

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF MINING AND RECLAMATION

CLASS 5, TYPE 5X13
UNDERGROUND INJECTION CONTROL (UIC)
REISSUANCE APPLICATION
For Coal Mines Slurry Injection

Applicant: _____

Permit Number: _____ Date Assigned: _____

Reissuance No: _____

GENERAL INFORMATION

Objective: The purpose of this UIC reissuance application is to gather detailed and technical information the WVDEP and the Division of Mining and Reclamation requires to make sound permitting decisions, within the regulatory framework of West Virginia Code of State Regulations and all other applicable state and federal mining regulations. All information requested is mandatory. Omission of required information, sparse or misleading presentation of information, will slow the review of this application; or lead to disqualification or denial of the reissuance. Additional information may be requested at any time during the review of this reissuance application.

I. Applicant Information

Applicant Name: _____

Address: _____

City, State, Zip: _____

Telephone: _____

II. Facility Information

Facility Name: _____

Address (Physical location of facility): _____

City, State, Zip: _____

Telephone: _____

County: _____ Quadrangle: _____ District: _____

Nearest Town: _____

Description of Operation: _____

SIC Codes: _____

Specific Directions to Facility: _____

III. Operator Information

Operator Name: _____
Telephone: _____

IV. Other Permit Information

Article 3(4) Permit Number(s): _____

NPDES Permit number(s): _____

Other UIC Applications/Permits associated with this site: Yes No
If yes, list by number, type, and date of issuance: _____

Other Permits associated with this site (**list all**):

- A. Miners Safety and Health Administration (MSHA): _____
- B. Dredge or Fill Permits: _____
- C. Other Relevant Permits: _____

Has this permit been modified since most recent reissuance? Yes No
If yes, list the Modification Number(s): _____
Does this Application propose any changes from existing permit? Yes No

V. Contact Information

Company Name: _____
Contact Person's Name: _____
Address: _____
Telephone: _____ E-mail (Required): _____

Consultant Name: _____
Contact Person's Name: _____
Address: _____
Telephone: _____ E-mail (Required): _____

Do you authorize WVDEP to communicate with consultant on the permitting activity? Yes No
Do you authorize the Consultant to be the Primary contact on this permitting activity? Yes No

VI. Receiving Void Information

- A. Name of Formation: _____
- B. Name of Mine Void: _____
- C. Height of Coal Void (in feet): _____
- D. Disposal Rate (gpd):

Current Average: _____	Current Maximum: _____
Proposed Average: _____	Proposed Maximum: _____
- E. Current Mine Pool Elevation: _____
 Current Maximum Mine Pool Elevation: _____
 Proposed Maximum Mine Pool Elevation: _____
- F. Is the receiving void Up Dip of other mine workings? Yes No
 If Yes, What Mine(s) lie Down Dip? _____

VII. Material to be Injected:

- Fine Coal Slurry
- Other (Explain):

PROJECT DETAILS

Provide the requested information below or attach additional worksheets as needed.

VIII. Site Specific Details

- A. Provide a General Description of this Proposed Project including any changes to existing Permit:

- B.** List and provide a detailed description of all waste streams proposed for injection: i.e., comingled water, surface water, mine drainage water, etc. **and** relative proportions of each source.
- C.** Provide general chemistry characteristics of source water (slurry).
- D.** Describe how waste streams are currently managed; type of fluid, description of water source, current disposal method, handling features, associated permits, and NPDES outlet numbers that discharge receiving mine pool water.
- E.** Provide **details** of the **proposed** injection system, including: collection methods, conveyance methods (pipe size, pumped/gravity flow, injectate source(s), flow rates, etc.), number of boreholes and type of boreholes (drilled wells (dia.), shafts, drift openings, etc.), permit numbers and NPDES permit/outlet numbers.
- F.** Describe any treatment of waste **prior** to injection.

G. Provide **details** on the expected frequency of use (hrs/day; days/week) and **expected** quantities to be injected: average and maximum (in gallons per day).

H. Describe expected injection pressure(s) at each injection point.

I. Chemicals: Provide a **list** of **all** chemicals expected to be used during this Reissuance period. UIC Reissuance application review procedures require that all chemicals, whether currently approved or proposed, must be presented and evaluated for use in this Reissuance. Provide copies of Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for **each** of the chemicals currently approved or proposed for use in operations producing the injectate, and any chemical used in any part of waste generation process.

In addition to providing MSDS or SDS, the following information addressing Maximum Contaminant Levels (MCLs) must be addressed.

“The permittee has the burden of proof to demonstrate that human health effects will not occur related to the chemical components of the product and its usage will not affect any underground sources of drinking water.

For parameters with existing MCLs published by US EPA: This information will be reviewed to determine whether monitoring requirements and/or effluent limitations for those parameter(s) are required to be placed in the permit.

For parameters with no existing MCLs published by US EPA: The permittee must provide information from any other source regarding effects on human health, including but not limited to Integrated Risk Information System (IRIS), World Health Organization, US PEA risk-based criteria (RBCs), ATSDR, and/or OSHA. This information will be reviewed to determine whether monitoring requirements and/or effluent limitations for those parameter(s) are required to be placed in the permit.

The permittee may also provide usage rates, flows, and calculations to demonstrate the expected maximum concentration of the parameters in the injectate, which can be used for comparison with MCLs or other published literature regarding effects on human health. If this information is not provided, then WVDEP must assume that the maximum concentration in the injectate is equal to the concentration or content set forth in the SDS provided with the UIC application”.

NOTE: Addition of chemicals after the permit is issued will require a permit modification.

NOTE: A permit WILL NOT be issued to an operation using diesel fuel, kerosene, or any other substance listed or having a component(s) listed as a Hazardous Waste by Toxicity under RCRA. An exception to this may be the use of pH adjusting chemicals such as sodium hydroxide, which may require additional waste characteristic sampling and monitoring, upon request.

J. Permitted Injection Point Locations:

Injection Point Number*	Constructed (Y/N)	Injecting (Y/N)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/WGS84)

* Attach additional sheets as necessary.

K. Injection Points to be Added or Deleted:

Injection Well Identification	Add/Delete	Injection Well Status (Proposed/constructed)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/WGS84)

* Begin with the next available sequential 200-range number after existing permitted injection points.

L. Groundwater Monitoring Points Locations (GWM):

Groundwater Monitoring Point (GWM#)	Constructed (Y/N)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/WGS84)

M. Receiving Mine Pool Monitoring Locations (MPM):

Mine Pool Monitoring Point (MPM#)	Constructed (Y/N)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/WGS84)

N. Receiving Mine Pool Dewatering Site Locations (MPD):

Mine Pool Dewatering Site (MPD#)	Pumped (P) or Gravity (G)	Constructed (Y/N)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/WGS84)

O. Waste Baseline Characterization: Provide results of a baseline waste characterization sample, as described by list of parameters in Section XIV, “Waste Characterization Analysis”. (Attach certified lab report and fill in all results on supplied table.)

P. Does the facility have one or more bath houses? Yes No
 If yes, how many? _____ Also, indicate whether the discharge is to the surface or subsurface of each.

- E.** Provide **details** on the effects of subsidence, current and potential future, on the receiving void, from both below and above receiving void.
- F.** Provide **details** on the general depth of cover from receiving void to surface, emphasizing areas of low cover and high hydraulic head where surface or surrounding shallow groundwater could be influenced by injected fluid. Include “**Depth of Cover Map**” as an attachment.
- G.** Provide original volume of receiving void, percentage of receiving void that is currently filled by injected material, and the percentage of receiving void that is expected to be filled during the proposed 5 year permitting cycle based on normal operation of the facility.
- H.** Provide **details** of in-place coal barriers around receiving void, emphasizing whether above or below drainage, include widths and identify widths on mapping.
- I.** If **above** drainage, provide **details** of barrier analysis, maximum hydraulic head on barriers, and seepage analysis. Provide barrier calculations. If below drainage, state “N/A – receiving void is below drainage”.

- J.** If **above** drainage, provide a detailed map of potential areas for blow outs and contingency plans for blow outs. Show thicknesses of outcrop barriers, per “Rule of Thumb”. Provide outcrop barrier calculations. If below drainage, state “N/A – receiving void is below drainage”.
- K.** Provide **details** of any active mine works, adjacent, overlying or underlying, in the area surrounding receiving void. If none, state “N/A - There are no active mine works in the area surrounding receiving void”.
- L.** Provide **details** of how this injection project could affect surrounding mining and potential future mining of coal reserves in the area?
- M.** Provide **details** of any **existing** underground mine seals and how they affect this project.
- N.** Provide **details** of any **proposed** mine seals (underground or surface) and how they affect this project.

- O. Provide **details** of how mine pool water in receiving void will be managed, including; methods of controlling water elevation, locations of surface discharges, (either gravity or pumped), associated NPDES permit numbers, outlet numbers, general water chemistry, and treatment methods.

- P. Provide **details** of mine water fate, quantities in/out/water balance and address elements associated with **Probable Hydrological Consequences (PHC)**.

- Q. Provide any additional comments or information the applicant feels is pertinent or noteworthy concerning this proposed project and is relevant to application review.

X. Monitoring Plan

UIC Permits are required to monitor water quality **within** the receiving mine void, surrounding groundwater **outside** the mine void, and if needed, surface water.

- A. Identify in Section VIII - M, and on mapping, the locations of permanent receiving mine pool **water quality monitoring** sites (MPM). These locations will be down dip of injection point. Mine dewatering pumps often are good locations for monitoring mine water quality while injecting. Site specific conditions may require installation of permanent monitoring wells.

- B.** Identify in Section VIII - L, and on mapping, the locations of hydrologically pertinent **groundwater monitoring** sites (GWM) **outside** the receiving mine void area. These monitoring points should be in locations that could be hydrologically influenced by the receiving mine pool water. An acceptable location could be an existing groundwater well, or the plan may require the drilling of a dedicated groundwater monitoring well(s). The use of an existing groundwater monitoring location will be dependent on it being in a hydrologically influenced location and the details of the existing well must be known.
- C.** Identify in this section and on mapping, **surface water** monitoring locations that could be expected to be impacted by receiving mine pool water. Surface water monitoring sites will consist of one upstream and one downstream location of a receiving stream. The need for surface water monitoring will be dependent on site-specific conditions.
- D.** Analysis of monitored water will be dependent on type of material injected. For instance: AMD treatment sludge will require at a minimum; heavy metals (NPDES Table IV C) and standard baseline chemistry for coal mining.

- E. Frequency of monitoring and reporting:** groundwater levels will be observed monthly and reported quarterly. Water quality monitoring will also be conducted quarterly and reported quarterly. Please state where monitoring results will be reported.
- F. Baseline Monitoring.** Provide the original six-month baseline groundwater survey for the mine pool to receive injection and include it as an attachment in the application.

XI. Groundwater User Survey

Applicant is required to submit a survey of all groundwater users within a ½ -mile radius of the receiving mine void. This survey will include all private and public users of groundwater. The availability of a municipal or privately supplied water source from a utility does not eliminate the requirement of conducting a groundwater user survey.

- A.** A survey of all groundwater users within a ½ -mile radius of the **receiving mine void** is required. This information must be provided as an attachment. If there are no groundwater users within ½ -mile, state “None”.
- B.** A one-time water sample for all groundwater users is required. Analysis will consist of: TPH (Total Petroleum Hydrocarbons), GRO (Gasoline Range Organics), DRO (Diesel Range Organics), and ORO (Oil/Grease Range Organics), heavy metals (NPDES Table IV C) and standard baseline general chemistry for coal mining. This information must be provided as an attachment.

- C. Collect information sufficient to interpret whether any neighboring groundwater user sources will, or have the potential to be, impacted by water quality changes associated with injection activities. This impact assessment will consider present and post-injection groundwater conditions.

XII. Abandonment Plan

- A. Provide **details** of expected life, or length of time of this proposed injection activity.

- B. Provide **details** of expected post-injection mine pool water elevations.

- C. Provide **details** of expected **post-injection** mine pool surface discharges, locations of discharges, pumped or gravity controlled, associated NPDES permit numbers, outlet numbers, treatment methods and expected general water chemistry characteristics.

- D. Plugging and Abandonment of wells: Submit a description of the plan for the plugging and abandonment of each injection point, according to Title 47 CSR 13.13.7.f (Underground Injection Control).

XIII. Required Documentation

- A. **Map Documentation - Note: All maps MUST be P.E. certified.** Submit a general site map (1" = 2000' [1:24,000] is acceptable); topographic map(s) providing the following:

Mine Maps must provide the following:

1. Show the extent of all adjacent/underlying/overlying, active/abandoned mine works within a 1-mile radius of the receiving mine void. Include company name, mine name and permit numbers. If NONE, state so.
2. Legibly show structural coal seam contours of receiving mine void.
3. Identify **current** and **maximum** mine pool elevations.
4. Identify all **Class 5 Type 5X13** injection points identified in Section VIII - J.
5. Show flow direction arrows in receiving mine pool.
6. Identify all injection points to be **added/deleted** identified in Section VIII – K.
7. Identify all **Groundwater Monitoring** Points identified in Section VIII – L.
8. Identify all **Receiving Mine Pool Monitoring Site** locations identified in Section VIII – M.
9. Identify all Receiving **Mine Pool Dewatering Site** locations identified in Section VIII – N.
10. Identify all underground mine seals.
11. Identify mine barrier thicknesses between receiving mine void and adjacent mine voids on mapping.
12. Provide "**Depth of Cover Map**" with contour lines showing distance between receiving mine void and the surface.
13. Identify **all** surface and underground piping associated with the proposed injection activity.
14. Identify ½ -mile radius from each existing and proposed injection well.
15. Identify all groundwater supply sources within a radius of ½ -mile around the receiving mine void (include public and private drinking water wells, springs, and seeps). If NONE, state so.
16. Identify all applicable details, including surface water features and NPDES outlets and permit numbers associated with this permitting activity.
17. Identify the locations of current mine discharge points, future mine discharge points, portals, shafts, access points. Include surface elevation and status (proposed, existing, abandoned, sealed).
18. Include the local strike and dip on each map.
19. Include any other pertinent feature that will influence operations of injection activities.

- B. **Flow Chart** – Submit the following:

1. A Flow Chart that details all elements of the existing and proposed underground injection activity. Drawing should include identification of injectate source, treatment sites, injection sites, dewatering sites, monitoring sites, receiving mine void(s), elevations, pipe diameters, flow direction, gravity or pumped flow, max flow rates, sample ports (with coordinates), mine void discharge sites, receiving streams, NPDES and Article 3 permit numbers.

- C. **Construction Details** – Submit the following:

1. A representative geologic cross-section of the proposed injection activity area. Identification of subsurface layers, all aquifers, and designating the receiving void.
2. Provide a detail drawing of each injection well including piping to the well head, sample port with coordinates, all valves and controls necessary to manage the injection flow rate, borehole and pipe dimensions, surface and mine void elevations, materials and details of the construction.

3. If the injection point is other than a well (i.e. fan shaft, portal, etc.), describe the method by which the injectate will be conveyed in the receiving void. Include details such as dimensions of pipelines, materials, etc.

D. Drilling Plugging and Abandonment: Provide the following documents if applicable.

1. Well Installation Document.
2. Pre-Closure Notification Document.
3. Closure Notification Document.
4. Safety precautions for drilling into mine voids.

E. Baseline Chemistry Details:

1. Provide analyses (performed by a laboratory certified by the State of West Virginia) of all parameters on the Waste Characterization Analysis form (Section XIV) for each injectate source and include certified lab sheets for each analysis.

F. Submit a complete copy of the Groundwater Protection Plan (GPP)

If no GPP exists, please complete one in accordance with Title 38 CSR 2F of the Code of West Virginia. The GPP must include all UIC approved chemicals currently on site. **This application will not be processed without the current, approved GPP.**

G. Legal Right to Inject:

Please present copies of signed and notarized documents showing that, should this permit be issued, applicant has the legal right to inject into the proposed mine void including any, and all down dip workings likely to receive water from the target void. This document should provide specific approval from the mineral owner to allow the proposed injection activity to occur. **Without proper documentation, application will be denied.**

XIV. Waste Characterization Analysis

General Chemistry

Sample Source ID: _____

Acidity	_____	mg/1 CaCO ₃	
Alkalinity	_____	mg/1 CaCO ₃	
BOD	_____	mg/1	
Bicarbonate	Total: _____	mg/1	Dissolved: _____ mg/1
Calcium	Total: _____	mg/1	Dissolved: _____ mg/1
Chloride	Total: _____	mg/1	Dissolved: _____ mg/1
COD	_____	mg/1	
Iron	Total: _____	mg/1	Dissolved: _____ mg/1
Magnesium	Total: _____	mg/1	Dissolved: _____ mg/1
Nitrate	Total: _____	mg/1	Dissolved: _____ mg/1
Nitrite	Total: _____	mg/1	Dissolved: _____ mg/1
Potassium	Total: _____	mg/1	Dissolved: _____ mg/1
PH	_____	s.u.	
Sodium	_____	mg/1	
Specific Conductivity	_____	Umhos/cm ₃	
Sulfate	Total: _____	mg/1	Dissolved: _____ mg/1
Total Dissolved Solids	_____	mg/1	
Total Suspended Solids	_____	mg/1	

Organics - Baseline

Acrylamide	_____	mg/1
(BTEX) Benzene	_____	mg/1
Toluene	_____	mg/1
Ethylbenzene	_____	mg/1
Xylene	_____	mg/1
Cumene (Isopropyl Benzene)	_____	mg/1
Ethylene Glycol	_____	mg/1
Benzo [A] Pyrene	_____	mg/1
Phenols	_____	mg/1
(TPH) GRO	_____	mg/1
DRO	_____	mg/1
ORO	_____	mg/1
TOC	_____	mg/1
Vinyl Chloride	_____	mg/1

Inorganics - Baseline

Aluminum	Total:	_____ mg/1	Dissolved:	_____ mg/1
Antimony	Total:	_____ mg/1	Dissolved:	_____ mg/1
Arsenic	Total:	_____ mg/1	Dissolved:	_____ mg/1
Barium	Total:	_____ mg/1	Dissolved:	_____ mg/1
Beryllium	Total:	_____ mg/1	Dissolved:	_____ mg/1
Boron	Total:	_____ mg/1	Dissolved:	_____ mg/1
Cadmium	Total:	_____ mg/1	Dissolved:	_____ mg/1
Chromium	Total:	_____ mg/1	Dissolved:	_____ mg/1
Copper	Total:	_____ mg/1	Dissolved:	_____ mg/1
Cyanide	Total:	_____ mg/1	Dissolved:	_____ mg/1
Fluoride	Total:	_____ mg/1	Dissolved:	_____ mg/1
Lead	Total:	_____ mg/1	Dissolved:	_____ mg/1
Manganese	Total:	_____ mg/1	Dissolved:	_____ mg/1
Mercury	Total:	_____ mg/1	Dissolved:	_____ mg/1
Nickel	Total:	_____ mg/1	Dissolved:	_____ mg/1
Selenium	Total:	_____ mg/1	Dissolved:	_____ mg/1
Silver	Total:	_____ mg/1	Dissolved:	_____ mg/1
Thallium	Total:	_____ mg/1	Dissolved:	_____ mg/1
Zinc	Total:	_____ mg/1	Dissolved:	_____ mg/1

XV. Permit Re-issuance Fee & Annual Fee Calculations

Complete this Permit Reissuance Fee Worksheet and return it with the completed Permit Reissuance Application and a check for the **Actual Permit Reissuance Fee** amount. The minimum Permit Application Fee is \$25.00, and the maximum Permit Application Fee is \$1,500. **Note:** Permits are in effect for a period of five years during which an Annual Permit Fee is due on each anniversary of the issuance of the Permit. The minimum Annual Permit Fee is \$25.00, and the maximum Annual Permit Fee is \$500.

A. Permit Application Fee Calculation – For New Permit Application Only.

Formula for calculation of Permit Application Fee:
Volume Fee (Table A) x Treatment Factor (Table B = 3 for Type 5X13 wells) x Well Type Factor (3 for Type 5X13 wells) = Fee

Table A – Volume Fees

Volume (gallons per day)	Fee
<250	\$ 50.00
250 – 500	\$ 75.00
501 – 1000	\$150.00
1001 – 5000	\$200.00
5001 – 50,000	\$400.00
50,001 – 100,000	\$600.00
>100,001	\$850.00

Table B – Treatment Factors

Level of Treatment	Factor
No Treatment	3
Primary Treatment	2.5
Secondary Treatment	2
Tertiary Treatment	1.5
>Tertiary Treatment	1

Calculate the Permit Application fee for this facility below:

$$\$ \frac{\quad}{\text{(Table A)}} \times \frac{\quad}{\text{(Table B)}} \times \frac{\quad}{\text{(Well Type Factor)}} = \$ \frac{\quad}{\text{(Calculated Permit Fee)}}$$

Note: If the Calculated Fee is less than \$25.00, the **Actual Fee** is \$25.00; if the Calculated Fee is greater than \$1500.00, the **Actual Fee** is \$1500.00.

Actual Permit Application Fee for this Facility: \$ _____

B. Annual Permit Fee Calculation

Formula for calculation of Annual Permit Fee: **Actual** Permit Application Fee x 0.333 = Fee

Calculate the Annual Permit Fee for this facility here:

$$\$ \frac{\quad}{\text{(Permit Application Fee)}} \times 0.333 = \$ \frac{\quad}{\text{(Calculated Fee)}}$$

Note: If the Calculated Fee is less than \$25.00, the **Annual Fee** is \$25.00. If it is greater than \$500.00, the **Annual Fee** is \$500.00. This fee will be billed on the anniversary date of permit after issuance. Do not pay this amount now.

Actual Annual Permit Fee for this facility: \$ _____

*Please be advised that, in accordance with the Code of West Virginia, Title 47 Series 55, Groundwater Protection Act Fee Schedule, Section 3.5.17, a **Groundwater Protection Fee of \$15.00 per year will be assessed for every Class 5 injection well permit. This is a separate fee and is in addition to the Annual Permit Fee.***

XVI. Certification

All permit applications must be signed by an authorized signatory authority, i.e.: a corporate officer for a corporation, a general partner for a partnership, the proprietor of a sole proprietorship, a principal executive or ranking elected official for a public agency, or any person who has been granted signatory authority by an existing signatory authority.

A. Name and Title of authorized signatory authority: _____

(Please type/print)

B. Signature and Date:

“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 fines and/or imprisonment.”

(Signature)

(Date)

XVII. Financial Responsibility

A. Name and title of person(s) who will:

1. Assume financial responsibility in the event of environment contamination.
2. Maintain resources necessary for proper closure of injection point(s).

Name (Type or Print)

Title

Name (Type or Print)

Title

B. Signature(s) and date:

Signature

Date

Signature

Date

Please submit one (1) complete Original application along with the appropriate fee to:

West Virginia Department of Environmental Protection

**Division of Mining and Reclamation
UIC Mining Program
601 57th Street SE
Charleston, WV 25304-2345**

Also

Please send Two (2) complete copies of this Application to appropriate MSHA office:

Carlos Mosley, District Manager District 3, MSHA 604 Cheat Road Morgantown, WV 26508	Brian Dotson, District Manager District 12, MSHA 4499 Appalachian Hwy. Pineville, WV 24874
David (Scott) Mandeville, District Manager District 4, MSHA 1293 Airport Road Beaver, WV 25813	