



# PETRO-BASE GROUP

*Since 1998*

AFRICA, NORTH AMERICA, SOUTH AMERICA, MIDDLE EAST

## CORPORATE PROFILE





# PETRO-BASE GROUP

Since 1998

AFRICA, NORTH AMERICA, SOUTH AMERICA, MIDDLE EAST

## AFFILIATES

- **PETRO-BASE GROUP LIMITED (Nigeria)**  
*Subsidiaries:*
  - Petro-Base Ltd,
  - Petro-Base Offshore Ltd
  - Petro-Base Inspection Ltd
  - Trans-Orbit Petroleum Services Ltd
- **PETRO-BASE GROUP, LLC (USA)**
- **PETRO BASE GROUP (PTY) LTD (South Africa)**
- **PETRO BASE GROUP CC (Namibia)**
- **PETRO-BASE GROUP, INC (Guyana)**

# WHO WE ARE... OUR CORE VALUES

## OUR BACKGROUND

- ESTABLISHED SINCE 1998
- SPAN 3 CONTINENTS WITH OPERATING AFFILIATES WORLDWIDE
- WHOLLY NIGERIAN OWNED

## OUR STRENGTHS....

- MODERN TECHNOLOGY
- RIGOROUS PURSUIT OF CUSTOMER SATISFACTION
- TRACK RECORD OF INDUSTRIAL EXCELLENCE
- TRAINED AND WELL MOTIVATED PERSONNEL
- SAFETY FIRST APPROACH TO WORK EXECUTION
- TIMELY, QUALITY AND RELIABLE SERVICE



We strive to be the first choice Integrated Service Company that consistently meets and exceeds the expectations of our clients.



We enhance our clients' facility integrity through the provision of conventional and specialized services, while always employing acceptable safety, environmental and professional standards using best practice and highly motivated personnel

## OUR CORE VALUES

- INTEGRITY
- NATIONAL CONTENT
- SAFETY CULTURE
- PROFESSIONALISM
- INNOVATION
- RESPECT
- EXCELLENCE
- DIVERSITY





Petro-Base Ltd is an 100% indigenous Oil and Gas service company registered in 1998 with the Corporate Affairs Commission and the Department of Petroleum Resources, to offer services to the oil/gas and industrial companies in Nigeria.

We have over the years executed a wide variety of Asset Integrity Management, Engineering/Procurement/Fabrication/Maintenance Projects, Metallurgical Failure Analysis/Forensic Investigation, Sludge Profiling Of Crude Oil Tanks And Equipment Inspection campaigns for various companies in Nigeria including ExxonMobil, Chevron, Addax, Sahara, Shell, SNEPCO, Mobil, Network, Heritage, Oando, Total, Tecnimont, in addition to our other international clients across Africa, North America, South America and Asia such as Rio Tinto, NRG, North Caspian Oil Company (NCOC), Chevron Refinery(USA), Shell Refinery(USA), Allerion Crude Oil Tank Farm (Canada), Flint Hills (USA), Holly Frontier Refinery (USA), Loop LLC (USA), to mention a few under a sterling safety record.

PetroBase is an emerging multinational with Affiliates (Petro-Base Group, LLC - USA, Petro Base (PTY) Ltd - South Africa, Petro Base Group CC – Namibia, Petro-Base Group, Inc. - Guyana) spanning four continents and is proudly Nigerian. Our company is setting the pace as one of the very few wholly owned Nigerian companies with affiliates established worldwide.

# WHERE WE ARE



# **WHAT WE OFFER...**



# WORLDWIDE SERVICES

1. ENGINEERING DESIGN, FABRICATION, CONSTRUCTION, ERECTION AND FABRIC MAINTENANCE
2. ENGINEERING (MECHANICAL, ELECTRICAL AND CIVIL ENGINEERING WORKS)
3. FACILITY UPGRADE AND MAINTENANCE
4. ONSHORE/OFFSHORE ADVANCED AND STANDARD INSPECTION SERVICES
  - *CORROSION MAPPING, LONG RANGE UT, CORROSION UNDER ISULATION*
  - *PRESSURE VESSEL AND HEAT EXCHANGER/TUBE INSPECTION*
  - *DRILLING EQUIPMENT/TUBULAR INSPECTION*
  - *LIFTING GEAR INSPECTION*
5. ABOVE AND UNDERGROUND STORAGE TANK SERVICES
  - *SLUDGE PROFILING OF OIL TANK (S.P.O.T)*
  - *TANK CALIBRATION/SETTLEMENT*
6. ROPE ACCESS AND SCAFFOLDING
7. OIL AND GAS INDUSTRY TRAINING AND CERTIFICATION
8. NATURAL GAS PIPELINE NETWORK AND DISTRIBUTION
9. METALLURGICAL FAILURE ANALYSIS AND FORENSIC INVESTIGATION
10. PROCUREMENT AND LOGISTICS



**ENGINEERING DESIGN,  
FABRICATION,  
CONSTRUCTION,  
ERECTION AND  
INSTALLATION**





# **WIRE DRESSING, PANEL INSTALLATION AND WIRING**

# CABLE INSTALLATION AND TERMINATION



# CIVIL WORK

## CONCRETE AND FOUNDATION WORK



# FABRIC MAINTENANCE – BLASTING AND PAINTING

*Our unique approach:*

- Pre-inspection and assessment of condition
- Repair and/or replacement of failed parts and components
- In-situ inspection for repair integrity
- Using our environmentally friendly zero-discharge blasting and painting





# ADVANCED INTEGRITY INSPECTION

- ✓ Corrosion Mapping/ Inspection - Pipeline, Piping & Pressure Vessels, Tanks
- ✓ Advanced Automated Robotic Inspection (Onstream)
- ✓ Phased Array UT Inspection
- ✓ Offshore /Onshore Pipeline Inspection and Maintenance
- ✓ Corrosion Under Insulation Inspections
- ✓ Guided Wave Ultrasonic Inspection
- ✓ Heat Exchanger/ Shell Inspection
- ✓ Rope Access Inspections
- ✓ API 653 Inspection



## CORROSION MAPPING/ INSPECTION

- Our Inspectors are experienced and highly capable NDT Specialists
- Industry leader in static equipment inspection including Corrosion Mapping of Topsides facilities – Piping, Vessels, Storage Tanks and Heat Exchanger
- Completed wide ranging Inspection projects (Nigeria, USA, South Africa, Angola, Kazakhstan, Namibia)



A rapid-motion scanner was used on storage tanks to evaluate the condition of the tanks' shell thickness. Employees of the contractor, Petro Base, operating the equipment are from left to right Clement Nduka and Ambrose Ezimoha, advanced non-destructive testing specialists, and Johan le Roux, managing director of Petro Base South Africa.



# ROBOTIC DELIVERY OF UNDERWATER ACFM & UT

## - FPSO AND MARINE INSPECTION -

Magg310 enabled is a submersible robotic delivery system designed for underwater (and topside) deployment of NDT

Sensors Including:

- ✓ UT / PAUT / TOFD
- ✓ ECA / PECA
- ✓ ACFM
- ✓ REMOTE VISUAL INSPECTION

- Magg310 Enabled is a modular platform that features tool free mounting.
- Allowing multiple modalities to be deployed depending on the requirements, conditions and environment.
- ✓ 100m Operation Distance (100m tether)
- ✓ 60m depth rating
- ✓ 3.6m Per Minute Crawling Speed
- ✓ FULLHD160degreePanCamera10xOpticalZoom



Compliant ACFM Array Probe mounted to Magg310



## CORROSION UNDER INSULATION (CUI)

**CUI is a major Integrity threat for insulated piping in facilities, driven by moisture trapped between pipe/vessel external surface and insulation cladding**

- Pulsed Eddy Current Array (PECA) from PETRO-BASE enables CUI Inspection WITHOUT STRIPPING Insulation.
- Displaying C-Scans has never been faster, improving overall inspection productivity as much as 10 times



## **HEAT EXCHANGER TUBE /SHELL INSPECTION & PLUGGING**



**Petro-Base has the latest Heat Exchanger Tube Inspection Technology.**

### **Projects Performed:**

- Network Exploration and Production Company facility at Ebeno
- Mobil Erha FPSO



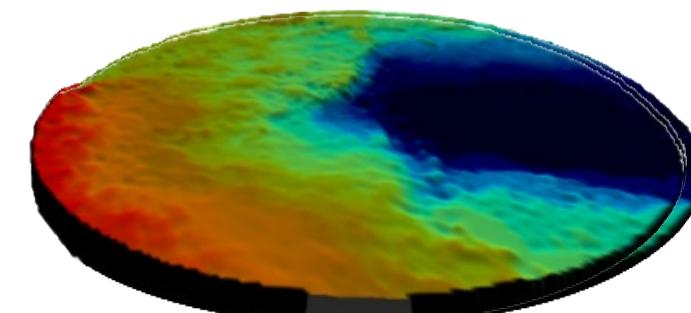
# SLUDGE PROFILING OF OIL TANK



## S.P.O.T DESCRIPTION

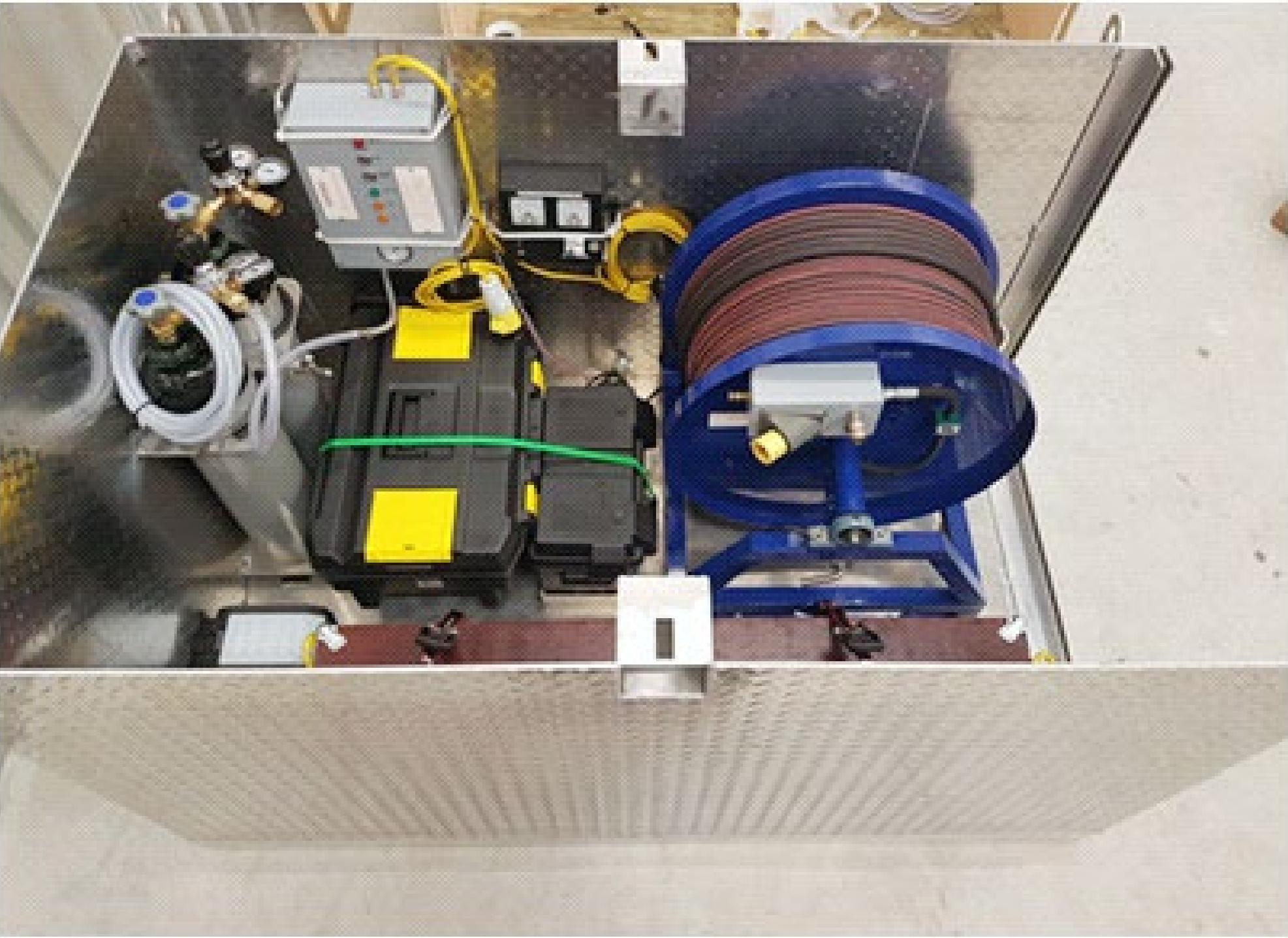
The SPOT system uses the latest patented sonar technology to scan the sludge in the base of the tank and produce a complete contour model of the sludge/oil interface. The purpose of the system is to obtain quantitative data of the volume of sludge in the base of oil storage tanks.

This technology has been used to conduct over 400 surveys worldwide providing customers with accurate sludge volumes and profiling in Crude Oil tanks.

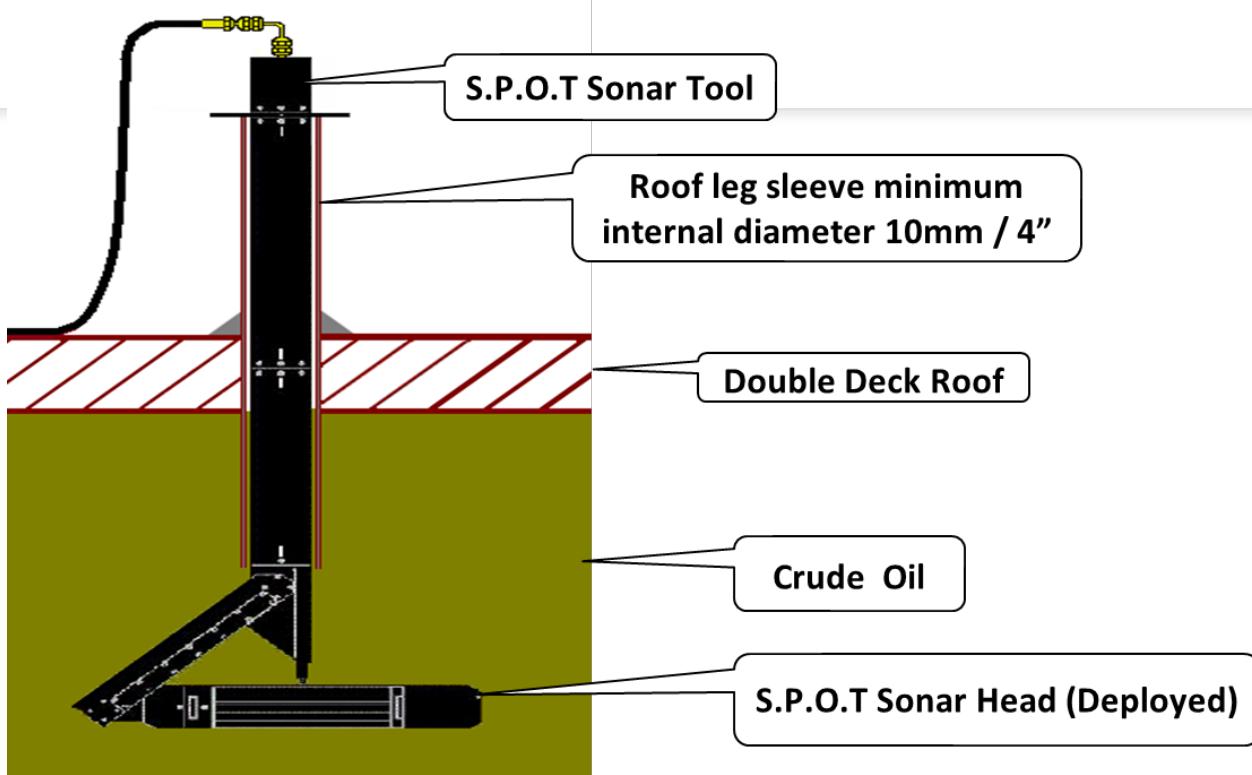


3-D Sludge  
Profile Result

## S.P.O.T UNIT

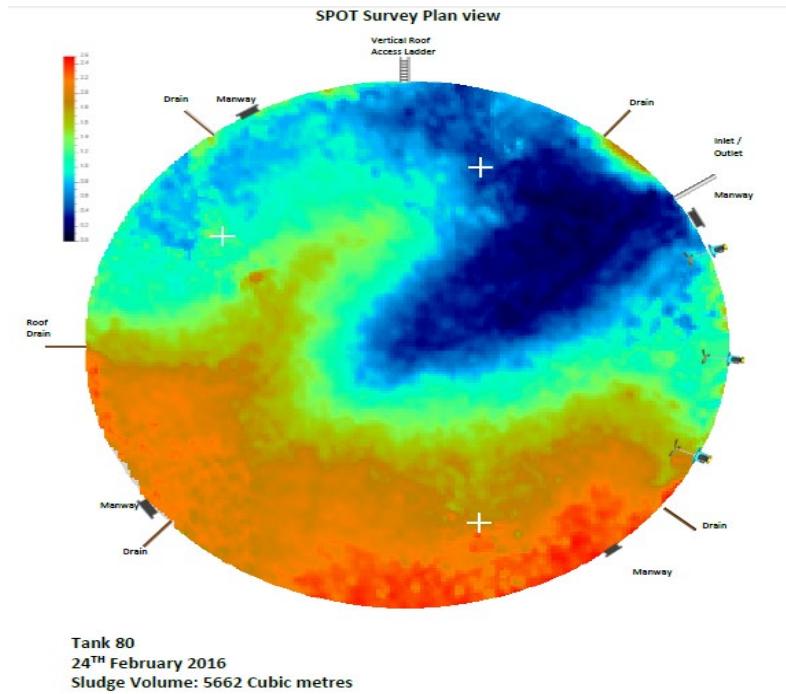


## HOW IT WORKS

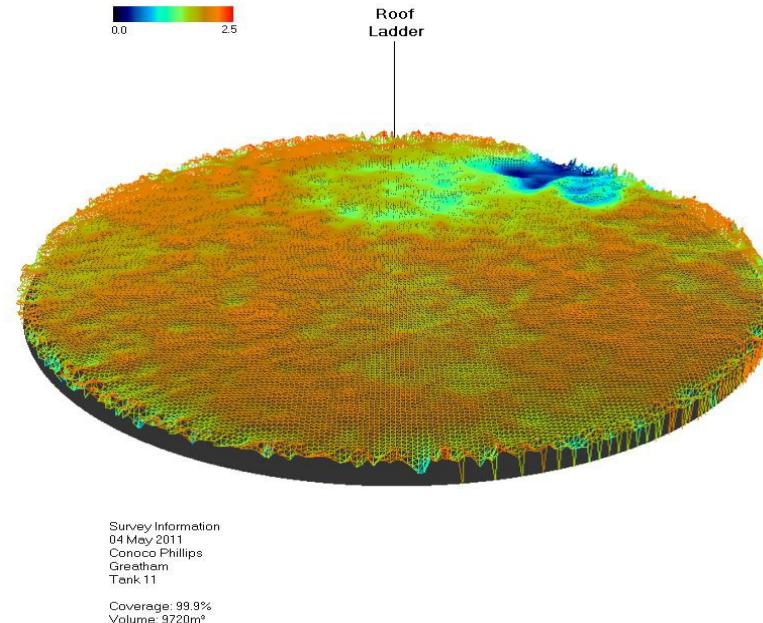


A NITROGEN purged system that is ATEX Certified and intrinsically safe. The transducer robotically rotates through 360 degrees, sweeping the surface of the sludge with up to 240,000 soundings. The Sonar beam has a range of around 30 meters. Processed acoustic echoes produce an accurate profile of the sludge/oil interface.

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## PLAN VIEW



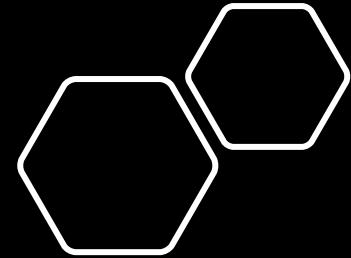
## 3 - D VIEW

# SLUDGE PROFILING OF OIL TANK PROJECTS



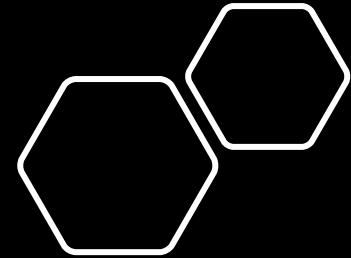
## WHY SLUDGE SURVEY

- ❖ To quantify and display sludge deposits in crude oil tanks thereby eliminating the major problem of manually quantifying the volume of sludge in the crude oil storage tanks
- ❖ Survey results will help tank owners to plan and take a decision on de-sludging of tanks for tank cleaning and maintenance, thereby avoiding unnecessary cost associated with uninformed status of sludge in tanks.
- ❖ To produce a complete contour model of the sludge/oil interface
- ❖ To monitor mixer running patterns
- ❖ To determine the quantity of Sludge in a tank. Sludge accumulation can reduce a tank's storage capacity and cause production problems further down the refining process.



## WHY SLUDGE SURVEY

- ❖ To assess loss of storage space due to the build up of sludge for capacity accounting
- ❖ To assess roof landing safety where a floating roof may be under threat of contact with sludge banks. Large sludge banks are a particularly serious concern when landing the roof of floating roof tanks as they can cause them to tilt and jam. Such incidents can create a hazardous situation that will prove challenging and expensive to rectify
- ❖ To facilitate sludge sampling by identifying where the sludge is lying in a tank.
- ❖ Emergency situations where there is an unknown operational problem



# S.P.O.T SAFETY WATCH

- **S**AFETY – CLASS 1, DIV. 1 CERTIFIED, NO DRAINING TANK
- **A**CCURATE DATA ACQUISITION – 5% ACCURACY
- **F**AST DATA ACQUISITION – 1 TO 2 DAYS COMPLETION
- **E**Nvironmentally friendly – NO HUMAN ENTRY

# DPR APPROVAL FOR DEPLOYMENT OF S.P.O.T IN NIGERIA

## MINISTRY OF PETROLEUM RESOURCES

### DEPARTMENT OF PETROLEUM RESOURCES

7, SYLVESTER UGOH CRESCENT, JABI ABUJA

P.M.B. No: 12650

01-2790000

Telephone:

Website: [www.dpr.gov.ng](http://www.dpr.gov.ng)



DPR/E&S/SCATA/TA/536/40

Ref. No:

20<sup>th</sup> October 2021

Date:

The Managing Director,  
Petro-Base Limited,  
Km 17 PH/Aba Expressway, (By Old Toll Gate) Iriebe,  
Port Harcourt, Rivers State.

Dear Sir,

#### APPROVAL TO DEPLOY SLUDGE PROFILER OF CRUDE OIL TANK (SPOT) TECHNOLOGY

Reference is made to your application referenced PBL/DPR/SPOT/05/21 dated 26<sup>th</sup> May 2021 on the above subject.

After a careful review of your submissions, the Department is pleased to convey the Director/CEO's Approval to deploy your Sludge Profiler of Crude Oil Tank (S.P.O.T) technology into the Nigerian oil and gas industry.

This approval shall subsist under the following conditions:

- a. All Guidelines, Procedures and Standards for equipment/product set by the DPR and any other internationally recognized standards shall be fully complied with as well as relevant provisions in the Petroleum statutes.
- b. Submit hazardous area certification covering the equipment.
- c. Representatives of the Department shall participate in all phases of the technology deployment including field trial and monitor its service performance over a period of three (3) years.
- d. The deployment of the technology shall be conducted in an accident-free manner as you will not be exonerated from damage or loss arising from its usage.
- e. This approval is valid for three (3) years effective from the date on this letter.
- f. You are required to communicate to the Department any changes in the design and performance characteristics of the technology, failing which such changes automatically render this approval invalid.

Please note that any reference to this approval without stating all attached conditions shall constitute grounds for its withdrawal by the Department.

Yours Faithfully,

A handwritten signature in black ink, appearing to read "Engr. Akenyi S. Musa".

Engr. Akenyi S. Musa Ph.D., FNSE

For: Director/CEO, Department of Petroleum Resources



# TANK CALIBRATION & SETTLEMENT SURVEY

We survey and analyse vertical storage tanks for structural anomalies which impair and subsequently compromise the efficiency and integrity of a vertical storage tank;

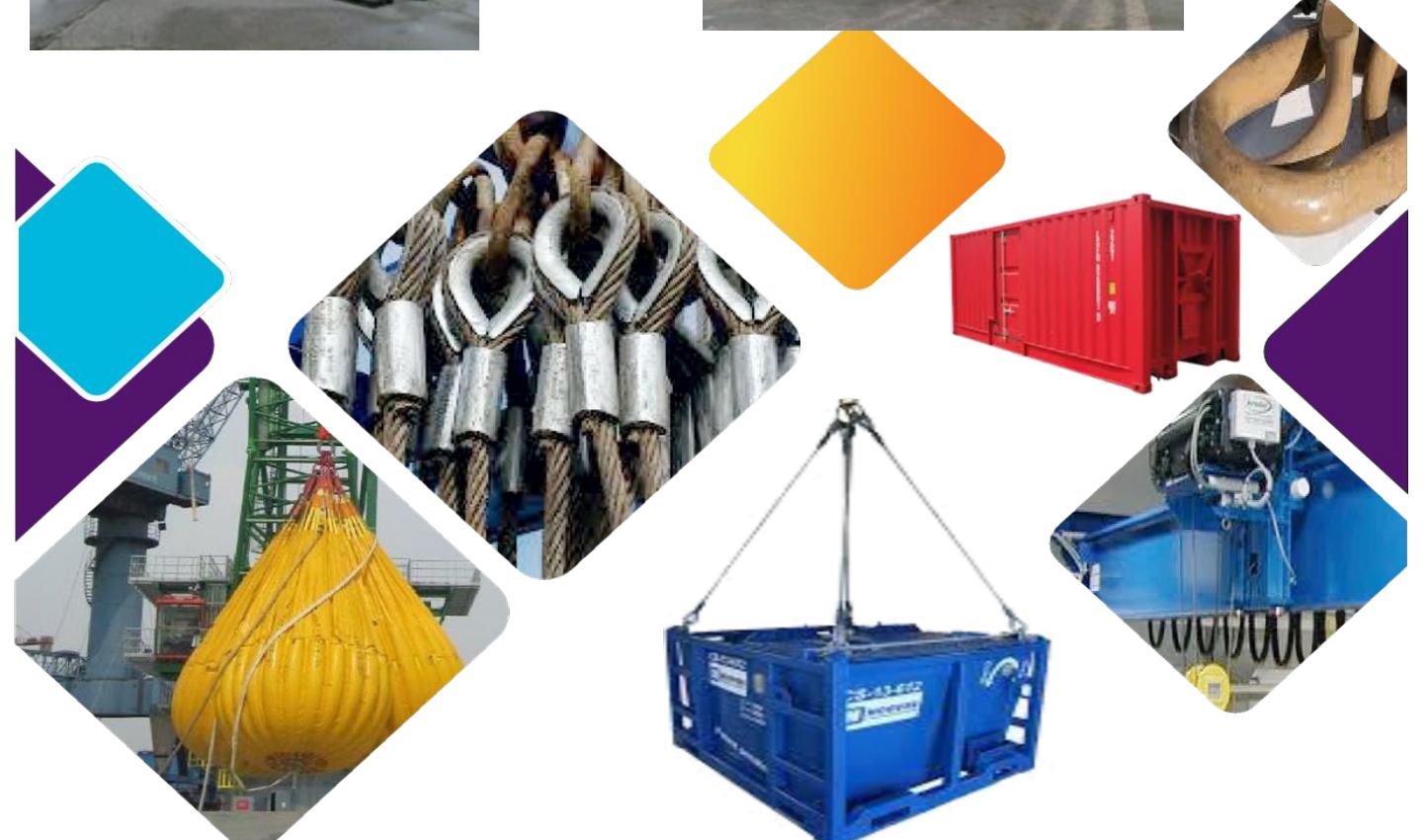
## Methods:

- Electro Optical Distance Ranging (E.O.D.R)
- Shell Roundness (O-O-R)
- Shell Verticality (O-O-V)
- Shell Differential (O-O-P)
- Floor Sagging
- Edge Settlement
- Floor Settlement

# **ROPE ACCESS, LIFTING AND HOISTING INSPECTION / CERTIFICATION**

Petro-Base Inspectors are certified to LEAA, Factory ACT, ASNT and Crane Tech. We Inspect and certify the following lifting gears:

- ✓ Forklift
- ✓ Mobile Cranes
- ✓ Overhead Cranes
- ✓ Slings
- ✓ Chain
- ✓ Shackles
- ✓ Baskets
- ✓ Containers



# TRAINING AND CERTIFICATION SERVICES

Our courses are delivered at Petro-Base Training Center and we offer On-site Training on request.

- The courses are accredited by professional trade associations IADC DIT and delivered in accordance with awarding body's guideline and approved codes of practice.
- Our instructors undergo train-the-trainer (TTT) certification periodically and are experienced.
- The training covers both theoretical and hands-on experience to help improve the skills and knowledge, thereby delivering high quality training consistent with the culture of the PetroBase Group as an organization



Self  
Loader  
Operator



Safe Use Of  
Lifting  
Equipment



Overhead  
Crane  
Operator



Mobile  
Crane  
Operator



Backsman  
/Slinger

Forklift  
Operator



Offshore  
Crane  
Operator



# **DRILLING EQUIPMENT/DRILL PIPE/TUBULAR INSPECTION SERVICES**

Petro-Base has been involved in Drilling Equipment/Drill Pipe/Tubular Inspection for over two decades.

We have qualified and certified Inspectors with many years of experience in various aspects of inspection.



# INSPECTION STANDARDS

PETRO-BASE USES  
THE FOLLOWING  
INSPECTION  
STANDARDS

API 5CT Casing and  
Tubing Specification

API RP 5C1 –  
Recommended Practice  
for Care and Use of  
Casing and Tubing:

API RP 7G –  
Recommended Practice  
for Drill Stem Design

API Spec 5B: Threading,  
gauging and inspection  
of casing, tubing, and  
line pipe threads

API RP 5C5/ISO  
13679:2002 –  
Recommended Practice  
on Procedures for Testing  
Casing and Tubing  
Connections:

API RP 7G-2 –  
Inspection and  
Classification of Used  
Drill Stem Elements

API RP 5B1: Gauging  
and inspection of  
casing, tubing, and line  
pipe threads

Spec 5CT –  
Specification for Casing  
and Tubing

DS CAT. 1-5 - Inspection  
Program for Drill Pipe

API RP 5A5/ISO  
15463:2003 – Field  
Inspection of New  
Casing, Tubing, and  
Plain-End Drill Pipe

Spec 5DP/ISO  
11961:2008 –  
Specification for Drill  
Pipe:

# NATURAL GAS PIPELINE NETWORK AND DISTRIBUTION



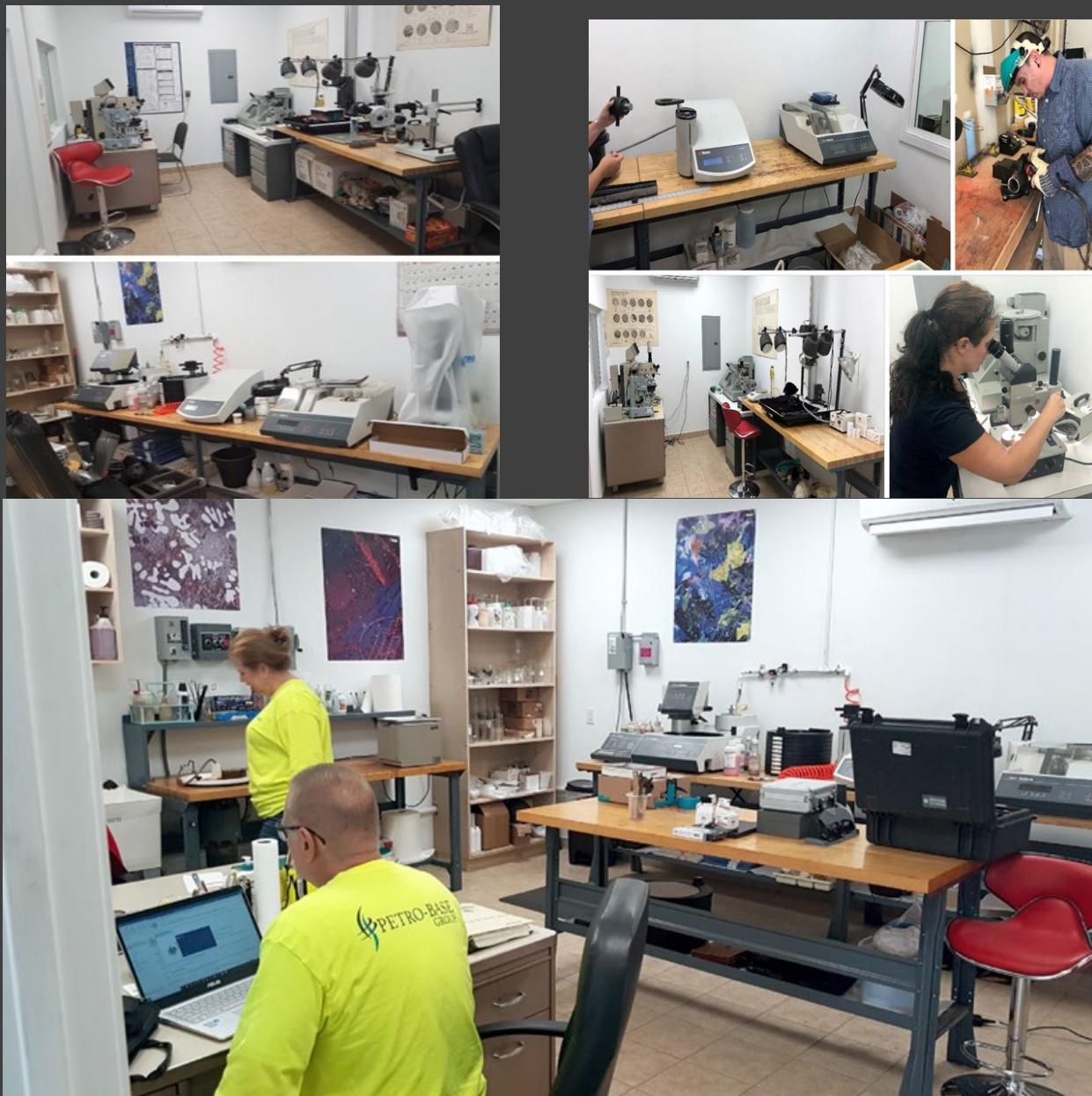
PETRO-BASE has signed an Unincorporated Joint Operating Agreement, as the OPERATOR of the “**NGML - PETRO-BASE IMO AND ABIA STATE GAS DISTRIBUTION JV**”), with the NIGERIAN GAS MARKETING LIMITED (a Subsidiary of the Nigerian National Petroleum Corporation).

In this arrangement, Petro-Base is responsible for the Infrastructural development across Imo and Abia States, and for the Distribution of same to various industries.

# METALLURGICAL FAILURE ANALYSIS AND FORENSIC INVESTIGATION

Petro-Base has one of the best Mettalurgical Failure Analysis laboratory in the Gulf of Mexico, providing;

- **Metallography**
- **Corrosion Assessment**
- **Microscopic Assessment**
- **Fractography**
- **Mechanical Properties Determination**
- **Fitness-For-Service Assessment**
- **Broad Based Laboratory Equipment Supplies and Installation**



# WORLDWIDE CLIENTS



Hotline



PEMEX®

