Review of: "On-Line Monitoring of Minor Oil Spills in Seawater Using Sediment Microbial Fuel Cells: A Preliminary Study"

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Potential competing interests: No potential competing interests to declare.

My suggestions

This scientific manuscript investigates whether devices called sediment microbial fuel cells (SMFCs) can be used to detect oil spills in seawater. The researchers found that as oil was added to the SMFCs, the voltage output decreased. This suggests that SMFCs could be a cost-effective and environmentally friendly way to find small oil spills in seawater.

This manuscript can be considered for publication in your journal after a revision. Here are my thoughts:

Strengths of the Manuscript:

- Clearly written and well-structured: The manuscript is easy to follow with a logical flow from introduction to conclusion.
- Strong foundation in the subject matter: The authors demonstrate a good understanding of sediment microbial fuel cells (SMFCs) and their potential applications.
- Clear research question and methodology: The question of SMFC effectiveness in seawater for oil spill detection is well-defined, and the methodology is described in detail.
- Compelling results: The findings on voltage decrease with oil introduction and the discussion on external resistance are interesting.

Areas for Improvement:

- Consider adding a brief introduction to microbial fuel cells (MFCs) in general for a broader audience.
- Highlight the novelty of the study: Emphasize that this research is the first to explore SMFCs for oil spill detection in seawater.
- Address potential limitations of the chosen oil type (Pennzoil 5W-20) compared to previous studies (Service Pro 15W-40).
- Briefly discuss possible reasons for the observed inconsistencies in voltage decrease across different resistances.
- Explore data visualization: Consider including additional figures to represent power density curves or voltage response over time.
- References: Double-check references for accuracy and formatting consistency.

Additional Suggestions:

- Mention potential future applications of SMFCs for oil spill detection beyond cost-effectiveness and environmental friendliness.

Briefly touch upon the biodegradability of the materials used in the SMFC construction.