



Project Case Study

Groundwater Remediation ERC Project (Mostorod Refinery)

About

For one of Egypt's leading petroleum refineries, the challenge of historical hydrocarbon contamination posed serious risks to soil and groundwater quality.

United Group was selected to provide a full remediation system using environmentally sustainable and self-operating technologies designed for 7/24 recovery — ensuring long-term environmental protection and regulatory compliance.

Challenge

The ERC refinery site in Mostorod suffered from extensive subsurface petroleum contamination caused by decades of industrial activity. Hydrocarbon layers (LNAPL) were detected floating on the groundwater, threatening migration to nearby areas and affecting future construction and operations.

The site faced multiple challenges:

- Recovering light hydrocarbons efficiently without extracting water.
- Operating in areas without access to electricity or compressed air.
- Ensuring compliance with environmental authorities' strict standards.
- Minimizing installation time and avoiding disruption to ongoing refinery activities.

Contacts Us



+20 111 6000 761



info@unitedgroupco.com



9 Ramses Extension Street, Next to
El Sekka Club, Nasr City, Cairo – Egypt



Solution

United Group designed and implemented a complete remediation system combining advanced engineering and sustainable energy:

- Deployment of TR-610 self-regulating LNAPL recovery pumps — designed to separate and recover floating petroleum layers while preventing water intake.
- Integration of SRX extraction pumps for groundwater control and system balancing.
- Use of solar-powered modules for remote and off-grid operation.
- Installation of hydrophobic filtration and sealed recovery drums to ensure clean discharge and safe storage. System operated continuously 7/24 under automated control with minimal maintenance.
- This approach eliminated the need for electrical infrastructure while achieving efficient product recovery and compliance with ERC's environmental requirements.

Results

All recovery systems were successfully commissioned and operated under United Group's supervision.

The project achieved measurable environmental and operational improvements:

- Reduced hydrocarbon layer thickness by over 90%.
- Zero disruption to refinery operations during system installation.
- Improved groundwater quality to meet environmental standards.
- 7/24 autonomous operation using solar energy — no external power required.
- Rapid approval by Egyptian Environmental Affairs Agency (EEAA).
- This approach eliminated the need for electrical infrastructure while achieving efficient product recovery and compliance with ERC's environmental requirements.

Through innovative technology and a results-driven approach, United Group proved its capability to deliver reliable and sustainable environmental solutions that protect Egypt's vital groundwater resources.