavit. The report shall be certified as accurate by the person who performed the plugging operation and shall consist of either:

- a. A statement that the well was plugged in accordance with the plan in Attachment 1; or
- b. If the actual plugging differed from the approved plan, a statement detailing the actual plugging and why the Director should approve such deviation. Any deviation, that may endanger USDWs, from a previously approved plan is cause for the Director to require the operator to re-plug the well.

3. Inactive Wells

Pursuant to 40 C.F.R. §144.52(a)(6), after a cessation of injection for two years the Permittee shall plug and abandon the well in accordance with Paragraph 2 above and Attachment 1 unless:

- a. Notice is provided to the Director; and
- b. The Notice describes the actions or procedures that the Permittee will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived in writing by the Director; and
- c. The Director determines that the actions and procedures are satisfactory.

The Permittee of a well that has been temporarily abandoned shall notify the Director at least 30 days prior to resuming operation of the well.

G. MECHANICAL INTEGRITY

1. Standards

All injection well(s) must have and maintain mechanical integrity consistent with 40 C.F.R. §146.8.

2. Prohibition Without Demonstration

The Permittee shall not inject into the well after the effective date of this permit if more than 5 years has elapsed since the last successful demonstration that the well covered by this permit has mechanical integrity in accordance with 40 C.F.R. §146.8. Injection shall not occur until the well has been tested for mechanical integrity pursuant to the requirements in Part II Section A.3 of this permit, the results have been submitted to the Director and the Permittee has received written notice from the Director that such demonstration is satisfactory. For this Permittee, the last successful mechanical integrity demonstration for the well covered by this permit was on August 27, 2025.

3. Subsequent Mechanical Integrity Demonstrations

A demonstration of mechanical integrity in accordance with Part II Section A.3 of this permit and 40 C.F.R. §146.8 shall be made no later than five years from the date of the last approved demonstration. Mechanical integrity shall also be demonstrated after any activity which affects the tubing, packer, or casing (e.g., tubing is removed from the well, the packer is reset), or when a loss of mechanical integrity appears to arise during operation. The Permittee shall notify the Director at least 30 days prior to any mechanical integrity test (“MIT”). The Director may allow a shorter notification period if it would be sufficient to enable EPA to witness the MIT or EPA declines to witness the test. The Permittee shall report the results of a mechanical integrity demonstration within 90 days after completion.

4. Loss of Mechanical Integrity

If the Permittee or the Director finds that the well fails to demonstrate mechanical integrity during a test, or a loss of mechanical integrity as defined by 40 C.F.R. §146.8 becomes evident during operation, the operation shall be halted immediately, and the Permittee shall notify the Director within 24 hours in accordance with Part I Section E.12.d of this permit. The Permittee shall either plug and abandon the well in accordance with the requirements of this permit or repair the well and demonstrate that the mechanical integrity of the well has been restored within 180 days after the date that the loss of mechanical integrity was detected, or on a schedule approved by the Director. Operation shall not be resumed until the Director gives approval to recommence injection.

5. Mechanical Integrity Request from Director

The Director may, by written notice, require the Permittee to demonstrate mechanical integrity at any time.

H. CORRECTIVE ACTION REQUIREMENTS

1. Corrective Action Plan

Within the Area of Review no wells were identified that are improperly sealed, completed or abandoned. Therefore, no Corrective Action Plan was required from Permittee.

2. Upward Fluid Migration

Should upward fluid migration resulting from the injection activity authorized by this permit occur through any well, including but not limited to any previously unknown well and any known well previously determined to be properly sealed, completed or abandoned, all injection activity shall cease until all repairs necessary to prevent the upward fluid migration are completed. Any such upward fluid migration is a violation of the provisions of this permit and is subject to the reporting requirements of Part I Section E.12. Injection activities shall not resume until the Director has determined that the repairs are satisfactory and approves the resumption of injection in writing.

I. FINANCIAL RESPONSIBILITY

1. Financial Responsibility

The Permittee is required to maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner consistent with the UIC regulations (40 C.F.R. §144.52(a)(7)). If the acceptability of the financial demonstration should change, the Permittee shall provide advanced notification to the Director. The Permittee shall not substitute an alternative demonstration of financial responsibility from that which the Director has approved, unless it has previously submitted evidence of that alternative demonstration to the Director and the Director notifies it that the alternative demonstration of financial responsibility is acceptable. The financial responsibility mechanism shall be updated annually and upon request of the Director.

2. Insolvency

In the event of:

- a. The bankruptcy of the trustee or the institution issuing the financial mechanism; or
- b. The suspension or revocation of the authority of the trustee institution to act as trustee;

or

- c. The loss of authority of the institution issuing the financial mechanism to issue such an instrument, the Permittee must notify the Director within 10 business days. The owner or operator must establish other financial assurance or liability coverage acceptable to the Director within 60 days after such an event. An owner or operator must also notify the Director by certified mail of the

commencement of voluntary or involuntary proceedings under U.S.C Title 11 (Bankruptcy, naming the owner or operator as debtor, within 10 business days after the commencement of the proceedings. A guarantor or a corporate guarantee must make such a notification if it is named as debtor, as required under the terms of the guarantee.

J. APPEAL OF PERMIT

1. General

Pursuant to 40 C.F.R. §124.19(a), any person including the Permittee may file a petition with the Clerk of the Environmental Appeals Board, in accordance with filing and service requirements at 40 C.F.R. §124.19(i), to review this permit. This request must be made, in writing, within 30 days after the Regional Administrator or his/her delegate has served notice of issuance of the final permit decision. A petition is filed when it is received by the Clerk of the Environmental Appeals Board. The Permittee may appeal this permit based upon the following conditions:

- a. If the Permittee supplied comments on the draft of this permit or participated in a public hearing concerning this permit, it may petition the Environmental Appeals Board to review any condition of this permit.
- b. If the Permittee failed to supply public comments and failed to participate in a public hearing concerning this permit, it may petition for an administrative review, but only to the extent that the final permit conditions reflect changes from the draft permit.

2. Contents of Appeal

Pursuant to 40 C.F.R. §124.19(a)(4), a petition shall:

- a. Follow the content and format requirements at 40 C.F.R. §124.19(d).
- b. Identify the contested condition or other specific challenge to the permit decision.
- c. Clearly set forth, with legal and factual support, Permittee's contentions for why the permit condition should be reviewed.
- d. Demonstrate that each challenge to the permit decision is based on either:
 - (1) A finding or fact or conclusion of law which is clearly erroneous, or
 - (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.
- e. Include a demonstration that either:
 - (1) Each issue being raised in the petition was raised during the public comment period (including any public hearing) to the extent required by 40 C.F.R. §124.13 by providing a specific citation or appropriate reference to the administrative record (e.g., by including the document name and page number), or
 - (2) For each issue raised in the petition that was not raised previously, an explanation of why such issues were not required, pursuant to 40 C.F.R. §124.13, to be raised during the public comment period.
- f. For each issue raised in the petition that the Regional Administrator addressed in the response to comments document issued pursuant to 40 C.F.R. §124.17, the petitioner must provide a citation to the relevant comment and response and explain why either:

or

- (1) The Regional Administrator's response to the comment was clearly erroneous,
- (2) The issue otherwise warrants review.

3. Prerequisite to Judicial Review

A petition to the Environmental Appeals Board, as described above, is, pursuant to 5 U.S.C. §704, a prerequisite to the seeking of judicial review of any final EPA action regarding this permit. For purposes of a judicial review under the UIC program, final EPA action occurs when a final permit decision is issued by EPA and EPA review procedures as stated in Section J.2 above are exhausted. Final permit decisions shall be issued by the Regional Administrator:

- a. When the Environmental Appeals Board issues notice to the Permittee that review has been denied;
- b. When the Environmental Appeals Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or
- c. Upon the completion of remand proceedings if the proceedings are remanded, unless the Environmental Appeals Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

K. DEFINITIONS

1. Abandoned Well

Abandoned Well means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

2. Application

Application means the EPA standard national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in approved States, including any approved modifications or revisions.

3. Aquifer

Aquifer means a geological "formation," group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

4. Casing

Casing means a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous formations, or to prevent water, gas, or other fluid from entering or leaving the hole.

5. Cementing

Cementing means the operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.

6. Class II Well

Class II Well means a well which injects fluids:

- a. Which are brought to the surface in connection with conventional oil or natural gas production or natural gas storage operations and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection; or
- b. For enhanced recovery of oil or natural gas; or
- c. For storage of hydrocarbons which are liquid at standard temperature and pressure.

7. Compliance Schedule

Compliance Schedule means a schedule or remedial measures included in a "permit" including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the appropriate Act and regulations.

8. Composite Sample

Composite Sample means a combination of not less than 8 portions, of at least 100 milliliters, collected over the full time period specified in this permit. The composite sample must be flow proportioned by either time interval between each aliquot or by volume as it relates to effluent flow at the time of sampling or total flow since collection of the previous aliquot. Aliquots may be collected manually or automatically.

9. Confining Zone

Confining Zone means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone.

10. Contaminant

Contaminant means any physical, chemical, biological, or radiological substance or matter in water.

11. Daily Average of Parameter Monitored Continuously

Daily Average of Parameter Monitored Continuously means the sum of values observed and recorded periodically as specified in this permit, divided by the total number of values observed and recorded during that day.

12. Daily Average of Parameters Not Monitored Continuously

Daily Average of Parameters Not Monitored Continuously means the sum of all daily observed and recorded values divided by the total number of values observed and recorded during that day.

13. Daily or Monthly Maximum Value

Daily or Monthly Maximum Value means the highest value recorded during the day or month, respectively. For continuously monitored parameters the highest value recorded is the highest instantaneous value for the continuous monitoring recording.

14. Daily or Monthly Minimum Value

Daily or Monthly Minimum Value means the lowest value recorded during the day or month, respectively. For continuously monitored parameters, the lowest value recorded is the lowest instantaneous value from the continuous monitoring recording.

15. Director

Director means the Director of the Water Division, EPA Region 2, unless at some time in the future the State receives authority to administer the UIC program and assumes jurisdiction over the permit; at which time, the Director of the State program receiving authorization becomes the Director.

16. Drilling Mud

Drilling Mud means a heavy suspension used in drilling an "injection well," introduced down the drill pipe and through the drill bit.

17. Exempted Aquifer

Exempted Aquifer means an "aquifer" or its portion that meets the criteria in the definition of "underground source of drinking water" but which has been exempted according to the procedures in 40 C.F.R. §144.7.

18. Facility or Activity

Facility or Activity means any UIC "injection wells", or any other facility or activity that is subject to regulation under the UIC program.

19. Fault

Fault means a surface or zone of rock fracture along which there has been displacement.

20. Flow Rate

Flow Rate means the volume per unit time given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine or passes along a conduit or channel.

21. Fluid

Fluid means any material or substance which flows or moves whether in a semi-solid, liquid, sludge, gas, or any other form or state.

22. Formation

Formation means a body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity which is prevailingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

23. Formation Fluid

Formation Fluid means "fluid" present in a "formation" under natural conditions as opposed to introduced fluids, such as "drilling mud."

24. GPM

GPM means gallons per minute.

25. Grab Sample

Grab Sample means a single portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the monitored activity.

26. Injection Tubing or Tubing

Injection Tubing or Tubing means a system of pipes, of appropriate material, inserted into the well through the casing to convey the injection fluid to the injection zone and to prevent casing degradation.

27. Injection Zone

Injection Zone means a geological "formation," group of formations, or part of a formation receiving fluids through a well.

28. Monthly Average of Parameters Monitored Continuously

Monthly Average of Parameters Monitored Continuously means the sum of all daily observed and recorded values divided by the total number of values observed and recorded during that month.

29. Monthly Average of Parameters Monitored Daily

Monthly Average of Parameters Monitored Daily means the sum of all daily observed and recorded values divided by the total number of values observed and recorded during that month.

30. Owner or Operator

Owner or Operator means the owner or operator of any "facility or activity" subject to regulation under the UIC program.

31. Packer

Packer means a device lowered into a well to produce a fluid tight seal.

32. Person

Person means an individual, association, partnership, corporation, municipality, State, Federal or Tribal agency, or an agent or employee thereof.

33. Plugging

Plugging means the act or process of stopping the flow of water, oil, or gas into or out of a formation through a borehole or well penetrating that formation.

34. Pressure

Pressure means the total load or force per unit area acting on a surface.

35. PSIA

PSIA means pound per square inch absolute.

36. PSIG

PSIG means pounds per square inch gauge.

37. SDWA

SDWA means the Safe Drinking Water Act ~Pub. L. 93-523, as amended.

38. Site

Site means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

39. Surface Casing

Surface Casing means the second string of well casing to be installed in the well, to at least below the base of all underground sources of drinking water, as a means of protection from leaks and operational damages.

40. Total Dissolved Solids (TDS)

Total Dissolved Solids (TDS) means the total dissolved (filterable) solids as determined by use of the method specified in 40 C.F.R. §136.

41. UIC

UIC means the Underground Injection Control Program under Part C of the SDWA, including an "approved State program."

42. Underground Injection

Underground Injection means a "well injection."

43. Underground Source of Drinking Water (USDW)

Underground Source of Drinking Water (USDW) means an aquifer or its portion:

- a. Which supplies any public water system; or
- b. Which contains a sufficient quantity of ground water to supply a public water system:

and

- 1) Currently supplies drinking water for human consumption; or
- 2) Contains fewer than 10,000 mg/l total dissolved solids; and
- 3) Which is not an exempted aquifer.

44. Well

Well means a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.

45. Well Injection

Well Injection means the subsurface emplacement of fluids through a well.

46. Well Monitoring

Well Monitoring means the measurement, by on-site instruments or laboratory methods, of the quality of water in a well.

47. Well Plug

Well Plug means a watertight and gas tight seal installed in a borehole or well to prevent movement of fluids.

48. Well Stimulation

Well Stimulation means several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected, thus making it possible for wastewater to move more readily into the formation, and includes (1) surging, (2) jetting, (3) blasting (4) acidizing, and (5) hydraulic fracturing.

PART II

WELL-SPECIFIC CONDITIONS FOR UIC PERMITS

A. Construction Requirements

1. Notwithstanding any other provision of this permit, the injection well shall inject only into a formation(s) which is separated from any USDW by a confining zone that is free of known open faults or fractures within the Area of Review.

2. Casing and Cementing

Pursuant to 40 C.F.R. §144.3, the Allen Whitesell SC-546 represents a new brine disposal well. The 9 5/8 inch surface casing is set at 490 feet and cemented to surface, and 7 inch long string casing is set at 4,775 feet and cemented to surface as per the permit application. As per permit application specifications, 2 3/8 inch tubing is set on a packer at a depth of 4,600 feet. The well is cased to prevent the movement of fluids into or between USDWs. The casing and cement used in the rework of the well shall be designed for the life expectancy of the well.

3. Mechanical Integrity

At least once every 5 years, the well shall be pressure tested. The Permittee shall cause all gauges used in mechanical integrity demonstrations to be calibrated prior to the demonstration. Permittee shall pressure up to no less than 200 psig on the annulus (space between the 2 7/8 inch tubing and the 7 inch casing) and maintain and monitor with a one pen pressure recorder for one hour. The well will fail to demonstrate mechanical integrity by this Standard Annular Pressure Test (SAPT) if the pressure declines greater than 5% during the one hour pressure recording time interval. Following the test, the annulus pressure shall be reduced to approximately 50 psig. A two-pen pressure recorder will continuously monitor and record the surface tubing and annular pressure during the life of the well. During injection the annulus pressure shall be maintained at a pressure between 25 and 200 psig.

In addition to the pressure test, Permittee has submitted a Cement Bond Log and cementing records to verify that there is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.

B. Operating Requirements

1. Injection Formation

Injection shall be limited to the Oriskany Sandstone, which is approximately 34 feet thick. The top of the Oriskany Sandstone lies at a depth of 4,678 feet below the surface. The formation brine has a Specific Gravity of 1.24. The fracture pressure of the Oriskany Sandstone injection zone was determined to be 466 psig as measured at the wellhead for injection of fresh water (injectate specific gravity 1.0). The fracture pressure determinations are included in the permit application.

2. Injection Pressure Limitations

Maximum injection pressure at the wellhead shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the confining zone or cause the migration of injection or formation fluids into an underground source of drinking water. Injection pressure, measured at the surface with a full column of brine in the well, shall not exceed a maximum of 10 psig.

3. Injection Volume Limitation

Injection volume shall be limited to a maximum of 3,500 bbls per day.

4. Additional Injection Limitations

Injection between the outermost casing protecting USDWs and the well bore is prohibited, as is injection into any USDW. The Permittee is authorized to inject:

- a. brine produced from wells:
 - (1) owned and/or operated by Permittee,
 - (2) utilized for either:
 - (a) gas storage activities in the Beech Hill and Independence gas storage fields or
 - (b) for natural gas production and
 - (3) completed in the Oriskany Formation.
- b. a maximum of 2,000 gallons of hydrochloric acid solution once per calendar year as necessary to maintain the injection well.

C. Monitoring Requirements

1. Injection Fluids

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The Permittee shall monitor:

Parameters	Frequency	Sample type
Injection Pressure	Continuous	Recorder
Annular Pressure	Continuous	Recorder
Injection Volume	Daily	Measured
Specific Gravity	Monthly	Composite
Temperature	Daily	Grab
Chlorides	Monthly	Composite
Specific Conductance	Continuous	Recorder
pH	Continuous	Recorder
Sodium	Monthly	Composite

Once per calendar year, a grab sample of injectate, prior to any chemical addition, to be disposed of into the SC-546 disposal well, shall be collected and analyzed for EPA Priority Pollutants, Total Organic Carbon, Total Organic Halogens, pH and Conductivity.

FAIL SAFE SHUTDOWN - AUTOMATIC TELEMETRIC ALARM MECHANISM

The facility shall be equipped with continuous pH and conductivity meters which will automatically shut down the injection system if brine characteristics vary outside of the predetermined ranges for these parameters. In the event of an automatic shut down under these conditions, a minimum of two one-liter samples of the brine being injected shall be collected for possible analyses. Immediate notification of the automatic shutdown shall be provided to the EPA Region 2 office. Injection operations shall not resume until EPA approval is obtained. The operating ranges approved by EPA for the continuous pH and conductivity meters serving the injection facility are as follows: pH: 4.0-6.0 Conductivity: 100,000-1,000,000 μ hos/cm.

2. Monitoring Wells

Once per calendar quarter, samples shall be collected from Monitoring Wells 2, 4 and 5, as designated in the permit application. The samples shall be analyzed for conductivity and chlorides and the results shall be submitted as part of the next quarterly report pursuant to Part II Section D.1 of this permit.

D. **Reporting Requirements**

1. Quarterly Reports

Permittee shall submit quarterly reports to the Director containing the results of monitoring well data specified in Part II Section C of this Permit. Quarterly reports shall be submitted no later than January 31, April 30, July 31 and October 31. The reports shall be emailed to: region2_uic@epa.gov.

A signed certification shall accompany and be attached to the submitted monitoring reports. The signed certification shall include the following statement:

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 C.F.R. §144.32)

2. Reports on Well Tests and Workovers

In the first quarterly report after the activity occurs, Permittee shall report to the Director the results of the following:

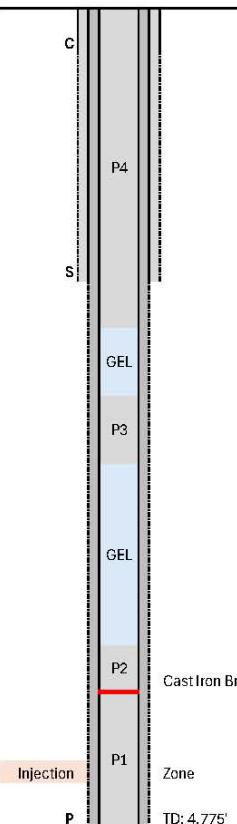
- a. Mechanical integrity tests (if not previously submitted); and

- b. Volume of acid solution injected as authorized by Part II Section B.4.b of this permit; and
- c. Any repair work performed on or plugging and abandonment of the well during the quarter. Well Rework Record, Plugging and Abandonment Plan, or Plugging and Abandonment Affidavit (EPA Form 7520-19) shall be submitted; and
- d. Any additional wells within the area of review that have not previously been submitted. For those wells that penetrate the injection zone, a well construction diagram, cement records and cement bond logs are also required; and
- e. Other tests required by this permit.

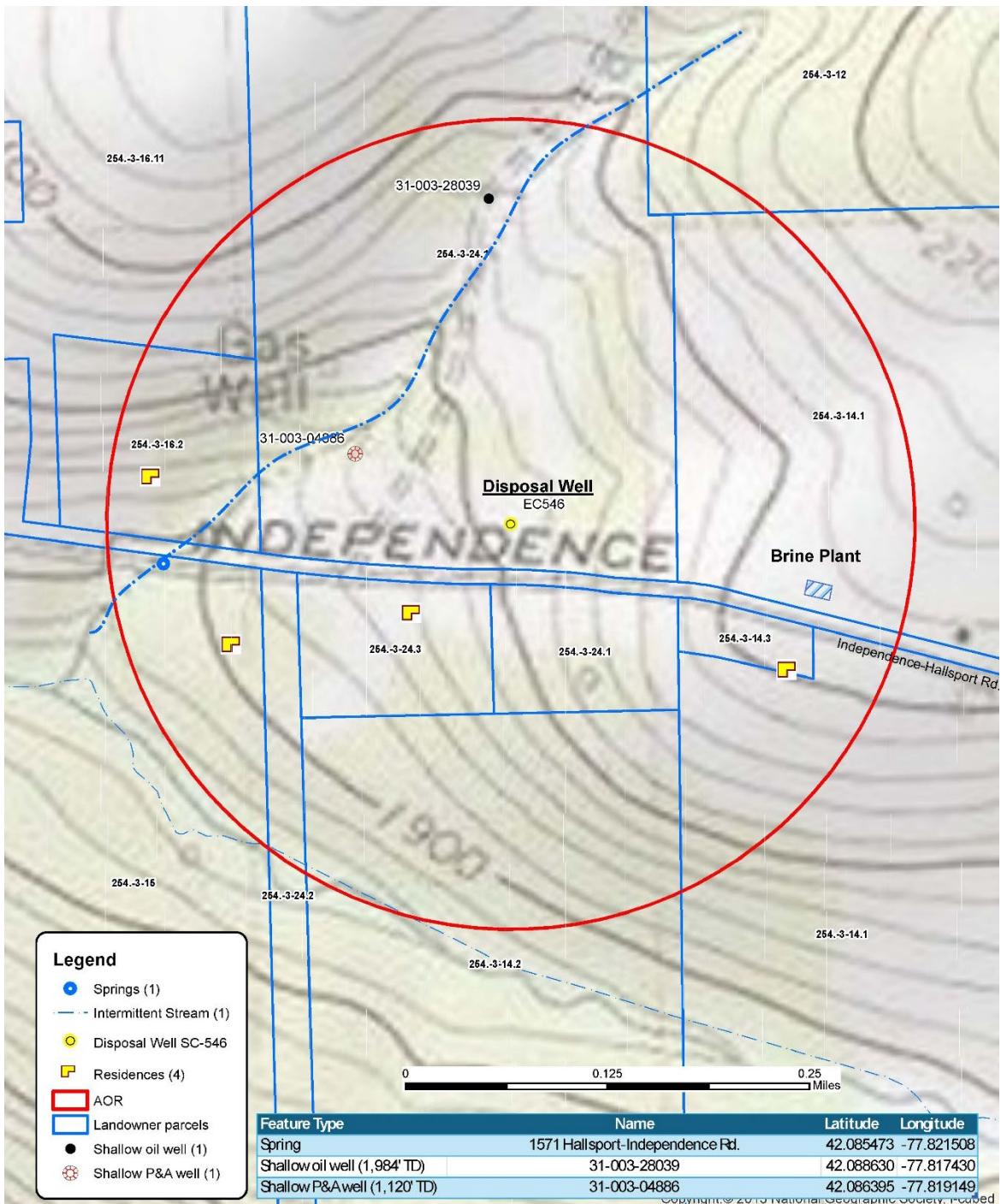
Attachment #1
Plugging and Abandonment Plan

OMB No. 2040-0042 Approval Expires 12/31/2026 United States Environmental Protection Agency																																																					
WELL REWORK RECORD, PLUGGING AND ABANDONMENT PLAN, OR PLUGGING AND ABANDONMENT AFFIDAVIT																																																					
Permittee Name and Address, Phone Number and/or Email NATIONAL FUEL GAS SUPPLY CORPORATION 6363 MAIN STREET, WILLIAMSVILLE, NY 14221 716-857-7000																																																					
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EPA Form 7520-19 (Rev. 12-23)

Plugging Schematic																																																						
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Attachment 2
Facility Map (Area of Review)



Attachment #3
Seismicity Response

Prior to commencing injection, the Permittee shall subscribe to the U.S. Geological Survey Earthquake Notification Service to receive notification of seismic events within 100 kilometers (62 miles) of the well. The midpoint between the surface-hole and bottom-hole locations shall be used as the center of the circle. The appropriate response to seismic events depends on the Moment Magnitude (M_w) of the seismic event according to the following protocol.

As described below, after a seismic event has been identified, the Permittee must make a decision regarding the level of impact a given event could have on injection site operations, whether a response is required, and what the appropriate response will be. This decision and response framework will rely on existing seismic monitoring networks coordinated by the U.S. Geological Survey, followed by a technical evaluation of the injection well by the Permittee in order to reduce the likelihood of injectate leaving the injection zone. Identification of events with sufficient Moment Magnitude (M_w) that are located within 100 km (62.14 miles) of the injection site can be accomplished through the U.S. Geological Survey's web site. In the case of a well with a deviated or horizontal component, the midpoint between the surface-hole location and the bottom-hole location should be used as the center of the circle. The operational protocol for responding to events will follow a "traffic light" approach (modified after Zoback, 2012; National Research Council, 2013) that uses three operational states:

GREEN: Seismic events not recorded or M_w < 3.5: Continue normal well injection operations.

YELLOW: Seismic events with Moment Magnitude 3.5 = M_w < 5.0 are observed within a 100 km (62.14 miles) radius of the site: Injection operations must cease. The Permittee will notify the Director of any such event within 24 hours, providing information on the status of the injection site. Within 45 days, the Permittee will evaluate the mechanical integrity of the internal well systems (Part 1) via a well test approved by the Director. If the well fails the mechanical integrity test or the Permittee identifies any problems with the system that might impact USDWs, the injection well must remain shut-in and the Permittee must submit a written report as soon as possible but no later than five days from the time the Permittee becomes aware of the circumstances. The written submittal shall contain a description of the noncompliance and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. Upon completion of the steps to ensure mechanical integrity and the subsequent mechanical integrity demonstration, the Permittee must submit the results and any other required documentation to EPA's office for final written approval. If the well has mechanical integrity and no problems that might impact USDWs are detected, the Permittee must provide proof of those findings to the Director. Injection operations shall not be resumed until the Director gives written approval to recommence injection.

RED: Moment Magnitude 5.0 or greater seismic events are observed within a 100 km (62.14 miles) radius of the site: Injection operations must cease. The Permittee will notify the Director of any such event within 24 hours, providing information on the status of the injection site. Within 45 days the Permittee will evaluate the integrity of the internal well systems by performing a Part 1 well test approved by the Director, as well as perform an evaluation of the external mechanical integrity of the

well pursuant (Part 2) to 40 C.F.R. §146.8. If the well fails either mechanical integrity test or the Permittee identifies any problems with the system that might impact a USDW, the injection well must remain shut-in and the Permittee must submit a written report as soon as possible but no later than five days from the time the Permittee becomes aware of the circumstances. The written submittal shall contain a description of the noncompliance and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. Upon completion of the steps to ensure mechanical integrity and the subsequent mechanical integrity demonstration, the Permittee must submit the results and any other required documentation to our office for final approval. Injection operations shall not be resumed until the Director gives written approval to recommence injection.