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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Elder Oil Company  
RT 1, Box 257  
Cairo, WV 26337

Re: Deficient UIC Disposal Well Permit Application Requirements 2D0855076

Dear Sir or Madam:

Upon technical review of UIC disposal well permit application - 2D0855076, the WVDEP -- Office of Oil and Gas has determined your submitted reissuance UIC permit application is incomplete. As active operator, you must cease injection and shut-in UIC well 47-085-05076 immediately, until a complete application package has been submitted to the Office of Oil and Gas. If future use of said well is no longer desired, UIC well 47-085-05076 must be permanently plugged within 180 days, in accordance with W.V. Code §22-6-24. Below outlines the deficiencies of your UIC permit reissuance application package:

1. The Office of Oil and Gas records reflect you do not have adequate bonding for a UIC permit. Pursuant to W.V. Code §22-6-26 "*...A separate bond as described in subsection (d) of this section shall be furnished for each well drilled or converted for the introduction of liquids for the disposal of pollutants or the effluent therefrom. Each of these bonds shall be in the sum of five thousand dollars, payable to the State of West Virginia...*" Please contact Cindy Raines, (304) 926-0499 ext. 1656, or [Cindy.J.Raines@wv.gov](mailto:Cindy.J.Raines@wv.gov), to address all well bond concerns.
2. Pursuant to 47 CSR 13.8.4.b.3. "*Demonstration of mechanical integrity at least every five (5) years during the life of the well;*" the Office of Oil and Gas records indicate UIC well 47-085-05076 Mechanical Integrity Test (MIT) expired as of 10/7/2013. The permittee must submit a WR-37 Form with each mechanical integrity test along with a copy of any test chart(s). The Office of Oil and Gas shall be notified 24 hours in advance of the re-test date to witness said test. Failure to meet the specified terms shall proceed to the revocation of Permit UIC2D0190460 by the Office of Oil and Gas.
3. A 7.5 minute topographic map with a one mile buffer surrounding the well #47-085-05076. Said buffer shall include all potable drinking wells, springs and surface water bodies.

4. A detailed description of all additives to be injected including concentrations.
5. Provide a list of production wells that are to be serviced by disposal well 47-085-05076.
6. Provide Water well sample analysis of all wells within ¼ mile Area of Review (AOR). **If no water wells exist within ¼ mile radius of disposal well 47-087-01623, then strategically select enough water wells to accurately describe groundwater quality.**
7. Provide a detailed analysis of the proposed injection fluid. This shall consist of a representative sample including but not limited to the following criteria:
  - pH
  - Chloride
  - Sodium
  - Specific gravity
  - Barium
  - Sulfate
  - TOC
  - TDS
  - TSS
  - Manganese
  - Bromide
  - Iron
  - BTEX
  - TPHs (ORO, DRO, GRO)
8. Provide an updated ¼ mile AOR plot/map, including all well activity that has occurred since 12/2/2008 permit issuance date. Provide well records or plugging affidavits for all wells drilled or plugged within the last five years.
9. Provide a detailed description of the proposed injection formation/zone, including but not limited to formation thickness, permeability (k), and porosity (ϕ).
10. Provide a description of injection formation confining layer.
11. Provide an updated isopach map (stratigraphic thickness) and structure contour map of top & bottom of injection formation (Big Injun).
12. Provide a Geophysical logs of well 47-085-05076 including all available e-logs and cement bond log (CBL) per §40 CFR-146-22.f.
13. A schematic of well 47-085-05076 including but not limited to cement section/top, perforations with labeled depths, packer depth, injection formation, and casing and tubing respective diameters.
14. Provide a detailed structural geology investigation per §40 CFR-146-22. This shall include but not limited to accurate description of all faults, fractures, and seismically active zones that may affect the disposal fluid's permanent confinement within the proposed injection formation.
15. Provide an injection fluid migration model, implementing injection formation characteristics, that predicts the extent of influence by the proposed injection activities.

Please take immediate corrective action to fulfill the above mentioned permit application requirements to prevent enforcement action. Attached is the Underground Injection Control Permit Application Package supplied by the Office of Oil and Gas, and Form WR-37. If you have any questions regarding this matter please contact James Peterson at [James.A.Peterson@wv.gov](mailto:James.A.Peterson@wv.gov) (304) 926-0499 ext. 1653 or myself, Zachary Stevison at [Zachary.G.Stevison@wv.gov](mailto:Zachary.G.Stevison@wv.gov) ext. 1646.

Sincerely,

Zachary Stevison  
Geologist II