

Survey Vessel “M/V Horizon Surveyor”



General

Type of vessel	Utility
Class	ABS+A1+AMS
Flag	Panama
Built	Cheoy Lee, Hong Kong
Year of Build	2002
Flag	Panama
Length	40.2 m
Beam	10.0 m
Draft	4.2m
Displacement	991 MT
DWT	480 MT

Machinery

Main Engines	2 x CAT 3508B, 1000 HP ea.
Bow Thrusters	Tunnel 200 HP
Propeller	CPP in kort nozzle
Generators	Caterpillar 3306B
Electrical power	2 x 160KW, 415/3/50
Emergency generator	1 x 6.3KW, 240/1/50
Range	25 days / 7200 NM

Capacities

Deck cargo capacity	88 T
Deck space	17 x 9 m = 153 m ²
Deck wood sheathing	16 x 8 m = 128 m ²

Electronics

DP System	Alston C-Series
Radar	Furuno FR-8051
Aux radar	Furuno
Depth sounder	Furuno FE-700
Radio	Sailor RT4822
Autopilot	Furuno FAP-330
Satellite compass	SC60 Satellite Compass
Magnetic compass	Lilley & Gillie MK2000
GMDSS	Portable ICOM VHF
GPS	Furuno GP-36 DGPS
PA System	Vingtor SPA-120 P.A.

The Horizon Surveyor is a fully mobilized Geophysical Survey Vessel, capable of full geophysical and hydrographic surveys, ROV surveys, and environmental surveys. The vessel is mobilised with but not limited to:

- Multibeam echo sounder
- Singlebeam echo sounder
- Sub Bottom Profilers
- Side Scan Sonar
- Magnetometer
- USBL
- Observation / Inspection class
- ROV
- Drop core sampler
- Grab sampler
- Roson CPT
- Vibrocoring

Accommodation

For 12 crew	2 x 1 + own toilets
+ 2 Client's	1 x 2 + own toilet (Client)
+ 14 Passengers	1 x 2
	1 x 4
	1 x 4
	3 x 4
	1 x 2

Cargo Pumps

MDO	25 HP
-----	-------

Tanks

Water ballast	35 m ³
Fresh water	187 m ³
MGO	179 m ³
Hydraulic oil	3.7 m ³
Dirty oil	2.7 m ³
Bilge holding	2.6 m ³
Sewage holding	5.3 m ³

External Fire Fighting

Pumps capacity	1200 m ³ /Hr
Crane for fast boat	1.5 T SWL
Tugger	1 x 2T @ 9 m/mn
Anchors	2 x 780 Kg
Stern roller	3 m x 1.5 m Diameter

Safety Equipment

Welding/cutting	Machine c/w attach
Liferafts	2 x 25 persons
Rescue boats	6 persons, 25 HP
H2S Gas Detection On air inlet	
<i>Vessel meets SOLAS requirements. GMDSS for A2</i>	

Note: This specification is subject to change without notice.

HSC MV “Zakher Dolphin”

The “Zakher Dolphin” is a fully outfitted survey vessel. She is permanently mobilized with a complete geophysical suite, including full onboard processing capability.

Her capabilities include pipeline and cable route surveys, platform and drilling rig site surveys, sonar as-built surveys, and high resolution site surveys.

Survey Equipment

- Single beam echosounder
- Multibeam echosounder
- Sidescan sonar
- Sub-bottom profiler
- Applied Acoustics Boomer
- Magnetometer
- Gravity coring equipment
- C-Nav DGPS receivers
- Sonardyne LUSBL
- QINSy online and offline survey suite
- Digital hi-resolution 24-96
- Channel seismic – Optional
- ROV – Optional
- Seabed CPT – Optional

General

Name	Zakher Dolphin
Built	2006/Singapore
Flag	St. Vincent
Class	ABS
Accommodation	30 Persons Incl. Crew
LSA	As per SOLAS, Class & Flag Requirement

Dimensions

Length O.A.	43 m
Beam Moulded	10.00 m
Draft (Max.)	3.60 m
Complement	30 men



Machinery

Main Engine	2 Nos. Yanmar 8N21 A-SV, Total 3600 BHP F.P.P
Propellers	
Generators	3 x Cummins, 145 kW
Bow Thruster	3.2 tons, Electric Driven
Station keeping	Alstom joystick

Deck Machinery

Windlass	1 x 2.3 tonnes @ 10m/min
Anchors	2 x 660 kg HHP anchors
Chain	1x302.5 m x 22 mm Stud Link Chain
Capstan	1 x 3 tons
Crane	4 tons @ 6 m reach Electro- Hydraulic Knuckle boom crane

Navigation

Radar	1 x Furuno FR-1510 MK3 1 x Furuno 1721 MK11
Magnetic Compass	1 x Saura
Echo Sounder	1 x Furuno FE -700
Navtex Receiver	1 x ICS NAV 5
GMDSS	Covering Area A3
VHF	2 x Furuno FM-/8500
AIS System & Security	1 x McMurdo MT-1
Inmarsat-C	1 x Furuno Felcom15

Performance

Speed	10 knots (normal) 12 knots (maximum)
-------	---

Fuel Consumption

Full Speed	8 tons/day
Survey	3.5 tons/day
Economic	5 tons/day
Bollard Pull	45 Tons

Note: This specification is subject to change without notice

“M/V Beas Dolphin” With Fully Heave Compensated Offshore Drilling Rig



GEOTECHNICAL EQUIPMENT

- Fully Heave Compensated Drill Rig
- Wison-APB Sampling, PCPT and Down-hole Vane Testing Equipment
- Containerized Mud Mix & Transfer system
- Fully Equipped Offshore Soil Testing Laboratory

SURVEY EQUIPMENT

- C-Nav DGPS
- TSS-Meridian Gyrocompass
- QINSY Navigation Suite and offline processing

GEOPHYSICAL EQUIPMENT (subject to requirement)

- Multi and single beam echosounder
- Side Scan Sonar
- Sub bottom profiler
- Magnetometer
- Shallow draft survey launch
- Offline processing and drafting suite

BUILT

Builder:	Alcock Ashdown Gujarat Ltd
Class:	ABS
Flag:	Mauritius
Year Built:	December 2009
IMO No.:	9413482

DIMENSION

Length overall:	63.00 m
Length BP:	58.80 m
Breadth MLD:	14.6 m
Depth MLD:	5.5 m
Draft max:	4.00 m
Dead weight:	1309.5 T
Gross tonnage:	1615
Clear deck space:	Approx. 335 sq.m.
Frame spacing:	600 mm
Superstructure / Deck house height:	2.4 m
Bridge (wheel house) height:	2.7 m
Deck loading:	10T/sqm

MACHINERY

Main engines:

2 x 2000 BHP (ISO rating)
(Caterpillar make model 3516B)

Bow thruster:

2 x 200 KW (Electric motor, model HRP 2000 series type HRP 2001 TT)

Propulsion:

Twin CPP (Scana Volda model ACG 62/525)

Main DG set:

2 x 350 KW (Caterpillar, Model C – 18)

Shaft generator: 2 x 350 KW
(Stamford)

Emergency generator:

1 x 65 KW (Caterpillar, Model C-4.4)

Sewage Treatment Plant:

2 x 100 Person Capacity (Make: Evac)

Incinerator: 1 no.(Make: Team Tech)

Oily Bilge Separator: 1 no. (Make: Georim)

NAVIGATION

Radar:

S Band (10 cm) ARPA Radar

X Band (3 cm) Radar / with ARPA

(GPS connected to Radars)

VDR: Consillium

Echo Sounder Transducer:

Gyro Compass with two repeaters

Compass:

Magnetic Compass with azimuth mirror
(with spare compass bowl)

Auto Pilot:

Auto Pilot with off course alarm

Other GMDSS Equipments:

As per latest class / flag requirement

COMMUNICATION

UFC: Walkie Talkie – 4 sets

SSB: Additional SSB with output 250 watts

Radio

Telephone: 2 – way Radio Telephone – 3 sets

Sat-C: 2 nos (Make-JRC)

Telephone:

Vessel is fitted with Fleet Broad Band having Internet, email, Fax and telephone facility

LIFE SAVINGS APPLIANCES

2 nos Rescue Boat and other Life Saving Appliances to be as per latest SOLAS Fully complying with SPS Code 2004 (IMO-A534-13)

DECK EQUIPMENTS

Deck Crane:

- Plimsoll 5t crane at 10 m
- Sekwang 15T@10m, 10T@15m and 4.5@30m (API 2C)

Anchoring:

2 Nos. 1440 Kg. HHP Anchors and one spare onboard

Tugger Winches:

2 Nos., Pull:10T, Make: Plimsoll with 110 m. wire

Capstan: 2 Nos. Pull 5T, Make: Plimsoll

Mooring system:

4-Point mooring system having 1000m wires & 5T flipper delta anchor. Bridge and Local Controls. Tension and payout meters.

FIRE FIGHTING

Main Fire Pump:

2 nos electrical motor driven 60m³ / hr at 40 m head

Emergency fire pump:

Diesel engine driven 45m³ / hr at 40 m head

Fire detection and alarm system:

Heat / smoke detectors in accommodation, engine room, air conditioner room, Fire alarm system including manually operated call point meeting the SPS code requirements.

Major Fire Fighting Equipments

- Engine Room with fixed CO2 fire extinguishing
- Accommodation space with sprinkler system
- Paint Room with CO2 system
- 13 mos EEED as per Fire Control Plan
- Foot op. bellow type type breathing apparatus & SCBA

ACCOMMODATION

For 75 Persons (as per ILO 92),

49 SP & 26 Crew

Officers: 6 x 1 berth and

1 x 2 berth

Crew: 9 x 2 berth

Special Personal: 3 x 1 berth

1 x 2 berth

8 x 4 berth

2 x 6 berth

Conference Room: 2 nos

Project office &

Project store: 1 each

Hospital: 2 beds

Air conditioning and With 100% standby

Refrigeration: arrangement

Wheel House: Fitted with Fwd and

Aft control console

and equipped with

CCTV

Note: This specification is subject to change without notice.

HSC Nearshore Survey Launch



The survey launch is a dedicated shallow water survey vessel. She is permanently mobilised with a full bathymetric suite and DGPS positioning.

Additional equipment such as Swathe bathymetry system, side scan sonar, pinger and magnetometer can be added to the bathy suite to give a full nearshore survey solution.

Capabilities include nearshore pipeline and cable route surveys, construction, dredging support and environmental surveys. The survey launch is also road transportable with a trailer to enable her to work in an autonomous capacity.

All the survey systems are run from a dedicated 12v system. The boat is equipped all modern safety features that make the boat a SOLAS approved and class approved rescue boat. She is also lightweight making the launch and recovery procedure from bigger vessels a safe and efficient operation.

Survey Equipment

- DGPS Positioning system
- GPS gyro
- 200kHz Altimeter, (echosounder)
- Sidescan sonar
- Magnetometer
- Grab Sample
- Seabed Video Option
- QINSy online and offline survey suite

Vessel Specifications

Built:	April 2005
Length O.A.:	4.6m
Breadth (moulded):	1.7m
Minimum draft:	0.3m
Weight (light / full load):	650kgs / 1100kgs
Classification:	BV
Flag:	N/A
Type:	SOLAS approved Rigid Rescue Boat

Capacity

Maximum Capacity:	6
Survey Capacity:	4

Safety Equipment

- GRP buoyancy
- Certified fore / aft lifting mount
- Life Jackets (auto inflation)
- Bilge Pump
- Moulded Fuel Tank
- Pyrotechnics
- VHF radio
- Buoyant Oar
- Reflective Strips
- Boarding Ladder

Machinery Equipment

Main Engine:	1 x 40hp Marine Engine
Propeller Type ,	
Main Propulsion:	1 propeller with guards
Generators / Alternators:	2 x Truck Batteries

Note: This specification is subject to change without notice

HSC Geotechnical Drilling Vessel “DP2 Kestrel”

Geotechnical Equipment

- Fully Heave Compensated Drill Rig
- Wilson-APB Sampling, PCPT and Down-hole Vane Testing Equipment
- Containerized Mud Mix & Transfer System
- Fully Equipped Offshore Soil Testing Laboratory

General

Built	China Shipyard
Year Built	2010
Class	ABS+A1 (E) Offshore Support Vessel, Fire Fighting Class 1 + AMS + DPS 2
Flag	Panama
IMO No.	39335
Length	70.0 m
Draft	6.3 m
Breadth	16.8 m
GRT/NRT	2369 / 710
Accommodation	26

Safety Equipment

External FIFI	2 x 1500 m ³ /hr
Pump	2 x 1200 m ³ /hr 45m throw height
Life rafts	2 x 30 men Inflatable
Lifejackets	As per SOLAS
Rescue craft	1 x 12 man FRC

Tank Capacity

Fuel Capacity	1310 m ³
Drill Water	475 m ³
Potable Water	400 m ³
Liquid Mud	460 m ³

Deck Equipment

Crane	2.2 ton 12.2m boom
Tugger Winch	2 x 10 ton @ 25m/min electro Hydraulic
Windlass	1 x electro hydraulic with 2 cable lifter and 2 warping heads
Capstan	2 x 10 ton @ 25m/min electro hydraulic



The Kestrel is DP2 Positioning Vessel mobilised with geotechnical equipment suitable for:

- Undisturbed and disturbed soil sampling
- Rock coring
- Downhole PCPT testing
- Downhole vane testing
- Seabed PCPT
- Onboard soil laboratory testing

Machinery

Main Engine	2 x 2500 BHP Niigat 61-28HX
Bow Thruster	2 x CPP Tunnel Thrusters 71 each
Gen Set	2 x Mitsui Deutz BA 8m 816 LLK 370 kW each
Harbour Gen Set	3 x 800kW/1x 280kW/415V
Propellers	2 x Fixed Pitch Well Mounted 3b Azimuths
Sewage Treatment Plant Communication	Yes

Navigation & Communication Systems

1 x Inmarsat C with EGG
1 x MF/HF-DSC Radio Telephone
2 x VHF-DSC Radio Telephone
1 x SSB Radio
1 x EPIRB
1 x Navtex Receiver
3 x VHF Portable radios
S-band Radar
1 x GPS Plotter
1 x Magnetic Compass
1 x Gyrocompass
1 x Autopilot
1 x Weather Fax Receiver
1 x Doppler Speed Log
1 x Echo Sounder
1 x PA/Talkback System
1 x Anemometer
1 x Auto Telephone system
1 x TV and Radio system
1 x Aneroid Barometer
1 x Chronometer
1 x Inclinator
1 x Joystick Control
DP System
Kongsberg C Pos DPS
Reference Systems DGPS - Fanbeam
Option for HiPAP

Note: This specification is subject to change without notice.

HGC

“MV Gulf Horizon”

General

Built	Modec, Japan
Year Built	1984
Class	CCS
Flag	Comoros
IMO No.	8318984
Last Dry Dock	April 2006
Length	58.0 m
Draft	3.5 m
Breadth	15.0 m
Depth	4.8m
GRT/NRT	1356 / 406
Accommodation	54

Performance

Speed	Cruising 7 kts
Fuel Consumption	
@ Transit	8 tons (Max)
@ Standby	0.5 ton, typical

Deck Equipment

Crane	60 ton 30m fixed boom
Deck strength	5 ton/m2
Deck Area	190 m2
Mooring Anchor	4 pt mooring - fluke & gravity
Tugger Winch	2 x Kitagawa HSC-5
Windlass	9.3T x 9 meter/min
Capstan	5T x 10m/min

Navigation

Radars	
	1 x Bridge Master Radar Decca
	1 x Koden, MD-2100
Gyrocompass	1 x SPERRY SR-120
Echo Sounder	Furuno F-851T
GPS	Furuno 89
Navtex	ICS Nav 5
MF/HF DSC	Furuno DSC 6A
VHF DSC	Furuno FM 8500



VHF

Sailor RT 144 C & Sailor C 401

Satellite comms

E-mail & Internet facilities

Machinery

Main Engine	2 x Deutz SBV M 628 2 x 1360kw
Bow Thruster	1 x Mitsui Deutz BA 8m 816 3.4 ton
Gen Set	2 x Mitsui Deutz BA 8m 816 LLK 370 kW ea
Harbour Gent	MWM AG TD-226-6 80 kW
FIFI	2x600m3/HX150m range
Air compressors	2 x YANMAR KSC 7
Oily water separator	TAIKO KIKAI UST-05
Sewage Treatment Plan Communication	Yes

Tank Capacity

Fuel Capacity	492 m3
Drill Water	90 m3
Potable Water	250 m3
Dry Bulk	30x2 m3
Ballast	530 m3

Safety equipment

Lifesaving & Firefighting	AS PER SOLAS
Liferafts	AS PER SOLAS
Lif jackets	AS PER SOLAS
Rescue craft	1 x safety boat

Note: This specification is subject to change without notice

Self Elevating Platform “Terra-Surf”

Horizon’s owned Terra-Surf is a Self Elevating Platform (SEP) purpose built for nearshore and shallow water operations. It is self propelled allowing the Terra-Surf to be operated in areas where support vessels cannot access.

Geotechnical Equipment

- Hydraulic Top Drive Drill Rig
- Geobor S and PQ3 wire line systems
- Pressure meter testing
- SPT
- Undisturbed sampling
- Down-hole Vane Testing Equipment

General

Length	12m
Beam	10m
Depth of Hull	1.5m
Free deck area	50m ²
Draft	0.4m
Generator	10 kVA
Legs	4 x 16m
Max water Depth	12m
Derrick	2 ton
Drilling	150 m bsb
Drill String	PQ wireline

Safety Equipment

Life jackets	As per Solas
Lights	As per Solas



The Terra-Surf is a self propelled, self elevating platform which is capable of carrying out the following Geotechnical sampling:

- Undisturbed and disturbed soil sampling
- Rock coring
- Downhole vane testing
- Pressure measure

The Terra-Surf can be transported by road, or transported by vessel.

Weather Criteria

Max. wave height when elevated	1.5m
Max. wave height when relocating	0.6m
Current	1.0m/sec.
Wind speed working	25 knots
Wind speed transit	10-15 knots

Note: This specification is subject to change without notice.

Modular Self Elevating Platform “Horizon 27”

Horizon’s owned H-27 is a self elevating platform (SEP) that is suitable for shallow water operations. It’s modular design allows for easy transportation as well as quick mobilisation and demobilisation times.

Geotechnical Equipment

- Hydraulic Top Drive Drill Rig
- Geobor S and PQ3 wire line systems
- Pressure meter testing
- SPT
- Undisturbed sampling
- Down-hole Vane Testing Equipment
- Hyson CPT
- Geotechnical field office
- Geotechnical field laboratory

General

Built:	Rotterdam
Year Built:	2007
Class:	GL 100 A5K (20)
Flag:	Comoros
IMO No.:	1200735
Length:	18.3 m
Breadth:	12.2 m
Draft:	1.0 m
Legs:	27.0 m (17.0 m and 10.0 m sections)

Safety Equipment

Life rafts:	As per SOLAS
Lifejackets:	As per SOLAS
Lighting	As per SOLAS

Deck

Free Deck Area:	220 m ²
Deck Loading:	15 ton/m ²



The Horizon 27 is a modular self elevating platform mobilised with geotechnical equipment suitable for:

- Undisturbed and disturbed soil sampling
- Rock coring
- Downhole vane testing
- Seabed PCPT

The Horizon 27 can be disassembled and transported by road, or lifted onto a transport vessel or towed to the project location.

Machinery

Gen Set:	20kVa
Power pack:	HPP.85.S
Legs:	4 x 27 m (in 2 sections) Bottom 17 m Top 10 m

Note: This specification is subject to change without notice.