



**Unit** : North Dragon  
**Type:** : MW Semi Submersible Drilling Unit / GM4D  
**Class** : DnV  
**Built** : 2016  
**Rig Operator** : Bluewhale Offshore

**Email** : [marketing@bluewhaleoffshore.com](mailto:marketing@bluewhaleoffshore.com)



Item	Description
<b>Unit Specifications</b>	
Registered Name	North Dragon
Rig Type	Column Stabilized Drilling Unit (midwater)
Unit/Design/Shape	GM4D - design by Global Maritime & CIMC Raffles
Unit Flag	Flag upon contract commitment
Unit Classification/ Notations	DNV GL: +1A1 Column Stabilized Drilling Unit (N); DRILL (N); DYNPOS-AUTRO; POSMOOR-ATA; HELIDK-SH (N); CRANE (N); EO; CLEAN; ICE-T; WINTERIZED BASIC IMO registration upon contract commitment
IMO Certification	
Year of Construction	2016
Construction Yard	Yantai CIMC Raffles Offshore Ltd
Type of Positioning System	DP3; ATA; or anchored
<b>Main Dimensions/Technical Description</b>	
Weight (light ship)	28,445 tonne
Displacement at Loadline	45,727 tonne (@ 21 m draft)
Draft at Loadline	21 meters
Hull Length	107 m
Hull Width	74 m
Moon Pool	29.1 m x 7.4 m
Transit draft	10.1 m; Displacement 32,656 t
Survival draft and Airgap	19 m; Displacement 43,826 t; Airgap 15 m
<b>Storage Capacities</b>	
Fuel	29,436 bbls (4,680 m <sup>3</sup> )
Drilling Water	10,881 bbls (1,730 m <sup>3</sup> )
Potable Water	3,774 bbls (600 m <sup>3</sup> )
Active Liquid Mud	2,937 bbls (467 m <sup>3</sup> )
Mud Processing Tank	340 bbls (54 m <sup>3</sup> )
Reserve Liquid Mud	4,032 bbls (641 m <sup>3</sup> )
Bulk Bentonite/Barite	12,819 ft <sup>3</sup> (363 m <sup>3</sup> )
Bulk Cement	12,501 ft <sup>3</sup> (354 m <sup>3</sup> )
Sack Storage	5,500 sacks
Pipe Rack & Riser Storage Area	Pipe racks area: 130 m <sup>2</sup> Riser racks area: 165 m <sup>2</sup>
<b>Propulsion/Thrusters</b>	
Thrusters	Six (6) Rolls-Royce / UCC405 azimuth thrusters; Each with Siemens 6,120 hp motors
Dynamic Positioning	Kongsberg K-Pos system; Full DP/Dynpos-AUTRO; Posmoor ATA; DP 3
<b>Operational Capabilities</b>	
Maximum Water Depth	3,900 ft (1,200 m)
Maximum Drilling Depth	26,250 ft (8,000 m)
Transit Speed	6 knots
<b>Variable Deck Load Capacity</b>	
Variable Deck Load Capacity	Transit VDL capacity: 3,000 tonnes Drilling VDL capacity: 4,000 tonnes Survival VDL capacity: 4,000 tonnes

#### Environmental Limits

**Environmental Limits**  
**Drilling**  
 Air gap below main deck: 13 m  
 Maximum wave height (H<sub>s</sub>): 8 m  
 Maximum heave (double amplitude): 15.6 m  
 Maximum pitch (double amplitude): 5.7 degrees  
 Maximum roll (double amplitude): 7.3 degrees

#### Mooring System

**Anchor Winches & Anchors**  
 Four (4) NOV-BLM / MV375 double drum winches; Each @ 630 kW; Rated pull of 384 t; Stalling pull 540 t  
 Eight (8) Bridon / DBK2 SWR 96mm anchor lines; Each @ 750 m long; DNV Offshore E-301  
 Anchors not installed

#### Marine Loading Hoses

**ML System**  
 Two (2) NOV hose reel loading station; 7 each 4" liquid hoses and 2 each 5" hoses for powder/dry bulk; Each hose 60 m long

#### Cranes, Hoist And Material Handling

**Cranes**  
 Two (2) NOV / OC3500LCE lattice boom deck cranes; 80 t @ 7.8 m; Boom length 50 m  
 One (1) NOV knuckle boom pipe handling crane; 13.3 to 24.2 t @ radius 4.3 to 26.6m  
 One (1) NOV BOP / LMRP/ XT overhead gantry crane; 2 x 60 tonne plus 1 x 12 tonne  
 One (1) NOV / WU101 rig floor man-riding winch in derrick; 150 kg capacity  
 One (1) NOV / PM150-65 man-riding winch in moonpool; 150 kg capacity

#### Helicopter Landing Deck

**Dimensions**  
 Octagonal shape helideck; 91 ft diameter  
**Deck Load Capacity**  
 12.6 tonne; UK CAP 437  
**Refueling System**  
 System by Helifuel AS; Two (2) portable tanks; 2 x 2,900 liters  
**Designed For Helicopter Type**  
 S61N; S92A; AS332L2

#### Auxiliary Equipment

**Water Maker**  
 Two (2) Sondex / SFD222-75; Each with a capacity of 75 tonne/day  
**Cargo Transfer Pumps**  
 Two (2) fuel oil transfer pumps; Each delivering 60 m<sup>3</sup>/hr @ 6 bar  
 Two (2) potable water transfer pumps; Each delivering 42 m<sup>3</sup>/h @ 6 bar  
 Two (2) general SW service pumps; Each delivering 432 m<sup>3</sup>/h @ 12 bar

#### Derrick and Substructure

**Derrick/Mast**  
 NOV / Single Dynamic Bottle Neck (SDBN) [1 1/2 derrick]; Height of 63.7 m  
 Base: 15 m x 16 m  
 Crown: 6.1 m x 6.1 m  
 Gross nominal capacity of 890 t; Static hook load of 680 t  
**Racking Platform**  
 NOV fingerboard; Racking platform capacity of: 5 3/8" DP: 7,400 m  
 6 3/4" to 9 1/2" DC: 325 m  
**Maximum Setback Load**  
 1,351 kips (613 tonnes)



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#### Derrick and Substructure

Drawworks & Associated Eq.	NOV / SSGD-750-4600-57-82-10.5 drawworks; Four (4) Baylor / CM628 TUT 857 kW motors; Continuous power rating of 3,430 kW; 57" API 7K drum with 1 ½" wire; Maximum line pull (12 lines) @ 680 t
Derrick Hoisting Equipment	NOV / CBC-750 crown block and compensator system; Compensating load in hook 454 t; Crown block maximum capacity 681 t; Compensator stroke length 25 ft; AHC for CMC with cylinder stroke of 7,800 mm; Max push/pull force of 25 t @ 250 bar / 15 t @ 150 bar; Rated capacity of 680 t; 6 each 72" sheaves; grooved for 1 ½" line size NOV / 750 travel block (7 x 72" - 1 ½"); Rated capacity of 750 short ton; 7 sheaves
Rotating System	NOV / RST605-2G rotary table; Max. opening of 60 ½"; Static load capacity of 907 t; Rotating load capacity of 680 t; 2-speed hydraulic; Max. continuous torque of 61 kNm
Top Drive	NOV / HPS-03 electric topdrive; 907 t; Test/working pressure of 7,500 psi; Two (2) ABB / HT motors; 2 x 746 kW; Max. continuous torque of 108 kNm

#### Power Supply Systems

Rig Power Plant	Six (6) Rolls Royce / B32:40V12ACD diesel engines; Max. continuous power 5,765 kW @ 720 rpm Six (6) Siemens / 1DK4143-8AM05-Z AC generators; Continuous power 6,150 kVA @ 720 rpm; 11 kV output
Compressed Air Systems	Two (2) Sperre / XA090 high pressure air compressors; Rated capacity of 100 m3/h; Working pressure of 30 bar; Electric prime mover; Continuous power of 20 kW Two (2) Tamrotor / TMS 235-11 EWNA FW rig air compressors; Rated capacity of 1,764 m3/h; Working pressure of 10 bar; Electric prime mover; Continuous power of 210 kW Two (2) Tamrotor / A 1500 low pressure bulk air compressors; Rated capacity of 1,764 m3/h; Working pressure of 10 bar; Electric prime mover; Continuous power of 210 kW Tamrotor air dryers with capacity to suit air compression system
Emergency Generator	Two (2) Rolls Royce / B32:40V12ACD diesel engines; Max. output 5,765 kW @ 720 rpm; air started; Max. angle of operation 25 degrees Two (2) Siemens / 1DK4143-8AM05-Z generators; Max. output 6,150 kVA @ 720 rpm

#### Drillstring Equipment

Tubulars	Detailed specification and inventory available upon request
Handling Tools	VBJ / BX4 drill pipe elevators; 680 t; 2 ¾" - 9 ¾" VBJ / BX4 drill collar elevators; 680 t; 2 ¾" - 9 ¾" VBJ / BX3 tubing elevators; 318 t; 9 ¾" - 20" VBJ / PS21 power DP slips; Max / Min 14" / 2 ¾" Bit Breakers up to 26" Hydratong / SW10-1 drillpipe spinner; Max / Min 9 ¾" / 3 ½" Hydratong mud saver bucket; 2 ¾" - 6 ¾" Hydraulic CatHead; Max. linepull 20 - 147 kN Hydratong / MPT-200 and ARN/270 iron roughnecks; Max OD/Min OD 9 ¾" - 3 ½"; Max. makeup torque of 140 kNm; Max. breakout torque of 200 kNm

#### Well Control/Subsea Equipment

Lower Riser Diverter Assembly	Vetco / EXF HAR H4 hydraulic connector; 18 ¾" Oilstates flex joint/riser adaptor; 21"; Max. deflection 15° NOV / Shaffer FT-E riser adaptor; 18 ¾"
Primary BOP Stack	NOV / Shaffer NXT; 18 ¾", 15,000 psi Vetco / Super HD - H4 hydraulic wellhead connector; 18 ¾"; w/ 27" inserts; Ram type preventers Five (5) NOV / Shaffer NXT preventers; 18 ¾"; 15,000 psi; 1 double and 1 tripple; Ram locks 22"; PosLock and UltraLock 2B
Primary Lower Marine Riser Pkg.	Vetco / EXF HAR H4 hydraulic connector; 18 ¾"; 10,000 psi; Hot tap for underwater intervention NOV / Shaffer Wedge Cover Spherical BOP; annular type preventer (LMRP); 18 ¾"; 10,000 psi Oilstates flex joint; 21"; Max deflection 15° NOV / Shaffer FT-E riser adapter; 18 ¾" Flex loop type connections to riser
Primary Marine Riser System	NOV / Shaffer FT-E marine riser joints; OD 21"; ID 19 ¾"; 50 ft joints; X-80 grade pipe material X-80; Min. yield strength of 75,000 psi; Rated for 1,500 m waterdepth; Six (6) bolt connections w/ tread inserts NOV / Shaffer FT-E telescopic joint; ID 21"; 5 aux. lines; Remote operated; Goosenecks; 50 ft stroke; Double seals; Onboard spare; Rotating support ring for riser tensioners with 8 connection points Oilstates / Diverter 2 Flex Joint API 21-2M FT-E; 21"; Max. deflection 15°; PCG-NOV 1000 ton marine riser spider; 60.5" PCG-NOV 1000 ton marine riser gimbal; 60.5" Hydraulic (2) and mechanical (1) riser handling tools NOV / Shaffer FT-E riser test tools
Diverter BOP	Shaffer/Oilstates / NOV 21-500-60; Max. bore size 59"; Working pressure of 500 psi; Five (5) diverter outlets; Outlet OD 16" x 3 and 8" and 6"; Insert packer ID 21 1/4"; For installation in fixed bell nipple
Subsea Support System	Eight (8) NOV riser tensioners; Each @ 54 t; Max. stroke 3,810 mm; 2" wireline; 50 ft line travel Four (4) NOV guideline systems; Capacity each tensioner 7.5 t; Max. stroke 3,050 mm; ¾" wireline; 40 ft line travel; 550 m line storage drums Two (2) NOV pod line tensioners; Each @ 12 t; Max. stroke 3,050 mm; 1 3/16" wireline; 40 ft line travel
BOP Control System	PCG / NOV surface accumulator unit; 791 USG; 3000 psi Two (2) NOV / Triplex accumulator hydraulic pumps; Each with 75 hp electric motor; 30 USG/min @ min. operating pressure 3000 psi
Subsea Control System	Two (2) DDI hose reels; Max. storage length 1,200 m; Air motor drive Two (2) pod hoses; Each 900 m long; OD 5"
Choke and Kill Manifold	Anson; Min. ID: 3 1/6"; Max. working pressure 15,000 psi; H <sub>2</sub> S service

#### Mud System/Bulk System

High Pressure Mud System	Three (3) NOV / 14-P-220 triplex mud pumps; Liner size 5" - 9"; Each with 2 AC motors; Continuous power rating per motor of 2,200 hp; Max. working pressure of 7,500 psi
Low Pressure Mud System	Five (5) Brandt / VSM 300 shale shakers



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#### Mud System/Bulk System

**Bulk System** Three (3) NOV barite/bentonite silos; Capacities of 178 m<sup>3</sup> / 92 m<sup>3</sup> / 92 m<sup>3</sup>; 6 bar  
 Two (2) NOV cement silos; Each with a capacity of 178 m<sup>3</sup>; 6 bar;  
 Two (2) NOV surge tanks for barite/bentonite; Each with capacity of 5 m<sup>3</sup>; 5.5 bar  
 One (1) BHI surge tank for cement; 2.5 m<sup>3</sup>; 6.5 bar  
 All silos and tanks equipped with NOV / VC3500 load cells

#### Casing/Cementing Equipment

**Casing Equipment** Casing equipment mobilized as per contract agreement  
**Cementing Equipment** Baker Hughes International / Electric Seahawk AC 1600 HP; Max. working pressure 15,000 psi; Max. flowrate 4.2 bbls/min @ 5,000 psi; 90 ft<sup>3</sup> surge tank

#### Instrumentation/Communication

**Drilling Instrumentation** NOV weight indicators; 2 each  
 NOV standpipe pressure Gauge; 0 - 7,500 psi  
 NOV choke manifold pressure gauge; 4 each; 0 - 15,000 psi  
 NOV rotary speed tachometer; 0 - 15 rpm  
 NOV rotary torque indicator; Max. torque 60 kNm  
 NOV motion compensator instrumentation and hook position indicator  
 NOV pump stroke counters; One pump stroke indicator and one cumulative counter  
 NOV tong torque indicator; 0 - 150 kNm with 1 meter arm  
 NOV pit volume totalizer; Floats in active mud tanks; Floats in reserve mud tanks; Floats in mud processing tanks; Loss/gain indicator; Alarm (audio and visual)  
 NOV mud flow indicator; High/low alarm (audio and visual); 2 off sensors in flowline adjacent to diverter housing  
 NOV trip tank indicator; Chart recorder; Alarm  
 DNH General Alarm system  
 NOV Automatic Driller; NOV/ ROP auto

**Rig Communication System** Telephone System: 242 stations in total; FHF / Ex Resist and FHF / W Resist; Alcatel / 4019 and 4039  
 NOR Electronic public address system (PAGA)  
 Drillers' Talkback: Four (4) Phoneteck / 2067 and 2092 stations; Explosion proof  
 Hand-held VHF Radios: Motorola / GP340Ex; 6 sets

**Environmental Instrumentation** Kongsberg / HMS-200 system with recorder for Temperature; Barometric pressure; Humidity; Wind speed and direction

**MODU Specific Instrumentation** Roll/Pitch/Heave: Kongsberg / K-pos OS + HMS with recorder  
 Gyro Compass: Kongsberg / Navitwin IV  
 Echo Sounder: Kongsberg / GDS 102 with recorder  
 Weather Facsimile: Furuno / Fax-408 with recorder  
 X-band Radar: Kongsberg; 2 each; Bandwidth 2.4 GHz  
 S-band Radar: Kongsberg; Bandwidth 3.5 Ghz

#### Instrumentation/Communication

**Radio Equipment** SSB Transceiver: Three (3) Furuno / FS-2575; 120 - 960 W; 1605 kHz to 27500 kHz; Synthesized  
 EPIRB: Two (2) Jotron/ Tron 40S  
 VHF Radio Telephone: Three (3) Jotron / TR-20  
 GMDSS; 2 W; 21 channels  
 VHF Radio Transceiver: Three (3) Furuno / FM-8900S; 25 W  
 Radio Beacon Transmitter: Two (2) Jotron / AIS-SART; 1W  
 Aeronautical VHF Transceiver: Two (2) ICOM / IC-A210; 8W; 118 MHz - 137 MHz; Synthesized  
 Watch Receiver: Furuno / NX7001  
 Satellite Communication System: Furuno / Felcom-500; Inmarsat C; Facsimile link; Inmarsat Fleetbroadband; Telex link; Other capabilities  
 VSAT system

#### Production Test Equipment

**Burner Boom** Two (2) Dalian TSC horizontal burner booms; Each 100 ft long; Max. wind speed (operation) 36 m/s; Burner platform size: 3,1 m x 3,1 m

#### Workover Tools

**Workover Tools** As per contract agreement

#### Accommodation

**Offices** Company Rep office @ A deck AFT  
 Contractor Rep @ drill floor (with unrestricted view of drill floor)  
**Living Quarters** 130 PAX capacity; All single occupancy cabins

#### Safety Equipment

**Gas/Fire/Smoke Detection** H<sub>2</sub>S monitoring system: Kongsberg / K-safe  
 Combustible gas monitoring system: Kongsberg / K-safe  
 Two (2) portable H<sub>2</sub>S detectors: Honeywell / GasAlert Quattro  
 Two (2) explosimeters: Honeywell / GasAlert Quattro  
**Fire Fighting** Two (2) firewater pumps; Allweiler / RVP250M; Single stage vertical centrifugal; 2 x 430 m<sup>3</sup>/h  
 Four (4) Norsafe / GES50 MKIII Free Fall lifeboats; Each with 70 PAX capacity  
 Eight (8) Viking / 35 DK-RS liferafts; Each with a capacity of 35 PAX  
 Norsafe / Mako 655-R002 FRC / MOB; Water-jet propulsion  
**Survival Equipment**

#### Pollution Prevention Equipment

**Sewage Treatment** EVAC / MBR vacuum system; In compliance with IMO MEPC159(55) and US Coast Guard regulations  
**Garbage Compaction/Disposal** Delitek / DT-200 system. Additionally, deck containers with compactor function are planned for deployment in certain regions  
**Oily Water Separator** JOWA / 3Sep OWS; 5 m<sup>3</sup>/h

#### Reviewer's Notes:



