Onshore & Offshore Company Services for Hydro Geophysical and Geotechnical, Drilling and soil investigation lab

SERVICE

- 2D Hi-Res Digital Seismic Survey
- Analogue Geophysical Survey
- Onshore, Nearshore and Offshore Geotechnical/Soil Investigation Survey Services
- Meteorological and Oceanographic Investigation
- Seismic Data Processing
- Construction Survey & Support Services
- Navigation and Positioning Services
- Hydrographic Survey Services
- Land Survey and Land Seismic Survey Services
P.T. Calmarine Surveys Indonesia’s is a Hydro Geophysical and Geotechnical, Drilling and soil investigation lab company. PT.Calmarine is now 100% Indonesian owned within the Tripatra Group. Formerly a foreign investment joint venture between Oceaneering International of Houston, Texas, USA one of the offshore industry’s most respected provider of underwater and early production systems, and the world’s largest operator of Remotely Operated Vehicles (ROV’s) and Tripatra Engineering of Jakarta a long established, leading provider of multidisciplinary engineering services of the highest repute.

Calmarine has conducted business in Indonesia continuously for 30 years, providing Mining, Oil and Gas Companies and their Contractors with Survey, ROV, Field and Plant development support and related services. With modern offices, Survey and ROV repair facilities, and a data centre for processing, charting and report production located at the Beltway Office Park, Jalan TB. Simatupang No. 41, Jakarta Selatan 12550, with fully equipped branches at Handil III, East Kalimantan where it has provided survey services to TotalFinaElf in the Mahakkam Delta and offshore fields for a decade.

Calmarine continues to provide its clients with “cost effective solutions for harsh environments”. Our major clients have included Arco (later BP) companies Atlantic Richfield Indonesia Inc, Arco Bali North, Arco Wiriagar, BP’s Tangguh LNG) as well as Total-Fina-ELF, Unocal Indonesia Co, Conoco, Premier, Gulf Indonesia Resources, Cnooc, Kodeco, Santos, KNOC, Pertamina, Donggi Senoro, Petronas Carigali Indonesia, Serica Energy, EMP, Eramet, Newmont and offshore contractors like Halliburton, Kellog Brown and Root, Saipem, Worley Parson, IKPT, Tripatra, JGC, Penta Ocean, Taisei, Kisojiban, Nisconi, Leighton, Global Industries, Hyundai Heavy Industries, Merlasakti etc as well as the State Organizations, Nusantara Regas PGN and PLN etc.
PT. Calmarine Operates MV. Ocean Rajawali and MV. Voyager. The vessels are a dedicated vessel for geophysical and geotechnical survey and fully equipped with analogue and 2D High Resolution Geophysical survey equipments and Geotechnical soil inspection system such as Seabed CPT, Vibro Coring, Gravity coring, and Grab sampler. Each Vessel is also equipped with ROV type Seaeye Falcon and Se Eye Falcon DR.
Company

PT. CALMARINE

Address
Beltway Office Park, Annex Building 2nd Floor
Jl. TB. Simatupang No. 41, Cilandak
Jakarta 12550, Indonesia
Phone : 021 – 780 5992
Fax : 021 – 780 4829
Email : ptcalmarine@calmarine.ptc.co.id
Website : www.ptc.co.id

Board of Directors
1. Priyo Darmo
2. Supandrijo
3. Jonathan Indrabajra (jonathan@calmarine.ptc.co.id)

Expertise
Arief Siswanto   Survey Operation manager
Doni Santoso   Geotechnical Projects manager
Hadi Mulyanto   Geotechnical operation manager
M. Ariansyah   Hydrographic party Chief
R. Junus Darmawan   Hydrographic party Chief
Arie Pramudya   - Oceanographer
Dodi Suparman   - Senior Geophysicist
Febi   -Senior Geophysicist
Bangun Tampubolon   -Electronic Data Processor
CORPORATE DIRECTORIES

Head Office
Beltway Office Park, Annex Building 2nd Floor
Jl. TB. Simatupang No. 41, Cilandak
Jakarta 12550, Indonesia
Phone : 021 – 780 5992
Fax : 021 – 780 4829
Email : ptcalmarine@calmarine.ptc.co.id
Website: www.ptc.co.id

Representative Office
Jl. Taman Vinolia Blok P4
Komplek Pesona Mediterania
Balikpapan Baru
Phone : 0542 – 874 204
Fax : 0542 - 780 479
DIVISIONAL STRUCTURE

PT. CALMARINE

GEOTECHNICAL

OFFSHORE  NEARSHORE  ONSHORE

SURVEY

TOPOGRAPHIC SURVEY  GEOPHYSICAL SURVEY  METOCEAN SURVEY
Calmarine Geotechnical Division provides high quality and cost effective geotechnical services operated by highly qualified Geotechnical Engineers and Geologist and reliable geotechnical equipment i.e. various type of CPTu (piezocone), 20 Tons Crawler CPT Pusher, Truck Mounted 20 Tons CPT pusher twenty various size Top-Drive drill rigs range to 100-750 meters drilling hole complete with automatic SPT and Monitor while drilling, APAGEO DPTH, Menard Pressure meter, Percussion Drilling, Wireline Coring, BKI certified small jack up pontoon, two BKI certified portable pontoon, Vibrocorer, AP Van Den Berg Seabed CPT, Wison Wireline CPT, PS Logging and Kullenberg Gravity corer. All equipment is normally inspected prior to use by our clients who have included BP Tangguh, CNOOC, Kodeco, Petronas, Pertamina, Hyundai Heavy Industries, Kellog Brown and Root, Petrosea, Penta Ocean, Theiss, PLN, PGN and many others.

Calmarine have designed and constructed a specialized portable near-shore geotechnical drilling platform i.e. BKI certified small jack up pontoon, with 4-point mooring BKI certified Pontoon, which are portable and can be assembled at site without supporting by heavy equipment. Those equipment were utilized successfully for 75m depth drilling up to 30m water depths, 3 knots currents at hard seabed for some BP, JGC works in Tangguh LNG, Donggi Senoro, Pertamina Balongan, Pertamina Lawe-Lawe, Eramet Weda bay, and Petronas Ketapang projects with highest safety performance.

Calmarine is fully supported by CPT leader company Lankelma from its base in Singapore providing a seabed CPT work for pipeline and cable, and 10tons or 20tons CPT for platform and jack up rig geotechnical survey, and has an access for providing a geotechnical vessel for offshore geotechnical survey (up to 700m water depth)

PT.Calmarine Laboratory facility is used for doing the Laboratory soil test including physical, mechanical, chemical test. The standard soil laboratory test is performed in accordance with ASTM or BS standards. Engineering geotechnical analysis for foundation of platform, jack up and other structures is carried out by experiences geotechnical expert using the latest engineering methods and softwares in accordance to API standard or other approved standards.
GEOTECHNICAL SURVEY
SCOPE OF SERVICE

- Onshore Drilling
- Near Shore Drilling
- Offshore Drilling
- Undisturbed Sampling
- Automatic Standard Penetration Test
- CPT/CPTU/CPT Seismic
- Boring Log
- Laboratory Testing
- Field Resistivity
- Suspension PS Logging
- Menard Pressure Test
- Percussion Drilling

12 M Offshore Vibrocore Soil Retrieval DROP CORE (KODECO)

12 x 12 meters Jack Up Pontoon (Equipped with Four Mooring for operational Depth 1-40 Meters water Depth) Eramet -Petronas- Pertamina Projects.

Seabed CPT for Offshore Pipe route and cable route survey (Pertamina Balongan and Pertamina Lawe-Lawe project)
Geomil 20 TON Cone Penetration Truck (BP Tangguh Phase 2 - Petronas Bukit Tua - Next Projects)

Geomil 20 TON CPT CRAWLER (Eramet Project Weda Bay)

Geomil 40KN Seabed CPT (Offshore Pipe Route Survey)

Percussion Drifter and Pusher

Depth Rating:
- NQ Size 150m
- HQ Size 100m
- PQ Size 70m

Geomil 20 TON Cone Penetration Truck (BP Tangguh Phase 2 - Petronas Bukit Tua - Next Projects)

Equipment with Automatic SPT Hammer (CallHammer1)

Heli Portable

www.ptc.co.id  ptcalmarine@calmarine.ptc.co.id
Apafor heavy dynamic Penetrometer

(Substitute for Road strength measurement and cheaper compare by doing soil drilling)
As mentioned above, Calmarine owns and operates its own survey vessels. Our vessels operating philosophy is to complement our own vessel with vessels available on short or long term charter. We can provide our clients with the best, most cost effective vessel combination for the work at hand.

Projects requiring additional vessels or vessels with specific capabilities are chartered with mobilization and demobilization costs, vessel layout and equipment in mind to ensure a smooth, successful and cost effective operation.
MV. Ocean Rajawali

MV. Ocean Rajawali is specifically designed for nearshore to Offshore Hydrographic, Geotechnical and Geophysical survey. The Shallow draft of the Vessel gives the advantage to operate in shallow water area and ideal for nearshore hydrographical, Geotechnical and geophysical survey operation. The vessel is fully equipped with Hydrographical, Met Ocean, Geophysical, Geotechnical and Small ROV equipments. Data Processing for Side Scan Sonar, Sub bottom profiling, Magnetometer, and Seismic are available onboard.
MV VOYAGER

Multi-role Survey Vessel

The survey vessel, M.V. Voyager specifically designed as a multi-role survey, Geotechnical /ROV vessel, MV. Voyager is permanently mobilized and can be rapidly deployed to locations within South East Asia.

The vessel is fitted with two free fall winches for drop core, a survey pole, a designated 40 KW generator for survey equipment, welding room & facilities, a 5 ton a frame and one 3 ton & one 1.5 ton hydraulic crane. MV. Voyager has 70m2 of sheltered deck space and 60 m2 of open deck space. She has a multi role capacity and is employed on a variety of tasks for the oil & gas industry, the cable sector, environmental agencies and government agencies for high-resolution data acquisition.

MV. Voyager’s key activities are:
• Geotechnical Soil Investigation
• ROV inspection with four points mooring
• Hazard / Debris surveys
• Mineral surveys
• Drop core surveys
• Cable route surveys

www.pte.co.id          ptcmarine@calmarine.pte.co.id
• Swathe bathymetry (2000m)
• Shipwreck and air accident searches
• Environmental survey
• Scouting vessel
• Filming
• Fish surveys
• Base vessel for AUV and submersibles
• High standard accommodation vessel
ROV (Remote Operated Vehicle)

Falcon DR Depth Rated 1000M
As Built Pipe Survey Support

Seaeye Panther XT Plus
Inspection Maintenance and Repair
HYDROGRAPHIC & GEOPHYSICAL SURVEY

SCOPE OF SERVICE

- Bathymetry (Single beam & Multi beam Sounding)
- Hydrographic Survey Charting
- Real Time Dredging Assistance
- Side Scan Sonar (Seabed features and pipeline free span interpretation)
- Sub Bottom Profiling (Shallow Sub seabed stratigraphy)
  - Chirp
  - Boomer
  - Sparker
- Land and Marine Magnetometer (UXO, cable, Pipeline Detection)
  - Geometric Single Magnetometer
  - Geometrics Gradiometer
- 2D Hi-Res Digital Seismic survey
- Pipe and cable tracker survey
- Site hazard survey
- Pre-drilling survey
- Pipeline and cable Route survey
- Geophysical and Geotechnical Correlation Study
LAND & ENGINEERING SURVEY

SCOPE OF SERVICE

- Geodetic Survey
- Topography Survey
- Cut & Fill Volume Analysis
- Survey Control Point Benchmark
- Underground Utilities Detection
- Boundary check and verification for Deforestation for construction
- AS built and assisting construction work
METOCEAN SURVEY
SCOPE OF SERVICE

- **Weather Monitoring and forecasting**
- **Ocean & River Current Measurement & Analysis**
- **Tidal Measurement, Analysis & Prediction**
- **Wave Measurement, Prediction & Extreme Waves**
- **Oceanography Processing**
Meteorological and Oceanography Research at Aceh

Real Time Wave and Current Observation
Construction Survey & Support Services

Scope of Works

- Barge/Tug management system
- Acoustic Positioning
- Pipeline & Jacket installation survey Support
- Spool piece measurements
- Pre/post pipeline installation survey
- Onshore/offshore platform dimensional survey
- Positioning & survey support for dredging marine construction work
- Offshore rig, barge, vessel positioning

Barge, Rig, Anchor handling tug, offshore construction, Pipeline laying Management System management system

C-Nav Globally Corrected GPS Decimeter to Centimeter Accuracy
ACCREDITATION

IMCA CERTIFICATE

This is to certify that

PT Calmarine

is a Contractor (Co) Member of the International Marine Contractors Association participating in the work of the Offshore Survey Division in the Asia-Pacific Section

Johan Rasmussen
IMCA President 2009-10

Hugh Williams
IMCA Chief Executive

IMCA members undertake to act as responsible members of the Association and are willing to be audited against compliance with relevant IMCA guidelines by their clients.

Valid until: 1 March 2011

www.imca-int.com
Equipment List

Positioning and Motion System

1. C-nav Globally Corrected GPS C-Nav
2. C-nav Receiver 2050 M – Two (2) Units
3. C-Nav Receiver 2000G - Three (3) Units
4. C-Nav Receiver 2000 – Two (2) Units
5. C-Monitor
6. Trimble 5700 RTK Receiver – Three (3) Units
7. Trimble 4000ssi RTK Receiver
8. MS 860 System True heading GPS system
9. TSS Meridian Surveyor 2000 Gyro Compass
10. TSS-05 heave pitch roll yaw Motion Sensor
11. PDL/EDL Telemetry system
12. Intuicom long range telemetry system for DGPS network
13. Sonardyne Long and ultra-Short base-Line System
14. Tracklink USBL System

Hydrographic System

1. Odom DF-2000 MK-III 12200 Khz (Dual frequency Echo Sounder)
2. Simrad EA-500 (Dual frequency Echo Sounder)
3. Atlas Deso-17, 30 Khz /210Khz (Dual frequency Echo Sounder)
4. Seabeam 1050D 50-180 Khz (Multibeam)
5. Seabeam 1050D 180 Khz(Multibeam)
6. Reason Seabat 9001,445 Khz(Multibeam)
Geophysical Instrument

1. C-Max CM II Deep Water Side Scan Sonar, 100/325 Khz
2. Dual Frequency GeoAcoustic Side Scan Sonar 159D Tow Fish
3. Geometrics G-882 marine Magnetometer
4. S126 B X-Star Full Spectrum Digital Sub bottom profiler
5. Catamaran Boomer and Squid Sparker System Complete with Teledyne 8 hydrophone single channel. Energy source 3500 Watt capacitor bank
6. Ultra High Res 24-48 Channel Triton Elics Delph seismic system
7. Air Gun model 2800-LLX
8. 96 Channel ION Hi-Res Seismic system

Oceanographic Equipments

1. Teledyne Workhorse Monitor ADCP, Top to Bottom 1200/300 Khz
2. Valeport Midas CTD, Fs Pressure sensor 300Db
3. Monitor Sound Velocity Profiler Valeport
4. Valeport Tide master Tide gauge Model N-750
5. SeaBird 92 Tide and Wave gauge
6. Nortek AWAC Ocean Wave and Current real time monitoring system

Meteorological Equipments

1. Rm Young
2. Capricorn 2000 Scientific Weather monitoring system
3. Oregon Monitoring system

**Geotechnical Equipment**

1. Two units 9 x 9 M Pontoon for nearshore drilling. Operational Water Depth 0-40 Meters
2. One Units 12x12 M Pontoon for nearshore drilling. Operation Water Dept 0-50 Meters
3. One Unit 12x12 M jack Up Pontoon for nearshore drilling. Operation Water depth 0-40 Meters Water Depth
4. Top drive Drilling Rig Cal 150 Meter with Automatic SPT – Six(6) Units
5. Top drive Drilling Rig Cal 100 Meter with Automatic SPT – Four(4) Units
6. Top drive Drilling Rig cal 200 Meter With Automatic SPT- Three(3) Units
7. Percussion drilling Rig CalP 300 meter With Automatic SPT- One(1) Units
8. Onshore deep Drilling RH 400 500 meter Eurodrill With Automatic SPT- One(1) Units
9. 3 meters Vibro Core One (1) Unit
10. 12 meters Vibro core One (1) Unit
11. Kullenberg gravity core 350 Kg One (1) Unit 3 Meter soil retriwal
12. Kullenberg gravity core 750 Kg One (1) Unit 3 Meter Soil Sample
13. Twenty tons CPT Pusher Envicon truck Mounted One (1) Unit
14. Twenty tons CPT pusher Envicon Crawler Mounted One (1) Unit
15. Twenty tons CPT pusher Envicon stand alone One (1) Unit
16. Ten Tons CPT pusher Envicon Stand Alone One (1) Unit
17. Geomil CPTU Cones Eight (8) Units
18. Geomil CPTU readout two (2) Units
19. Geomil CPTU Seismic electrical cones Four (4) units
20. Geomil CPTU Seismic Readout One (1) Unit
21. SPT Man for SPT Energy measurement
22. Resistivity meter
23. Push sampling
24. Grab sampling
25. Lim-Se Monitor While Drilling parameter
26. ApvdBerg Seabed CPT Roson 25/45 KN wire system and wireless seabed penetrometer
27. Apageo Menard Pressure meter
28. Apageo DPTH
29. OYO PS Logging system
30. OYO McSEIS-SX 3 component downhole clamping tool

**ROV Equipment**

1. Seaeye Falcon DR
2. Seaeye Panther XT Plus
Software List

1. Trimble Hydro Construction
2. EIVA
3. Quinsy Multibeam and navigation hydrographic system
4. Fladermaus 3D simulation bathymetry software
5. Triton SS Office Side Scan Sonar processing, interpretation, mosaic and GIS application
6. Triton Map, GIS Mosaic and Mapping
7. SS Logger Side Scan Sonar Data acquisition
8. Triton SS Mosaic Side Scan Sonar Mosaic Processing
9. Promax 2D Processing
10. Seismic Unix Processing software
11. Geoframe 4 Schlumberger Seismic Interpretation software processing system
12. SonarWizMap+SBP Side Scan Sonar processing and Interpretation system complete with Sub Bottom Profiling System
13. Hysweep Multibeam Processing System
14. Dregepack Hypack

- Full Navigational and Dredging support
  - Cutter Suction, Hopper, Excavator, and Clamshell Application
  - Digging Efficiency
  - Precise Dredge Positioning
  - DTM with Volumes and Reports
OPC compliant and PLC interface capable

Meets USACE Silent Inspector Requirements

Turn-key system available

15. Trimble Geometrics Office baseline Geodetic Control processing system

16. Mathlab

17. Surfer 10 gridding, Contour and surface mapping

18. Grapher 8 2D and 3D Mapping

19. Voxler 2 3D data Visualization

20. MapViewer 7 thematic Map and Spatial analysis

21. Didger 4 Digitizing and coordinate conversion

22. Strater 2 Well log and borehole plotting

23. WinADCP ADCP processing System

24. Nortek Storm Current and Wave Processing System

25. Nortek SeaState Current and Wave real time monitoring and processing system

26. Oasis Montaj UXO detection and Earth Science Processing Software

27. AutoCad 2004 Data Charting and maping Drawing

28. Hydropro Barge, Tug and Construction Software

29. GeoNav USBL Calibration System
Survey Vessels:

1. MV. Ocean Rajawali
2. MV. Voyager

WES SERVE SAFELY-PROFESIONALLY
AND CAUSE NO HARM