



شركة أركان الفلاح للصناعة  
Arkan Alfalah Co. For Industry  
an affiliate of ASH Group



رؤية  
VISION  
2030  
المملكة العربية السعودية  
KINGDOM OF SAUDI ARABIA

# TUWAIQ

In-service robotic tank inspection

TUWAIQ is the first submersible robot manufactured in the Kingdom of Saudi Arabia. It is equipped with:



- 8 ultrasonic transducers for accurate thickness readings,



- 4 cameras for visual inspections,



- A sonar to navigate around obstacles



- 4-wheel-drive system to maneuver across rough terrains, and



- a submersible pump that removes any sludge or sediments that may come in its path.

Approved service under API 653 code and Recommended Practice 525.



American Petroleum Institute

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## The robot can be deployed in the following products:

- Intermediate Process Products	- Bis (2-EthylHexyl )DB	- N Polymeric (MDI)
- Gasoline	- Bunker C (#6 FO) Diesel	- Phenyl Isocyanate (Phenco)
- Condensate	- Low Sulphur Dimethyl-	- p-p-Diaminodiphenyl Methane
- Demin Water	- Propanediol Di-2-	- Propylene Glycol Monomethyl
- Diesel (#2 FO)	- Ethylhexyl Adipate DPM	- Propylene Glycol
- Fresh Water	- Eastman DBP / DEP / DIBK / DOP	- Polybutene Socium
- Fire Water	- Eastman EB / PG / N-Butanol /	- Hydrocide Spirits
- Food Grade Products	- TXIB Ethylene Glycol Monopropyl	- Terephthalante
- Glycols	- Ether Ethyl 3 Ethoxy Proprionate	- TPM
- Jet A Fuel	- Hexane	- Water Salts
- Kerosene	- Crude Oil	- 2-Ethyl Hexanol
- Lube Oil	- Hexanol	- 2-Butoxyethyl acetate
- Mild Acids	- Methyl-Ethyl Ketone (MEK)	- Isobytyl: Isobutyrate
- Mineral Oil	- Methanol	- 2,2,4-Trimethyl 1,3 Pentanedic -
- Olefin-Water	- Methyl-N-Amyl Ketone	2-ET
- Acetic Anhydride	- Naphtha	- 2,2 Dimethyl-1,3-Propanediol
- Alcohol's	- N-Butyl Alcohol	

## Deliverables:

1- Remaining life	5- Metal thickness
2- Bottom plate UT Assessment	6- Corrosion rate
3- Annual ring	7- Pitting
4- EVA	

## Advantages

- NO Shutdown
- NO Product Transfer
- NO Out-of-Service Inspection
- NO Cleaning and waste processing
- NO VOC Emissions
- NO Environmental: Waste disposal
- NO Out-of-Service Lost Revenue
- NO Alternative Tankage
- NO Health and Safety Worker Protection
- NO Man Entry
- Cost-effective

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