

**Review Form 3**

Journal Name:	<a href="#">Journal of Energy Research and Reviews</a>
Manuscript Number:	Ms_JENRR_124005
Title of the Manuscript:	<b>Magnetic Field Effect on Removal of Dense Non Aqueous Phase Liquid from Unsaturated Zone Using Steam Injection</b>
Type of the Article	

## Review Form 3

### PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p><b>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</b></p>	<p>This manuscript is important for the scientific community as it explores an innovative approach to environmental remediation, combining steam injection with magnetic fields to enhance the removal of DNAPLs from contaminated soil. The research presents a potential breakthrough in improving the efficiency of groundwater remediation, an issue of growing concern due to industrial pollution. The combination of two established techniques—thermal remediation and magnetic influence—adds a novel dimension to existing methods, offering promising results. I appreciate the manuscript for its relevance, solid experimental design, and practical implications for environmental engineering, though it could benefit from further refinement in data presentation and clarity.</p>	
<p><b>Is the title of the article suitable? (If not please suggest an alternative title)</b></p>	<p>The title of the article, "<i>Magnetic Field Effect on Removal of Dense Non-Aqueous Phase Liquid from Unsaturated Zone Using Steam Injection</i>," is mostly suitable as it clearly conveys the main focus of the research—examining the impact of magnetic fields on the removal of DNAPLs using steam injection.</p> <p>However, it could be improved for clarity and precision. For example:</p> <ul style="list-style-type: none"> <li>• The term "Magnetic Field Effect" might be more precise if phrased as "Effect of Magnetic Fields" or "Impact of Magnetic Fields."</li> <li>• Adding "Efficiency" or "Remediation" could highlight the study's focus on improving recovery efficiency.</li> </ul> <p>A revised title could be: "<i>Impact of Magnetic Fields on the Efficiency of Dense Non-Aqueous Phase Liquid Removal from Unsaturated Zones Using Steam Injection</i>." This version emphasizes both the process and the study's goal.</p>	
<p><b>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</b></p>	<p>The abstract effectively conveys the main goal of the study—investigating the effect of magnetic fields on the removal of DNAPLs using steam injection.</p>	
<p><b>Are subsections and structure of the manuscript appropriate?</b></p>	<p>Yes</p>	
<p><b>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</b></p>	<ol style="list-style-type: none"> <li>1. In Table 4 (recovered volume using steam injection only), the total cumulative recovered volume of Carbon tetrachloride after 120 minutes is reported as 164.1 mL, with a recovery efficiency of 82.05%. However, in section 3.6, when comparing the recovery results between steam injection only and steam injection with magnetic fields, the volume recovered at 0 Tesla is listed as 160.6 mL, leading to a small discrepancy in the reported recovery volumes.</li> <li>2. In section 3.6, it is stated that the recovery efficiency using steam injection only is 82.05%, while using a magnetic field of 1T, 2T, and 3T results in recovery efficiencies of 89.45%, 94.95%, and 95.35%, respectively. However, when comparing Table 6 (for 2T magnetic field) and Table 7 (for 3T magnetic field), there is very little difference between the recovery volumes at 120 minutes: 189.9 mL (94.95%) vs. 190.7 mL (95.35%). This 0.4% difference may not be practically significant, even though it is presented as a marked improvement.</li> <li>3. The document reports a chi-square value of 0.0557 in Table 9 (Observed Recovered Volume of Carbon tetrachloride), which is lower than the critical value of 16.92. However, the implications of this test are not fully discussed. Given the small observed differences in recovery efficiencies between magnetic field strengths (especially 2T vs. 3T), the significance of these differences should be critically evaluated to ensure that the improvements in recovery efficiency are statistically meaningful.</li> <li>4. In section 3.4, it is noted that between 90 and 120 minutes, the recovery volume decreased, possibly due to the evaporation of DNAPL (Carbon tetrachloride). This raises a question about the consistency of the mass balance throughout the experiment. It would be helpful to clarify whether the unaccounted loss of the contaminant could affect the accuracy of the reported</li> </ol>	

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	recovery efficiencies.	
<b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b> :	There have been several advances in thermal remediation, magnetic field applications, and groundwater decontamination techniques in recent years. Incorporating studies from the last 5-10 years would strengthen the literature review and contextualize the study within current scientific developments.	
<u>Minor</u> REVISION comments  <b>Is the language/English quality of the article suitable for scholarly communications?</b>	The flow of the text is hindered by inconsistent punctuation and occasional misuse of commas and conjunctions. Proper use of punctuation would make complex ideas easier to digest.	
<u>Optional/General</u> comments		

**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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