



west virginia department of environmental protection

Office of Oil and Gas
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Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

January 16, 2018

UIC Permit

NYTIS EXPLORATION COMPANY, LLC
2480 FORTUNE DRIVE, SUITE 300

LEXINGTON, KY 40509

Re: Permit approval for Underground Injection Control (UIC) Permit # 2D10901433002
Date Issued: January 16, 2018

Enclosed you will find the above referenced Underground Injection Control Permit. This permit will expire in five (5) years from the date of issuance.

Be advised that all conditions established by this Permit either expressly or incorporated by reference, must be strictly adhered to. All monitoring forms shall be submitted to the Office of Oil and Gas in the matter and frequency prescribed. The monitoring forms will be compared with the scope of permitted activity to verify compliance.

Please review the permit carefully and be aware of all permit conditions. Compliance with all permit conditions will be strictly enforced.

The operation of this injection well facility in general, including maintenance of all related surface equipment, shall be conducted so as to preclude any unlawful discharge.

James A. Martin
Chief
Office of Oil and Gas

Enclosures as stated

Promoting a healthy environment.

UNDERGROUND INJECTION CONTROL PERMIT

For

Nytis Exploration Company, LLC

Permit Number 2D10901433002

(LC-19)

January 16, 2018

**AUTHORIZATION TO OPERATE AN
UNDERGROUND INJECTION CONTROL
(UIC) CLASS II INJECTION WELL
PERMIT NUMBER # UIC 2D10901433002**

In compliance with provisions of the West Virginia Code, Chapter 22, Article 6, Article 11 and Article 12, as well as Legislative Rules, Title 47, Series 13, Series 55, Series 58, and Title 35 Series 1 and Series 4.

PERMITTEE / OPERATOR

NAME **Nytis Exploration Company, LLC.**
ADDRESS 2480 Fortune Drive, Suite 300
Lexington, KY 40509

Non-Commercial
FACILITY TYPE: Waste Disposal
WELL API # **47-109-01433**
WELL NAME: LC-19

is authorized by this permit to inject Class II fluids that are brought to the surface in connection with conventional oil or natural gas production 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 into the **Weir** formation in accordance with the conditions set forth herein. The permitted injection depth shall be **3,540** feet to **3,570** feet. The injection well is located in **Oceana** District, **Wyoming** County, **Pilot Knob** 7.5' Quadrangle. The coordinates for this injection well are:

UTM NAD 83 Northing **4181242.4** and Easting **455002.2** (meters). Latitude **37.77741** Longitude **-81.51098**

The maximum permitted wellhead injection pressure is established as **479** psi.


The maximum permitted injection rate is established at **50** bbl/hr. at a maximum of **400** bbl/day.

All references to West Virginia Regulations are to those that are in effect on the date that this permit becomes effective.

Any person who holds a permit shall pay an annual permit fee in accordance with the provisions of Title 47 Series 9 section 7 of the Legislative Rule. The first annual permit fee shall be remitted to the Office of Oil and Gas one (1) calendar year from the date of permit issuance; subsequent annual permit fees shall be remitted on or before the anniversary date of the permit issuance. The annual permit fee for a Class II disposal well is twenty-five dollars (\$25). The permit becomes void if the annual permit fee has not been paid within one hundred eighty (180) days of the due date. The Chief shall not reissue a permit until all annual permit fees due during prior terms have been paid in full. Failure to pay the annual groundwater fee of seventy-five dollars (\$75) for Class IID as required by the West Virginia Code, Chapter 22, Article 11 and/or Article 12, shall be cause for revocation of this permit. The annual permit fee is due and shall be paid on the anniversary date of permit issuance.

Non-compliance with the terms of this permit shall be cause for revocation of Certification under the terms of Chapter 22, Article 12, and revocation of the permit under Chapter 22, Article 11 of the West Virginia Code.

This permit and its authorization to inject shall remain in effect for five (5) years from the date of issuance of the final permit provided all terms of the permit are met.


James Martin, Chief
Office of Oil and Gas

PART I

A. REAPPLICATION

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must submit an administratively complete application, along with application fee payment, for a new permit at least one hundred and eighty (180) days before this permit expires.

B. IMMEDIATE REPORTING

The Permittee shall report any noncompliance which may endanger human health or the environment immediately after becoming aware of the circumstances by using the **WVDEP Emergency Spill line number 1-800-642-3074**. Written submission shall also be provided within five (5) 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, Permittee shall provide the anticipated time it is expected to continue; and the steps taken or planned to be taken to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported immediately:

- i. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water (USDWs).
- ii. Any non-compliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between the USDWs, or failure of mechanical integrity test demonstrations.

C. RIGHT OF APPEAL

Notice is hereby given of your right to appeal the terms and conditions of this permit by which you are aggrieved to the State Environmental Quality Board by filing a NOTICE OF APPEAL on the form prescribed by such Board for this purpose, with the Board, in accordance with the provisions of Chapter 22 Article 11, Section 21 of the code of West Virginia within thirty (30) days after the date of issuance of this permit.

D. EFFECT OF PERMIT

The Permittee is allowed to engage in underground injection in accordance with the conditions of this permit based on an approved permit application. The Permittee shall not allow the underground injection activity authorized by this permit to cause or allow the movement of fluid containing any contaminant into underground sources of drinking water and may not cause a violation of any primary drinking water regulation or any health-based limit promulgated under 40 CFR Chapter 1, Part 142, of the Code of Federal Regulations, or of any water quality standard promulgated by the West Virginia Department of Environmental Protection/Division of Water and Waste Management. Any underground injection activity not authorized in this permit is prohibited. Compliance with the terms of this permit does not constitute a defense to any action brought under Part C and the imminent and substantial endangerment provisions in Part D of the Safe Drinking Water Act (SDWA) or any other common or statutory law for a breach of another applicable legal duty.

E. PERMIT ACTIONS

1. **Permit Status Change.** This permit can be modified, revoked and reissued or terminated for cause specified in Chapter 22, Article 11 (hereafter WV Code §22-11), and Chapter 22, Article 12 (hereafter WV Code §22-12) of the West Virginia Code, and Title 47, Series 13 (hereafter Legislative Rule 47 CSR 13) of the Legislative Rules. The filing of a request by the Permittee for a permit modification, revocation and reissuance, suspension or revocation, or notification of planned changes or anticipated noncompliance, does not stay any permit condition.
2. **Transfer of Permits.** This permit is not transferable to any person unless notice is first provided to the Office of Oil and Gas and the Permittee complies with requirements of Legislative Rule 47 CSR 13-13.17. The Office of Oil and Gas 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 (SDWA).

F. SEVERABILITY

The provisions of this permit are severable, and if any condition of this permit or the Permittee's application of any provision of this permit to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of other provisions of the permit and the remainder of this permit shall not be affected.

G. DURATION OF PERMIT

This permit and the authorization to inject are issued for a period of five (5) years unless terminated under Part I Section H paragraph 11 of this permit. However, when through no fault of the Permittee the West Virginia Department of Environmental Protection does not issue a new permit with an effective date on or before the expiration date of the previous permit and the Permittee has submitted a timely administratively complete application as required in Part I section A of this permit, which is a complete application for a new permit, the expired permit shall continue to remain fully effective and enforceable.

H. GENERAL REQUIREMENTS

1. **Duty to Comply.** The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and the State Act and is grounds for enforcement action; for permit suspension or revocation, revocation and reissuance, or modification; or for denial of a permit renewal application. (Legislative Rule 47 CSR 13-13.12.a) Copies of UIC Program regulations (WV Code §22-11) may be obtained from the West Virginia Legislature's Website <http://www.legis.state.wv.us/WVCODE/Code.cfm>, and (Legislative Rule 47 CSR 13) may be obtained from the West Virginia Secretary of State's Website at <http://www.sos.wv.gov/>.
2. **Duty to Reapply.** If the Permittee wishes to continue activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit as required in Part I section A of this permit at least one hundred and eighty (180) days before this permit expires.
3. **Duty 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 to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate.** The Permittee shall take all reasonable steps to minimize or correct any adverse impact on health of persons or the environment resulting from noncompliance with this permit.
5. **Proper Operation and Maintenance.** The Permittee shall at all times properly operate and maintain all facilities, systems of treatment and control, and related equipment 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 operating staffing and training, adequate security at the facility to prevent unauthorized access, adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of this permit.
6. **Duty to Provide Information.** The Permittee shall furnish to the Chief within a reasonable time, any information which the Chief may request to determine whether cause exists for modifying, revoking and reissuing, or revoking this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Chief, upon request, copies of records required to be kept by this permit. If the Permittee becomes aware of any incomplete or incorrect information in the permit application or subsequent report(s), the Permittee shall promptly submit information addressing these deficiencies to the Chief.
7. **Inspection and Entry.** The Permittee shall allow the Chief, 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 purposes of assuring permit compliance for any substances or parameters at any location.
8. **Penalties.** Any person who violates a permit requirement is subject to civil penalties, criminal penalties, fines and other enforcement actions under WV Code §22-11 and WV Code §22-12.
9. **Signatory Requirements.** Only a duly authorized person may sign documents and reports associated with this permit.
 - a. All reports required by this permit and other information requested by the Chief shall be signed as follows:
 - (1) For a corporation, by a responsible corporate officer of at least the level of vice-president;
 - (2) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
 - (3) For a Municipality, State, Federal, or other public agency by either a principal executive or a ranking elected official.

- b. A duly authorized representative of the official designated in paragraph a. above may also sign only if:
 - (1) The authorization is made in writing by a person described in paragraph a. above;
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, and;
 - (3) The written authorization is submitted to, and approved by, the Chief.
 - c. If an authorization under paragraph (b) of this section is no longer accurate because a different individual has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Chief prior to or together with any reports, information or applications to be signed by an authorized representative.
 - d. Any person signing a document under paragraph (b) of this section shall make the following certification: (Legislative Rule 47 CSR 13-13.11.d). "I certify under 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."
10. **Property Rights.** Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, any infringement of Federal, State or local law or regulations, or any exclusive privilege.
11. **Permit Actions.** This permit may be modified, revoked and reissued, suspended, or revoked for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, suspension or revocation, or notification of planned changes or anticipated noncompliance, does not stay any permit condition.
12. **Confidentiality of Information.** In accordance with Legislative Rule 47 CSR 13-13.21, any information submitted to the State pursuant to this rule may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions, or in the case of other submissions, by stamping the words "CONFIDENTIAL BUSINESS INFORMATION" on each page containing such information. An affidavit or written request stating the need for requested confidential documents to remain confidential must also be submitted with the documents.
- a. If no claim is made at the time of submission, the State may make the information available to the public without further notice.
 - b. Claims of confidentiality for the following information will be denied:
 - i. The name and address of any permit applicant or Permittee.
 - ii. Information which deals with the existence, absence, or level of contaminants in drinking water.

13. **Monitoring Reports.** Monitoring results shall be reported at the intervals specified under Part II Section B of this permit.
14. **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 thirty (30) days following each schedule date.
15. **Other information.** Where a Permittee becomes aware that he/she failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Chief, he/she shall promptly submit such facts or information.
16. **Prohibited Activity.** It shall be unlawful for any person, unless an authorization has been issued by a groundwater regulatory agency, to allow crude oil, or any petroleum product derived from crude oil, or seepage, or natural gas, or condensate, or salt water, or any chemical mixture which may impact groundwater quality to escape from any well, pipeline, impoundment, storage tank, treatment unit, or storage container, or be allowed to flow onto or under the land surface or in such a manner that could impact surface or groundwater quality.
17. **State or Federal Laws.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any State or Federal law or regulation.

PART II

A. RECORD RETENTION

1. **Required Records.** The Permittee shall retain all records concerning the permitted underground injection well until three (3) years after completion of any plugging and abandonment. The Chief may require the Owner or Operator to deliver the records to the Chief after the retention period.

B. MONITORING REQUIREMENTS

1. **Sampling and Measurement.** Samples and measurements taken for monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the fluid to be analyzed and the procedure for analysis of the sample shall be in accordance with test procedures approved under Code of Federal Regulations 40 CFR 136.3, unless otherwise approved by the Chief. The Permittee shall identify the types of tests and methods used to generate the monitoring data.
2. **Monitoring Devices.** The Permittee shall install and maintain in good operating condition:
 - a. A tap on the discharge line between the injection pump and the wellhead for obtaining representative samples of injection fluids; and
 - b. Devices to continuously measure and record injection pressure, flow rates, injection and production volumes.
 - c. Pressure gauges shall be of a design that provides a full pressure range of at least fifty (50) percent (%) greater than the anticipated operating pressure; and a certified deviation accuracy of five (5) percent (%) or less throughout the operating pressure range.

- d. Flow meters shall measure cumulative volumes and be certified for a deviation accuracy of five (5) percent or less throughout the range of rates allowed by the permit.
3. **Wellhead Pressure Gauge.** A wellhead pressure gauge shall be installed and maintained on the injection tubing to facilitate inspection and ensure compliance of the maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported on Form WR-40.
4. **Daily Monitoring.** The Permittee shall daily monitor all the casing annuli with a pressure recording device with a resolution of one tenth (0.1) psi to continuously record the annulus pressure or with such a method as approved or required by the Office of Oil and Gas to allow early detection of any leaks from the injection zone or casing. Prior to injection the operator shall note the daily annulus pressure (daily baseline). Any deviation plus or minus 25 psi during injection of the daily baseline annulus pressure shall be considered a MIT failure. The Permittee shall also monitor the daily maximum injection pressure, volume, and rate. This information shall be reported monthly using the Office of Oil and Gas electronic WR-40 Form. Submittal shall be through the current WVDEP Electronic Submittal System (ESS): <https://apps.dep.wv.gov/eplogin.cfm>.
5. **Injection Well Mechanical Integrity Testing (MIT).** The Permittee shall conduct a mechanical integrity test of the injection well at a minimum frequency of once every five (5) years per Legislative Rule 35 CSR 4-7.7.b. The Permittee shall notify the Chief of his or her intent to conduct a mechanical integrity test no less than twenty-four (24) hours prior to such demonstration. The Permittee must submit a WR-37 Form to the Office of Oil and Gas within thirty (30) days of each mechanical integrity test conducted. When a pressure test is conducted, the Permittee must submit a pressure recording graph/chart as an attachment to the WR-37 Form. The pressure requirement of a mechanical integrity test on a well is a pressure of at least 150% or 1.5 times the maximum injection pressure. The pressure must be held for a period of at least 20 minutes with no more than 5% pressure loss to be approved for injection operations. Upon failure of a mechanical integrity test or expiration of the five (5) year mechanical integrity test regulatory period, the Permittee shall cease operation/injection and shut-in the well immediately until successfully repaired, tested or permanently plugged and abandoned per regulation. Each mechanical integrity test failure must be documented on the WR-37 Form and submitted with any pressure recording graph/chart. Corrective action for repairs shall be completed for approval by the Office of Oil and Gas and be conducted within ninety (90) days of the failure date. If repaired, the well must be re-tested and an updated WR-37 Form with any pressure recording graph/chart must be submitted to the Office of Oil and Gas for approval.

6. **Pipeline Mechanical Integrity Testing (MIT).** All pipeline(s) from the injection pump to the injection well shall be tested for integrity at least once every five (5) years with the results reported on the WR-37 Form along with the pressure test recording graph/chart and then submitted to the Office of Oil and Gas within thirty (30) days. The pipeline integrity test shall pressurize the injection pipeline(s) to 100 psi greater than the maximum permitted wellhead injection pressure for a minimum of twenty (20) minutes, allowing for no more than five (5) percent loss after completion. The Permittee shall notify the Chief of his or her intent to conduct an integrity test of the pipeline(s) no less than twenty-four (24) hours prior to such test. Upon failure of a mechanical integrity test or expiration of the five (5) year mechanical integrity test regulatory period, the Permittee shall cease operation/injection and shut-in the well immediately until successfully repaired, replaced and then tested. Repairs shall be completed by the Permittee and approved by the Office of Oil and Gas prior to resuming operations. All repairs shall be completed within ninety (90) days of the failure date. If repaired, the line must be re-tested and an updated WR-37 Form with pressure recording graph/chart must be submitted to the Office of Oil and Gas for approval. Any change made to the pipeline fittings or piping will require integrity pressure testing. All Office of Oil and Gas forms, including the WR-37 form can be found on the Office of Oil and Gas webpage: <http://www.dep.wv.gov/oil-and-gas/GI/Forms/Pages/default.aspx>.
7. **Additional MIT Requirements.** In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from the well, the packer is replaced or resealed, if well failure is likely, or as requested by the Chief. The Permittee may continue operation only if he or she has successfully demonstrated to the Chief the mechanical integrity of the permitted well. The Permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated. The Permittee must send a written notification to WVDEP Office of Oil and Gas within 24 hours if mechanical integrity of the well is lost. The notification must include a plan to address the failure within 90 days. The plan must either outline a repair or retest of the well or to plug the well within 90 days.
8. **Alternative MIT Procedures.** If the subject well cannot be tested as described above (Part II.B.5), the test shall conform with 47 CSR 13-6.2.b.1 concerning monitoring of annulus liquid levels in a manner approved by the Chief.
9. **Environmental Measurements.** All environmental measurements required by the permit, including but not limited to, measurements of pressure, temperature, mechanical, and chemical analyses shall be done in accordance with state guidance on quality assurance. All analysis must be performed by a West Virginia certified laboratory. Certified laboratories can be found on the WVDEP webpage at <http://www.dep.wv.gov/WVE/Programs/lab/Pages/default.aspx>.
10. **Monitoring Records.** Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analysis(es) were performed;
 - d. Individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.

11. **Authorized Injection Fluids.** The Permittee shall not inject any hazardous substances, as defined by Code of Federal Regulations 40 CFR 261, or any other fluid, other than the Class II fluids produced solely in association with oil and gas production operations. This permit is for authorization of injection of only fluids as defined for Class II wells in Legislative Rule 47 CSR 13-4.2. The fluids to be injected shall only be from those sources listed in the permit application. Additional sources of fluids may be approved upon written request by the Permittee. However, Permittee's acceptance of additional sources of fluid(s) shall be deemed approved provided that such fluid(s) meet all Class II injection standards and the Permittee reports within five (5) business days the source, API number and formation(s) for the sources added during the previous week. Accepting any fluid that does not meet Class II injection standards is grounds for enforcement action and/or revocation of this permit.
12. **Injectate Samples.** Injection fluids from sources will be analyzed at least once every five (5) years, or upon request of the Chief, to yield representative data on their physical, chemical, or other relevant characteristics. The Permittee shall take samples at or before the wellhead for analysis. Samples and measurements shall be representative of the monitored activity. The Permittee shall utilize applicable analytical methods. The Permittee shall sample, analyze and record the nature of all the injected fluid for the parameters listed in TABLE 1 below at the initiation of the injection operation, and upon request by the Chief or whenever the operator observes or anticipates a change in the injection fluid. Test results shall be submitted to the Office of Oil and Gas with laboratory analysis data sheets (report). Any analysis of injectate with a specific gravity result greater than 1.2 shall be reported to the Chief within twenty-four (24) hours of the results.

TABLE 1

Chloride	TPH-GRO
Bromide	TPH-DRO
Strontium	TPH-ORO
Barium	Benzene (B)
Iron	Ethylbenzene (E)
Manganese	Toluene (T)
Aluminum	Total Xylenes (X)
Arsenic	Total Dissolved Solids (TDS)
Sodium	Total Organic Carbon (TOC)
Calcium	Total Suspended Solids (TSS)
Sulfate	pH
Specific Gravity	NORM

13. **Stream Samples.** Permittee shall designate within sixty (60) days of the issuance of this permit two stream sample points on Crane Fork, one upstream location above the unloading area and one below the injection well location. Samples shall be analyzed for the parameters listed in TABLE 2 below. The sampling will be on a nine (9) month schedule with the first sampling conducted within sixty (60) days after the issuance of this permit. The results will be reported to the WVDEP Office of Oil and Gas, accompanied by a map identifying the sampling points and corresponding coordinates.

TABLE 2

Chloride	TPH-GRO
Bromide	TPH-DRO
Strontium	TPH-ORO
Barium	Benzene (B)
Iron	Ethylbenzene (E)
Manganese	Toluene (T)
Aluminum	Total Xylenes (X)
Arsenic	Total Dissolved Solids (TDS)
Sodium	Total Organic Carbon (TOC)
Calcium	Total Suspended Solids (TSS)
Sulfate	pH

C. REPORTING AND NOTIFICATION REQUIREMENTS

1. **Anticipated Noncompliance.** The Permittee shall give advance notice to the Chief of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
2. **Other Noncompliance.** The Permittee shall report all instances of noncompliance not reported under paragraphs Part I Section B, and Part II Section C Paragraph 3 of this permit, at the time monitoring reports are submitted. The report shall contain the information listed in Part I Section B of this permit. The Permittee shall report all other instances of noncompliance in writing within ten (10) days of the time the Permittee becomes aware of the circumstances. The reports shall contain the information listed in this permit.
3. **Planned Changes.** The Permittee shall give notice to the Chief as soon as possible of any planned physical alterations, additions to the permitted facility, and/or any changes planned in the operation of the facility.
4. **Conversion or Abandonment Notification.** The Operator shall provide written notification to the Chief prior to conversion or abandonment of the well or in the case of area/enhanced recovery permits before closure of the project, per Legislative Rule 47 CSR 13-13.6.e. Notice should be given at least thirty (30) days prior to any conversion, abandonment or alteration. Notice shall also be given prior to the addition, reduction or conversion of wells within an area/enhanced recovery permit.
5. **Cessation of Injection Activity.** Any well which is not in use for a period of twelve (12) consecutive months shall be presumed to have been abandoned and shall promptly be plugged by the Operator in accordance with the provisions in Chapter 22, Article 6 Section 24 of the West Virginia Code, unless the Operator furnishes satisfactory proof to the Chief that there is a bona fide future use for such well. All lines shall be completely drained of all fluids and the wellhead shut-in anytime injection operations cease for a period of greater than ninety (90) days. The WVDEP-Office of Oil and Gas must be contacted at least twenty-four (24) hours prior to the cessation shut-in process.
6. **Certification of Permit Review.** Within thirty (30) days of receipt of this permit, the Permittee shall report to the Chief that he or she has read and understands and accepts all terms and conditions of the permit. The Certification Document is included as an attachment of this permit, and must be signed, dated and submitted to WVDEP-Office of Oil and Gas.

7. **Duty of Owner/Operator to Report Discharges.** The Owner or Operator or person in charge of a facility subject to this rule from which a reportable discharge, as described in subsection 3.3 of Legislative Rule 35 CSR 1, occurs shall notify the Office of Oil and Gas by calling **1-800-642-3074** immediately; but in no case, later than twenty-four (24) hours after becoming aware of the discharge.

PART III

A. OPERATING REQUIREMENTS

1. **Permit Documents On-Site.** The UIC Permit and all attachments must be kept at the facility location at all times.
2. **Injection Fluid.** The Permittee shall not inject any hazardous substances, as defined by Code of Federal Regulations 40 CFR 261, or any other fluid, other than the Class II fluids produced solely in association with oil and gas production operations. This permit is for authorization of injection of only fluids as defined for Class II wells in Legislative Rule 47 CSR 13-4.2. The fluids to be injected shall only be from those sources listed in the permit application. Additional sources of fluids may be approved upon written request by the Permittee. However, Permittee's acceptance of additional sources of fluid(s) shall be deemed approved if such fluid(s) meet all Class II injection standards and the Permittee reports within five (5) business days the source, API number and formation(s) for the sources added during the previous week. Accepting any fluid that does not meet Class II injection standards is grounds for enforcement action and/or revocation of this permit.
3. **Required Barrel Counter.** The Permittee shall install and maintain a barrel counter, or other means of flow volume metering, on the injection line. The results are to be recorded and reported on the WR-40.
4. **Duty to Monitor or Plug Non-Cemented Wells That Penetrate the Injection Zone Within the AOR.** Any well that penetrates the injection zone with an inactive and/or abandoned status within the permitted Area of Review (AOR), that does not have cement casing through the injection zone, shall be monitored immediately by a method approved by the WVDEP-Office of Oil and Gas, as well as properly plug and abandon such wells, as necessary.
5. **Annulus Injection Prohibited.** Injection between the outermost casing protecting underground sources of drinking water and the wellbore is prohibited, as is injection into any USDW.
6. **Corrective Action.** The applicant must satisfy the requirements of the WVDEP-Office of Oil and Gas regarding any corrective action needed on all known wells penetrating the injection zone within the permitted Area of Review. This must be done in a manner which satisfies the requirements of Legislative Rule 47 CSR 13-13.9.
7. **Cement Evaluation Analysis.** After conducting a cement squeeze job in an open hole, or after any well cement repair for the well-constructed under this permit, the Permittee shall submit cementing records and cement evaluation logs that demonstrate the isolation of the injection interval(s). The analysis shall include a spherically-focused tool, run after the long-string casing is set and cemented, which enables the evaluation of the bond between cement and casing as well as of the bond between cement and formation. The Permittee may not commence or recommence injection until it has received written notice from the WVDEP-Office of Oil and Gas that such a demonstration is satisfactory.
8. **Loading/Unloading Stations.** Loading and unloading stations shall have spill prevention and control facilities and procedures as well as secondary containment. Spill containment and cleanup equipment shall be readily accessible.

9. **Above Ground Storage Tanks.**

- a. The Permittee shall ensure that secondary containment for existing above ground storage tank(s) shall be adequately designed and constructed to be sufficiently impervious to prevent the released substance from penetrating the containment structure until the release can be detected and recovered, but in no case, shall that time be less than seventy-two (72) hours. The secondary containment structure shall have capacity to contain 110% volume of the largest tank. If tank batteries or tanks are connected in series by manifold, the combined volume of the tanks must be considered if the tanks are capable of simultaneous release. The combined capacity of the tanks connected by manifold shall be considered unless the tanks are operated in a manner that prevents fluids from flowing from one tank to another under any conditions.
- b. Above ground tanks connected in series by a manifold shall utilize a system where valves are closed and locked to isolate tanks when their combined volume exceeds the secondary containment capacity. At no time, shall the combined volume of the tanks be accessible through the manifold system exceed the capacity of the secondary containment without someone being on site to monitor.
- c. All above ground storage tanks within the floodplain, as defined by the Federal Emergency Management Agency "FEMA" 100-year floodplain map, shall be anchored significantly enough to prevent movement in the case of a high-water flood event. The Permittee should contact the county floodplain manager to confirm the floodplain status of the tank(s) location(s).

10. **Wellhead Reinforcement.** All wellheads shall be reinforced or otherwise armored to protect against accidental collisions, if so positioned where collision could be possible.

11. **Pumps and Ancillary Equipment.** Pumps and ancillary equipment (e.g. valves, flanges, filters, condensate lines and instrumentation) handling materials that have the potential to contaminate groundwater shall be selected and installed to prevent or contain any spills or leaks.

12. **Sumps.** Sumps containing materials which have the potential to contaminate groundwater shall be designed, constructed and operated utilizing secondary containment, or other appropriate controls that can prevent groundwater contamination.

14. **Manifest Records.** The Permittee shall maintain a record (manifest) of every load of fluid received. The record shall include the hauler's name and signature, the Operator's name and signature, API number for the well the fluid was collected, the location from where the load was obtained and the volume of the load and whether the load of fluid delivered was a split load. If the load was a split load, each Operator's name and location shall be listed and, if possible, the volumes of fluid received from each Operator documented. This information shall be maintained on the Class II disposal manifest attached to this permit.

15. **Third Party Haulers.** No third-party haulers shall be permitted without approval by the WVDEP-Office of Oil and Gas. For approval, the Permittee shall designate by letter to the WVDEP-Office of Oil and Gas, any third-party hauler proposed to be used for the transportation of fluids to the facility. The third-party hauler may not commence transportation of fluids to the facility until approved by the WVDEP-Office of Oil and Gas.

16. **Air Quality Permit Determination.** Within thirty (30) days of issuance of the final version of this permit, the Permittee should contact the WVDEP-Division of Air Quality to complete a permit determination, if a recent determination has not been completed. The following web link will provide access for filing: www.dep.wv.gov/daq/permitting/Pages/nsr-forms.aspx.

17. **Facility Security.** The gate on the access road to the site shall be closed and locked at all times when there is not a company representative at the facility. All valves, water drains, containment areas, and storage areas shall be secured and locked utilizing locking devices and/or plugs. All gates and access points shall be secured and locked while no representative is at the facility. All visitors must check in upon arriving at the facility. Haulers (if used) shall not be allowed to off load without the proper paperwork and documentation.
18. **Duty to Drain Injection Pipelines.** All injection pipelines shall be completely drained of all fluids and the wellhead shut-in anytime injection operations cease for a period of greater than ninety (90) days. The WVDEP-Office of Oil and Gas must be contacted at least twenty-four (24) hours prior to the cessation shut-in process.

B. PLUGGING AND ABANDONMENT

1. Any well which is not in use for a period of twelve (12) consecutive months shall be presumed to have been abandoned and shall promptly be plugged by the Operator in accordance with the provisions of Chapter 22, Article 6, of the West Virginia Code, unless the Operator furnishes satisfactory proof to the Chief that there is a bona fide future use for such well.
2. Plugging and abandonment shall be conducted in a manner to prevent movement of fluids into or between USDWs (underground sources of drinking water).
3. Pursuant to Legislative Rule 47 CSR 13-13.7.f, the Permittee's plugging and abandonment plan shall be incorporated into the UIC permit. See Attachment 1.
4. Prior to well plugging, the Permittee shall apply for and receive a plugging permit from the WVDEP-Office of Oil and Gas to plug and abandon the well in accordance with an approved plugging and abandonment plan.
5. The Operator shall submit a closure and reclamation plan for the holding pits for approval by the WVDEP-Office of Oil and Gas prior to their closure. The plan shall describe the methods and practices to be used to remove the holding pits, disposal of the liner, disposal of the sediment, and site remediation.

PART IV

A. SITE SPECIFIC CONDITIONS

1. Appendix A: Specific Operational Conditions / Well Construction
2. Appendix H: Groundwater Protection Plan (GPP).
3. Appendix I: Requirement for Financial Responsibility to plug/abandoned an injection well.
4. Attachment 1: Plugging and Abandonment Plan.
5. Attachment 2: Site/Facility Diagram.
6. Attachment 3: Manifest Document.
7. Right of Appeal
8. Response to Comment
9. UIC Certification of Review

14. **Facility Security.** The gate on the access road to the site shall be closed and locked at all times when there is not a company representative at the facility. All valves, water drains, containment areas, and storage areas shall be secured and locked utilizing locking devices and/or plugs. During the life of this permit all gates and access points shall be secured and locked while no representative is at the facility. All visitors must check in upon arriving at the facility. Haulers (if used) shall not be allowed to off load without the proper paperwork and documentation.
15. **Duty to Drain Injection Pipelines.** All lines shall be completely drained of all fluids and the wellhead shut-in anytime injection operations cease for a period of greater than ninety (90) days. The Office of Oil and Gas must be contacted at least twenty-four (24) hours prior to the cessation shut-in process.

B. PLUGGING AND ABANDONMENT

1. Any well which is not in use for a period of twelve (12) consecutive months shall be presumed to have been abandoned and shall promptly be plugged by the operator in accordance with the provisions of Chapter 22, Article 6, of the West Virginia Code, unless the operator furnishes satisfactory proof to the Chief that there is a bona fide future use for such well.
2. Plugging and abandonment shall be conducted in a manner to prevent movement of fluids into or between USDWs (underground sources of drinking water).
3. Pursuant to Legislative Rule 47 CSR 13-13.7.f, the Permittee's plugging and abandonment plan shall be incorporated into the UIC permit. See Attachment 1.
4. Prior to well plugging, the Permittee shall apply for and receive a plugging permit from the Office of Oil and Gas to plug and abandon the well in accordance with an approved plugging and abandonment plan.

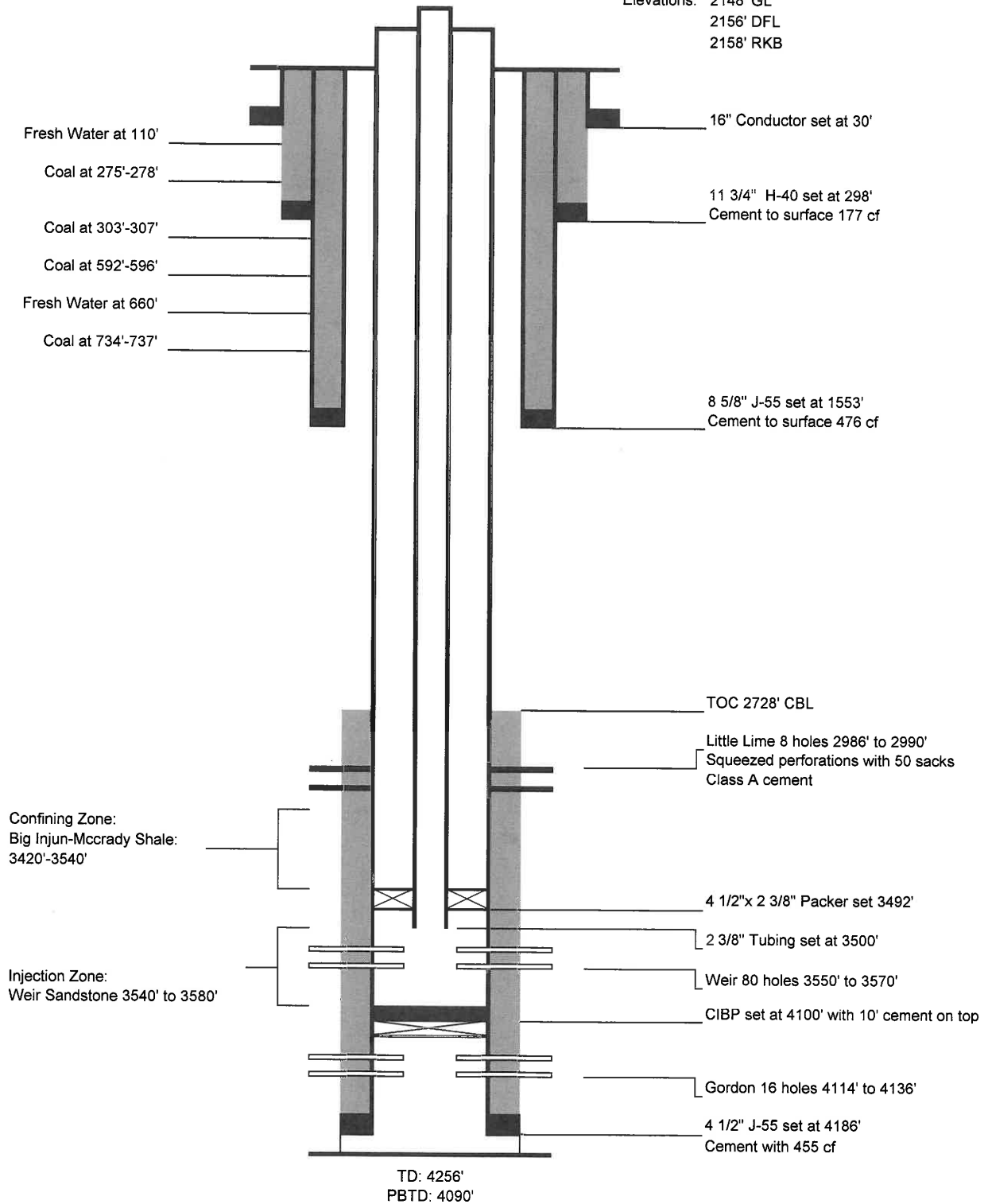
PART IV

A. SITE SPECIFIC CONDITIONS

1. Appendix A: Specific Operational Conditions / Well Construction.
2. Appendix H: Groundwater Protection Plan (GPP) The GPP shall be maintained and updated as necessary to protect groundwater quality.
3. Appendix I: Requirement for Financial Responsibility to plug/abandoned an injection well.
4. Attachment 1: Plugging and Abandonment Plan.
5. Attachment 2: Site/Facility Diagram.
6. Attachment 3: Manifest Form
7. Right of Appeal
8. UIC Certification of Review
9. Response to Comments

LC-19
API 47-109-01433

Elevations: 2148' GL
2156' DFL
2158' RKB



APPENDIX A

Injection Well Form

1) GEOLOGIC TARGET FORMATION <u>Weir</u>			
Depth	<u>3540</u>	Feet (top)	<u>3580</u>
		Feet (bottom)	<u>4256</u>
2) Estimated Depth of Completed Well, (or actual depth of existing well): <u>4256</u> Feet			
3) Approximate water strata depths:		Fresh <u>110', 660</u> Feet	Salt <u>None</u> Feet
4) Approximate coal seam depths: <u>275-278', 303-307', 592-596', 734-737'</u>			
5) Is coal being mined in the area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
6) Virgin reservoir pressure in target formation <u>700</u> psig		Source <u>Data from wells in field</u>	
7) Estimated reservoir fracture pressure <u>2407</u> psig (BHFP)			
8) MAXIMUM PROPOSED INJECTION OPERATIONS:			
Injection rate (bbl/hour)	<u>Dependent - max 50 bbl per hour</u>		
Injection volume (bbl/day)	<u>400</u>		
Injection pressure (psig)	<u>479</u>		
Bottom hole pressure (psig)	<u>2300</u>		
9) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES:			
<u>Class II fluids - see lab sheets attached. No additives anticipated.</u>			
Temperature of injected fluid: (°F)		<u>Varies with season</u>	
10) FILTERS (IF ANY)			
<u>Single and dual bag filters, two stage system, before and after tank settling.</u>			
11) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL			
<u>None, all piping is aboveground except for road crossing (in casing) and at unloading bays for approximately 48 feet. However, piping was coated with Roscoate prior to burial.</u>			

APPENDIX A (cont.)

12. Casing and Tubing Program

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	16	New			30	30	
Fresh Water	11 3/4	New	H-40		298	298	177
Coal	8 5/8	New	J-55		1553	1553	476
Intermediate 1							
Intermediate 2							
Production	4 1/2	New	J-55			4186	455
Tubing	2 3/8	New	J-55			3500	
Liners							

TYPE	Wellbore Diameter	Casing Size	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./sk)	Cement to Surface ? (Y or N)
Conductor							
Fresh Water							
Coal							
Intermediate 1							
Intermediate 2							
Production							
Tubing							
Liners							

PACKERS	Packer #1	Packer #2	Packer #3	Packer #4
Kind:	Production			
Sizes:	4 1/2 to 2 3/8			
Depths Set:	3492			

From: Veazey, Chris <cveazey@enervest.net>
 Sent: Monday, September 12, 2016 11:52 AM
 To: Jl@e2cofvirginia.com
 Subject: Correct WR-35 form for LC-19

WR-35

API # 47-109-01433

State of West Virginia
 Division of Environmental Protection
 Section of Oil and Gas

Well Operator's Report of Well Work

Farm Name: POCAHONTAS LAND CORP. Operator Well No. LOUP CREEK # 19
 LOCATION: Elevation: 2,148.00 Quadrangle: PILOT KNOB
 District: Oceana County: Wyoming
 Latitude: 5270 Feet South of 37 Deg. 47 Min. 30 Sec.
 Longitude 3260 Feet West of 81 Deg. 30 Min. 0 Sec.

Company: UMC PETROLEUM CORPORATION
 P.O. DRAWER 1738
 CLARKSBURG, WV 26301-1738

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill up Cu. Ft.
16"	30'	30'	
11 3/4"	298'	298'	177
8 5/8"	1553'	1553'	476
4 1/2"		4186'	455

Agent: GREGORY A. SHOCKLEY

Inspector: OFIE A. HELMICK
 Permit Issued: 06/01/94
 Well work Commenced: 08/05/94
 Well Work Completed: 08/13/94
 Verbal Plugging

Permission granted on: _____
 Rotary X Cable _____ Rig
 Total Depth (feet) 4256'
 Fresh Water depths (ft) 100', 660'
 Salt water depths (ft) None
 Is coal being mined in area (Y/N)? N
 Coal Depths (ft): 275'-278', 303'-307', 592'-596', 734-737'

OPEN FLOW DATA

Producing formations Little Lime * 2986' - 2990'
Gordon } Pay zone depth (ft) 4114' - 4136'
 Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow * 420 MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests _____ Hours
 Static rock Pressure * 630 psig (surface pressure) after 24 Hours
 * Co-mingled

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: UMC Petroleum Corporation

By: [Signature] DISTRICT MANAGER

APPENDIX H

GROUNDWATER PROTECTION PLAN

Facility Name: LC-19

County: Wyoming

Facility Location:

Postal Service Address:	4848 McGraw Road Ravencloft, WV		
Latitude :	37 46' 30.69"	Longitude:	-81 30' 47.25"

Contact Information:

Person:	Mark Davis
Phone Number:	304-294-7427 304-532-3980
E-mail Address:	mdavis@nytisky.com

Date: 10/5/17

1. A list of all operations that may contaminate the groundwater.

-Water Trucks unloading produced fluids (oil, glycols, road salt, diesel fuel).

-Produced fluids (chlorides, metals, and petroleum

Possible leaks from the UIC well and associated supply pipeline.

- Possible leaks from the injectate holding tanks.

- Possible leaks from the lined injectate holding pits.

2. A description of procedures and facilities used to protect groundwater quality from the list of potential contaminant sources above.

-Secondary containment for all tanks

-Use of concrete unloading bays with cameras.

-All bag filters located in secondary containment unit

-Proper disposal of all solid waste (filtered/bag filters)

Periodic mechanical integrity testing of the UIC well and associated supply pipeline

3. List procedures to be used when designing and adding new equipment or operations

-Provide site security to prevent unauthorized entry

-Design for secondary containment for all pipelines and storage tanks

-Consult with WVDEP

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4. Summarize all activities at your facility that are already regulated for groundwater protection.

-AST Act
-This permit

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

See Section 7 of this report, creeks sampled monthly, no ground water monitoring wells located within a mile of site.

6. Provide a statement that no waste material will be used for deicing or fill material on the property unless allowed by another rule.

It is Nytis Exploration policy that any and all wastes generated at this facility will be properly managed.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

-Nytis provides and conducts monthly environmental meetings for all employees.

-UIC well is inspected two - three times while in operations.

-All waste generated will be placed in containers to prevent surface water or precipitation to affect surficial soils.

-Tank battery has overfill and spill alarms that prohibit overfills.

-All contract drivers and employees have understood and agreed to Nytis' operational environmental policies.

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8. Include provisions for inspections of all GPP elements and equipment. Inspections must be made quarterly at a minimum.

-Any leaks are repaired immediately. Tank battery has overfill and spill alarms that prohibit unauthorized delivery.

-Pipeline is inspected monthly and injection pressure is monitored

Signature: *Yusef A. Davis*

Date: 10-5-17

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Environmental Protection

APPENDIX I

Requirement for Financial Responsibility to Plug/Abandon an Injection Well

To: WV Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, West Virginia 25304-2345
ATTN: Underground Injection Control Program

From: Nytis Exploration Company, LLC.
A Limited Liability Company
2480 Fortune Drive Suite 300
Lexington, KY 40509

Date: 10/5/17

Subject: Underground Injection Control (UIC) Permit Application
#UIC 2D1092703
Requirement for Financial Responsibility

I, Lloyd Hall, verify in accordance with 47CSR13-13.7.g., that I will maintain financial responsibility and resources to close, plug, and abandon underground injection wells(s) in a manner prescribed by the Chief of the Office of Oil and Gas.

Name: Lloyd Hall

Signature: Lloyd Hall UP Operations

Date: 10/5/17

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WV Department of
Environmental Protection



2480 Fortune Drive Suite 300
Lexington, KY 40509

Section 12 – Plugging and Abandonment

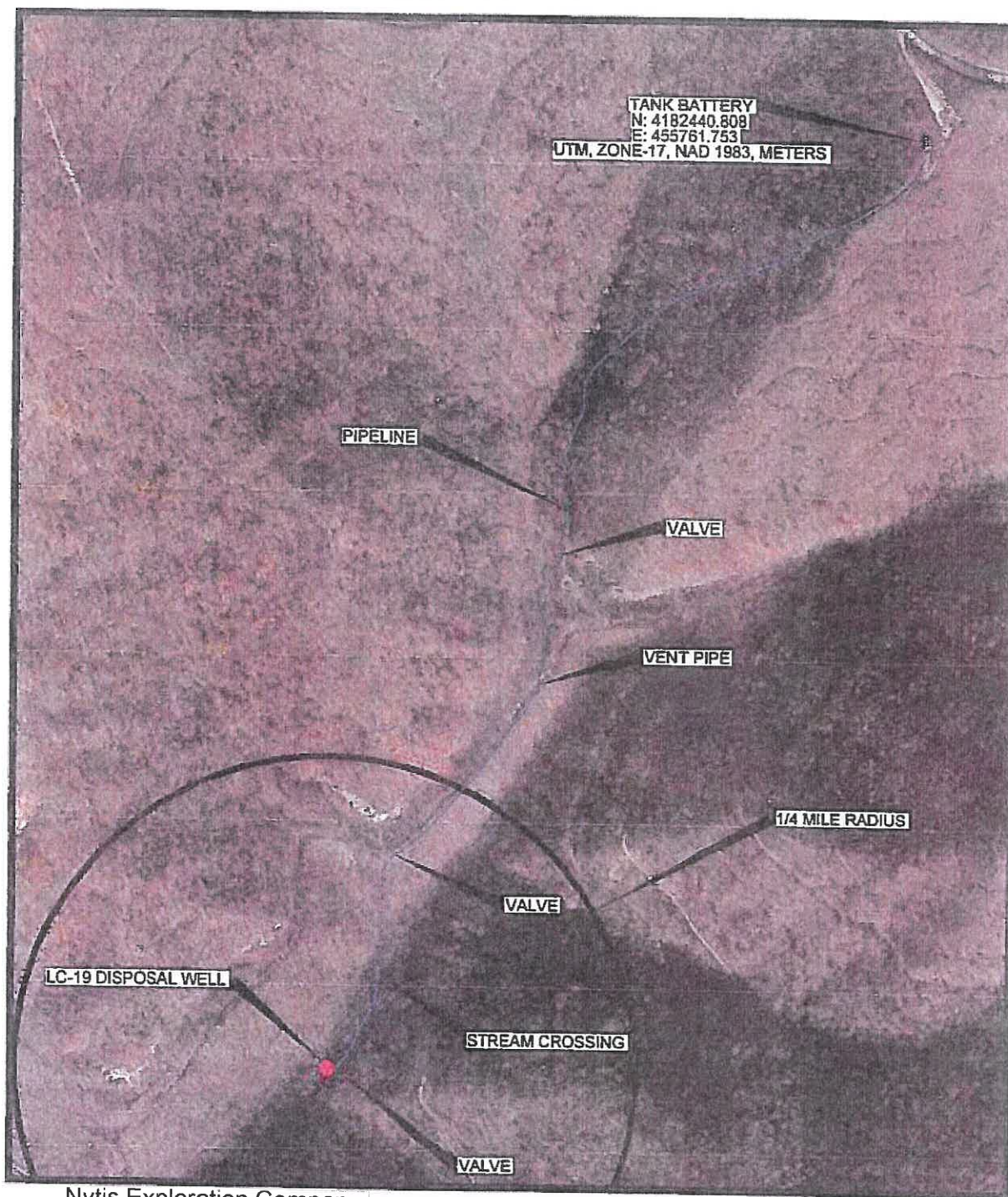
After completion of injection fluids or in the event the well inspection data concludes that a well integrity issue may occur, the injection well will be plugged and abandoned in accordance with all applicable WVDEP regulations. Prior to abandonment, the small building on-top of the well head will be inspected for asbestos containing materials (ACM) and will be properly demolished per applicable regulation. The plan is to have the well in static condition, remove the 2 3/8", 4.7 lb. EUE tubing and packer. Run a CBL to determine the top of cement plugs balanced over all perforated intervals in the well spacing from 50 feet below the perforated intervals in the well spacing from 50 feet below the perforations to 50 feet above the perforations. The cement plugs will then be displaced with freshwater and the tubing removed from the well. The 4 1/2" production casing shall then be backed off point and a 50-foot cement plug set at the surface. Upon completion of the well abandonment, the well head will be removed, cemented to surface and permanent abandonment monument will be erected. Finally, a completed WR-38 form will be submitted to the OOG within 30 days of well abandonment.

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Attachment 2



Nytis Exploration Company - LC-19 DISPOSAL WELL, PIPELINE & TANK BATTERY
CRANE FORK, WYOMING COUNTY, WEST VIRGINIA



EnviroCheck, Inc.

2,000' 0 2,000'
SCALE 1:24,000

MAP 2
SITE MAP
AERIAL VIEW



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UIC # _____

[illegible]

Make as many copies of the document as necessary to comply with the UIC permit. Page numbers should be maintained sequentially to provide an adequate record.

RIGHT OF APPEAL

Notice is hereby given of your right to appeal the terms and conditions of this permit of which you are aggrieved to the Environmental Quality Board by filing a NOTICE OF APPEAL, on the form prescribed by such Board for this purpose, in accordance with the provisions of Section 21, Article 11, Chapter 22 of the Code of West Virginia within thirty (30) days after the date of receipt of this permit.

George Monk and Molly Schaffnit
199 Bronco Lane
Poca, West Virginia 25159
gmonk@citynet.net
304-533-8622

Comments for Draft Underground Injection Control Class IID Permit UIC2D10901433002

Our comments are divided into major sections: important permitting issues; this well's draft permit text; operator's permit application materials which become permit conditions; and issues related to the operator's compliance and Office's enforcement.

Appendix I: Requirement for Financial Responsibility is found in the operator's application (page 175) but is not appended to the permit as noted in IV A.3. The final permit must include this item.

Comments on Important Permitting Issues

The important permitting issue is the absence of permitting authority under the Memorandum of Agreement between the state and the EPA created in 1983.¹ The Memorandum of Agreement explicitly states that all permits for all UIC classes (with special reference for Class II wells) are to be issued by the Division of Water Resources (now the Department of Environmental Protection's Division of Water and Waste Management). The primacy application's Memorandum of Understanding between the Division of Water Resources, Office of Oil and Gas, and the Oil and Gas Conservation Commission states explicitly that Class II well permits are to be written and issued by the Division of Water Quality. The Flow Chart submitted in the primacy application along with the MOU presents the permitting process for Class II wells in a diagrammatic fashion with the Division of Water Quality writing and issuing permits for underground injection and the Office of Oil and Gas issuing permits to drill.

Transfers of authority such as has taken place with the Office of Oil and Gas now writing and issuing Class II and Class III permits needs to be authorized by the Region 3 of the EPA.² A letter sent on 9 April 1990 by Neil Wise, Acting Chief, Water & Management Branch, Office of Regional Counsel, Region 3, EPA to Michael Lewis, UIC Director, West Virginia Department of Energy, Division of Oil and Gas describes the process:

States with approved programs must notify EPA when they propose to transfer all or any part of any program from the approved state agency to any other state agency, and must identify any new division of responsibilities. 40 C.F.R. § 145.32(c). The new agency is not authorized to administer the program until approval by the Administrator under § 145.32(b). Such approval is contingent on the state's submittal of 1) a modified program

description, 2) Attorney General's statement, and 3) Memorandum of Agreement, or such other documents as EPA determines to be necessary under the circumstances. Organizational charts required under § 145.23(b) shall be revised and resubmitted. . . .

The transfer of a program from one state agency to another is considered to be a substantial program revision; therefore, EPA is required to issue public notice through direct mail to interested persons, and publication in the Federal Register and the largest newspapers in the state, and to provide an opportunity to comment for a period of at least 30 days before the revision is effective. The public notice shall summarize the proposed revisions and provide the opportunity to request a public hearing, which will be held if there is significant public interest. See 40 C.F.R. § 145.32(b).

We would like to see a letter of authorization from Region 3 before the Office of Oil and Gas issues more permits.

WVDEP Response: The United States Environmental Protection Agency is the overseeing authority over all Classes of the UIC Programs. The Office of Oil and Gas directly reports to the West Virginia Department of Environmental Protection, Division of Water and Waste as well as to the US EPA bi-annually on the 1425 Program (Class II and Class III UIC). The West Virginia Division of Natural Resources, Division of Water Resources (which is now the West Virginia Department of Environmental Protection, Division of Water and Waste) received primacy from the US EPA on 1/9/1984 as stated in Federal Register Notice Volume 48, No. 238, page 55127. The UIC Program requirements have remained as stringent or more so, than the criteria that was approved in 1984. The UIC Program has not been transferred from one state agency to another agency. The name of the agency was merely changed from the West Virginia Division of Natural Resources, Division of Water Resources to the West Virginia Division of Environmental Protection, Division of Water and Waste. The WV DEP Cabinet Secretary has the power to organize and delegate responsibilities in order to effectively enforce the environmental laws. Any future questions regarding the authorization of the WVDEP OOG Class II & III Program Primacy should be directed to the US EPA Region 3 Office. The West Virginia Department of Environmental Protection organizational history and overview can be viewed on the WVDEP website at: <http://www.dep.wv.gov/Pages/OrganizationalHistoryandOverview.aspx>

¹ We have created a page with links to relevant primacy documents which is available at <http://sootypaws.net/gws/uic/primacy/>. The Memorandum of Agreement along with the Memorandum of Understanding with the Flow Chart were submitted to the Office of Oil and Gas as attachments along with prior comments.

² The Division of Water Resources and Office of Oil and Gas jointly issued UIC Class II permits after primacy was granted. While these permits into the middle of the 1990s were signed by chiefs of both agencies, we believe Class II permits have always been written by the Office of Oil and Gas. The Class III program came under Office of Oil and Gas control at least by 1990.

Comments for Draft UIC Class IID Permit Text

We will provide comments in sequence according to how conditions appear in the permit.

Permit Authorization Page

We are a bit confused as to what exactly is the depth of the Weir formation used for injection. According to the permit's Authorization Page the formation depth is 3540 to 3570 feet below the surface. The 1994 completion report for the well places the Weir at 3526 to 3543 below the surface, which the West Virginia Geological and Economic Survey finds as reasonable on their Pipeline database page results for this well. Well work permitted in 2003 planned to place perforations in the Weir from 3550 to 3570 feet below the surface, based on the 1994 log. A log for this depth is presented in the application on page 108 with colors and text representing confining and injection formations, though the depths don't quite match up with the log depths. We wish the complete log were available in the application or on the Geological and Economic Survey website.

The log in the permit application has a depth of 3540 to 3580 feet colored green as the Weir formation, with an unnamed formation between the Mccrady Shale (the bottom of which is 3526 feet – the 1994 completion report's top of the Weir) and the Weir (3540 feet – the 1994 completion report places the bottom of the Weir at 3543 feet). A completion report for the reworking performed in 2004 or 2005 is not available so if we accept that perforations were placed between 3550 and 3570 feet as indicated in the 2003 permit, then the Weir, or whatever the injection formation is called, should be 3540 to 3580 feet according to the log.

WVDEP Response: We consider the e-log to be the most accurate determination of actual depths. However, you are correct. The labels on the e-log for well LC-19 on page 108 of the application are incorrect. The correct depth for the Confining Zone is 3420 to 3540 and the Injection Zone should be labeled 3540 to 3580. The necessary changes will be made to the well schematic, Appendix A, and the Authorization Page.

Part II – Monitoring Requirements

B.5 We approve of the condition for well MIT with pressure requirements and standards for the test.

WVDEP acknowledges your comment.

B.6 We approve of the pipeline MIT condition. We, however, wish the tests were required annually instead of every 5 years.

WVDEP acknowledges your comment.

B.8 An alternative MIT process is acceptable to us for some wells but is not necessary for this well which has had standard MITs performed in the past after squeeze cementing perforations in the Little Lime. Any alternative MIT must meet the requirements of 47CSR13-6.2.b. Monitoring annulus liquid levels is not appropriate and should be replaced with notice that a special MIT procedure is attached to the permit. We believe daily annulus pressure monitoring along with periodic scheduled MITs (following the procedures found in permits for UIC2D04103175 and UIC2D05500319) are necessary for a well constructed with production casing perforations above the packer.

WVDEP Response: Your suggestion has been incorporated into the final permit.

B.11 This condition's text is included in condition III A.2. Either this condition or that in part II should be removed from the permit's text.

WVDEP Response: Your suggestion has been incorporated into the final permit.

B.12 We approve of the expanded list of constituents found on Table 1. This range is suitable for a Class II well. The last sentence requires testing at the initiation of the injection operation.

WVDEP acknowledges your comment.

B.13 We approve of the requirement of stream sampling near the facility and the constituents listed in Table 2.

WVDEP acknowledges your comment.

Part III - A Operating Requirements

A.1 We approve of the condition requiring that the permit and attachments must be kept on site at all times.

WVDEP acknowledges your comment.

Conditions III A.4 and 6 We approve of these Corrective Action conditions but believe they should be consecutive, not separated with a condition prohibiting annulus injection.

A.7 We approve of the cement evaluation analysis condition.

WVDEP acknowledges your comment.

Part III – B Plugging and Abandonment

B.5 We approve of this condition pertaining to proper closure and reclamation of pits. Our hope is that if the Office finds significant change in surface water concentrations of tested constituents required in II B.13, that closure of the pits, if no other cause for contamination is found, be required.

Our discussion of the operator's plugging plan attached to the permit as a condition appears below on page 6.

WVDEP acknowledges your comment.

Part IV – A Site Specific Conditions

The draft permit lacks Appendix I: Requirement for Financial Responsibility to plug/abandon an injection well.

WVDEP Response: Appendix I will be added to the attachments to the final permit.

Permit Application Materials Carried Over as Permit Conditions

Appendix A

We have noted above our concern about the actual depth of the Weir formation in our comments for the permit's Authorization Page. The injection formation depth should be 3540 feet to 3580 feet.

WVDEP Response: See response above.

Groundwater Protection Plan

The operator's Groundwater Protection Plan is among the better plans we've seen. The only issue is the absence of the Groundwater Protection Rule in Section 4. This rule covers fluid transfer and facility design.

WVDEP acknowledges your comment.

Condition for Operator's Financial Responsibility for Plugging

State law (47CSR13-13.7.g) requires the permit have a condition that the operator maintain financial responsibility for plugging the well. "The permittee must show evidence of financial responsibility to the Director by submission of a surety bond, or other adequate assurance, such as a financial statement or other material acceptable to the Director."

As is unfortunately usual with Class II permits, we are not seeing evidence of financial responsibility, much less financial responsibility based on a realistic cost estimate for the plugging of the well. Operators need to provide documentation in their applications providing evidence of financial responsibility, or the Chief needs to include in the application materials made available to the public certification that the Office has seen and reviewed evidence of financial responsibility.

If the state didn't have at least a quarter of its class IID wells abandoned and not plugged this wouldn't be such an important issue. It is unacceptable that class II wells have not been plugged and properly abandoned according to state law. The large number of abandoned and unplugged injection wells shows a permitting and compliance enforcement program that is in trouble.

The Appendix I form attached to the permit as written has the person signing the form assume total liability for plugging and abandoning the well. The form is written so that it violates the signatory requirements in the draft permit (I H.9) and state regulation (47CSR13-11). It is not clear that the operator is assuming responsibility, while at the same time the signer's relationship to the operator is not made plain by the form. In the case of this draft permit, the corporate role of the signer is included in the signature though that was by chance. The West Virginia Department of Environmental Protection's legal staff should examine this form and revise it accordingly.

WVDEP Response: Appendix I-Requirement for Financial Responsibility to Plug/Abandon an Injection Well is signed by an officer of the corporation and is adequate to fulfill the requirements of a UIC permit application.

Plugging Plan

The operator's plugging plan is a condition of the permit (47CSR13-13.7.f). What surprises us is how so many of the plans submitted in applications that we have reviewed in the past have been inadequately prepared. This plugging plan is an exception.

State law in §22-6-24 and 35CSR4-13 has clear requirements. State law has a clear methodology and clear work order requirements for a plugging permit. It stands to reason that a permit condition for a UIC Class IID well would present a carefully constructed work order satisfying 35CSR4-13.4.

The operator's plugging plan attached to the permit has serious issues. The plugs are not indicated by number or location. The plan is not clear as to if and where the production casing is cut and how cement is placed across the cut. There is no mention of 6% gel spacers between cement plugs; instead there is a mention of fresh water. The plan needs to be revised so that it shows a plug across the Weir formation (3500 feet to 3420 feet) and another plug across the squeeze cemented Little Lime (2885 feet to 3040 feet). The top of cement according to the well schematic is at 2729 feet for the production casing. That casing should be cut and pulled near that spot and a 100 foot cement plug placed across the cut. The fourth plug should be 100 feet across the intermediate casing shoe at 1553 feet below the surface. The fifth plug should be 100 feet of cement across the location of fresh water at 660 feet. The final plug should be the surface plug of at least 100 feet of cement.

WVDEP Response: Your comment states: “*State law in §22-6-24 and 35CSR4-13 has clear requirements. State law has a clear methodology and clear work order requirements for a plugging permit.*” The plugging and abandonment plan as submitted satisfies 47CSR13-13.7.f concerning a UIC permit application. The final details of the plugging operation that will actually be implemented shall be addressed in the review of the plugging permit application when it is submitted.

Compliance Enforcement

We were hampered in being able to obtain a clear idea of the Office’s compliance enforcement for this well in the past since the online databases we normally use were not available. We did have a copy of database records collected in August 2016. Using that copy and records obtained from the Office’s document database gives a cursory idea of recent compliance enforcement.

There have been two MITs for the well, in 2009 and 2013. The database copy showed 3 inspections, one in 2009 and two in 2013. One of the 2013 inspections was apparently a paper review of the operator’s submitted WR-37 for the 2013 MIT. The document database provided an IR-6 inspection form for a 2014 inspection. The inspector stated for that inspection: “Well tender was at the unloading battery he said a bear has been tearing up equipment around tank battery.” This seems to indicate that security of some form, such as fencing, is required.

We believe that Class IID wells require annual inspections at a minimum.

WVDEP Response: The new owners of this facility have expressed their desire to close the holding pits in the future. They are in the process of filing a request for a major modification to the permit concerning the demolition of the old tank battery and replacing it with a new tank battery and containment near the pump house. The holding pits will only be used on a standby basis once this is accomplished. The new tank battery will be within the fenced area which should mitigate the bear problem.

The West Virginia Department of Environmental Protection, Office of Oil and Gas would like to express gratitude and appreciation for the attention to detail, time and effort spent in supplying the above comments. Future special considerations may be incorporated in the Underground Injection Control Permitting, Compliance and Enforcement Section’s procedures and policies.

Underground Injection Control Permit

CERTIFICATION DOCUMENT

West Virginia Department of Environmental Protection
Office of Oil and Gas

Permit Id: 2D10901433002

Permit Name: **Nytis Exploration Company, LLC**

In accordance with Part II, Reporting and Notification Requirements, I hereby certify that I have read and am personally familiar with all the terms and conditions of this permit.

I understand that the underground injection of any waste streams other than those provided for in this permit is strictly prohibited. I understand that failure to pay the Annual Permit Fee or any other associated fees required by West Virginia Code, Chapter 22, Articles 11 and 12 shall be cause for revocation of this Permit. I further understand that reporting is required, and noncompliance with the terms of this permit will be cause for revocation of the permit and subject me to significant penalties including the possibility of fines and imprisonment.

Signature

Name and Title (Type or Print)

Date