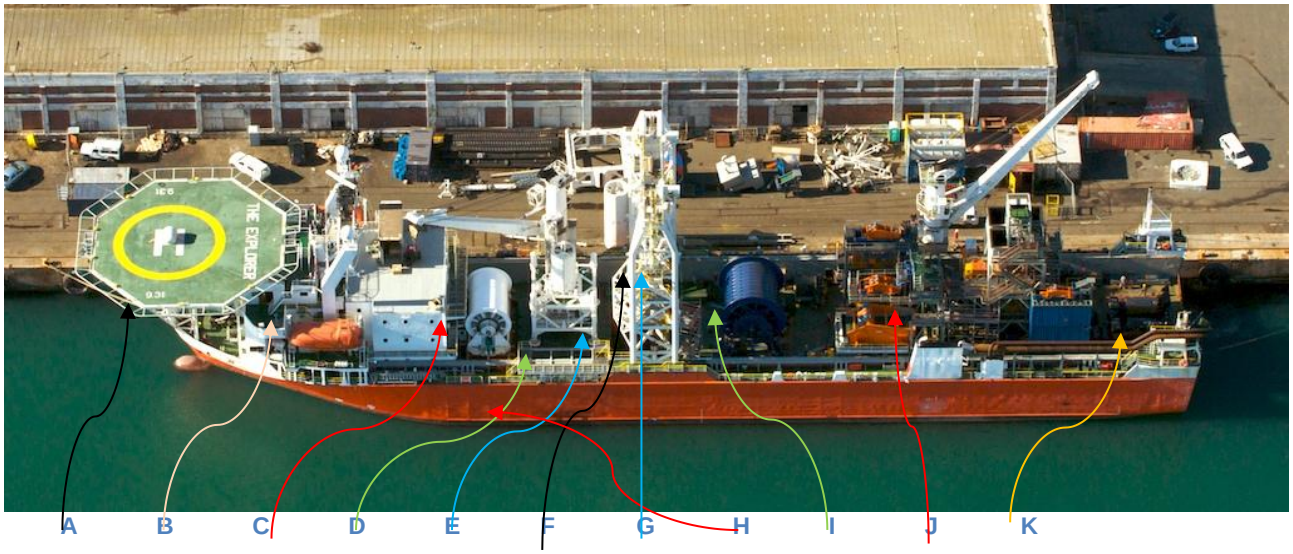
M/V THE EXPLORER

Specifications and operational criteria



Overhead view and description of the vessel

A. **Helicopter deck**

B. **Accommodation**

C. **Umbilical winch**

D. **Sliding door parking area**

E. **Moon Pool, A-frame and Tool area**

F. **Heave Compensators**

G. **Guide Constant Tension Winches**

H. **Main Hoist Winches**

I. **Slurry Hose Winch**

J. **Mineral Recovery Plant Area**

K. **Sampling Tool Power Generation Area**

OUTLINE SPECIFICATIONS

Length	104.85 meters
Length Overall	114.40 meters (Incl overhang, helideck and exhaust)
Width	19.6 meters
Depth	4.9 meters
Draft	7.6 meters
GT	4677 tons
NT	1403 tons
Dead Weight	3935 tons
Max speed vessel	7/8 knots
Port of Registration	Saint Vincent and the Grenadines
Call Sign	3EVD7
Classification	Rina Supply Vessel, 100A1, Dynapos AM/AT R
IMO No.	7904932
Class Association	Rina
Fuel Bunker capacity	MGO 800 MT
Lub oil capacity	22.7 M^3
Sludge tank	2.2 M^3
Dirty oil tank	4.3 M^3
Water tank capacity	350 M^3
Water making capacity	22 M^3/day
Accommodation	Total 54 persons. (Single x4, Double x25 + Hospital x1)
Life saving equipment	2 x 68 persons
Helicopter platform	SWL 9.3 ton
Launch and recovery system A-frame	SWL 200 ton
Main winches 2 times	100 ton SWL each
Guide Winches	2 times, 15 ton SWL each
Moon-pool size	8 x 10 meters
Moon Pool closing system	Top sliding door.

MACHINERY

Main prop 1 power		1085 KW
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Thruster 1 Azimuth Diesel driven Bow		980 KW
Thruster 2 Azimuth Diesel driven Bow		980 KW
Thruster 3 Azimuth Diesel driven Stern		980 KW
Thruster fix Electrical driven Stern		350 KW
Aux gen set 1 Vessel		230 KW
Aux gen set 2 Vessel		230 KW
Aux gen set shaft generator Vessel		260 KW
Vessel gen set	4 Caterpillar 3516	1800 KW
Mining gen set1	1 Caterpillar	1800 KW
Mining gen set	2 Caterpillar	1800 KW
Mining gen set	3 Caterpillar	1700 KW
Crane 1		30 ton swl
Crane 2		30 ton swl
Crane 3 knuckle boom		2.3 ton swl

Vessel Dynamic positioning system is Kongs Berg Dynapos AM/AT R Specifications as per manufacturer documentation "Kongsberg"

DGPS differential positioning system C-Nav 3050 GNSS PP receiver system including a C-NavC2 Signal Service (NET1) with a NET2 as possible back up. Tolerances as per supplier's specifications <10 cm horizontal and <20 cm vertical, with 95% confidence. A complete spare DGPS hardware system and signal is on board.

Vessel communication systems comprises a KU band Satellite system of Seatel 4006.

SAMPLING LARS SYSTEM

Vessel Moon pool	size 8 by 10 meter.
Cursor frame	Size 7 by 7 meter with tool catching devises.
Moon pool deck cover	Sliding door 9 by 10 meter , hydraulic driven.
Lifting Frame structure over moon pool	SWL 200 ton.
Main lift winches	2 times 100 ton.
Slack wire heave compensation	passive, 5 to 35 ton.
Main guide wire winches	2 times 30 tons SWL constant tension.
Umbilical winch heave compensated	Equipped umbilical, with slip for HV and controls, rotary joint for air, water and fluids.
Slurry hose spooler	equipped with 200 meter flexible riser hose ID 350 mm.

Sub Sea Sample tool

Diamond Processing Plant

SAMPLE TOOL SPECIFICATIONS

Weight	147 Ton
Dimensions	6.5 x 6.5 x 23 ,meter
Drill bit diameter	5 square meter
Max water depth (In present configuration)	180 meter.
Drilling depth Achievable (depending on soil	

Conditions) with Owners Cutter Head:	0 to 8 meters standard (up to 12 meters as optional)
Drill Bit RPM output:	Adjustable between 2 and 8 RPM
Drill Bit Torque output:	Maximum torque 240KN (with peak limit of 270KN)
Drill tower downward speed:	Adjustable speed controlled between 0 and 350 mm/min
Drill bit downward force	Adjustable between 5 and max 45 ton
Slurry discharge diameter	Ø 350 mm
Available 5 units Air compressors	Working pressure: min 10 bar, max 20 bar
Atlas Copco type CR200W290 feeding central ring main system	Free air delivery: 384L/S per unit
Tool Power	Electric / hydraulic 500KW, 3.3KV.
Jet water capacity	Pump 500 KW/3.3KV,
The jet water capacity variable between:	Minimum 32 HZ 3,000Ltr/min @ 6 Bar Maximum 50 Hz 15,000Ltr/min @ 9 Bar

Regarding the drill performance of the system, experience of the last years projects has proven that the system was able to drill sample holes in the standard Namibian & South African soil conditions (cobles, gravels, sands, mud, soft clay) between 1.0 to 8.0 meters till pre-Cambrian rock or stiff clay foot wall. in water depths of 30 to 180 meters, with distance between sample locations varying between 25 to less than 250 meters.

As indicative information only, historical performance has proven that the system is capable to drill per day (depending weather conditions and soil geotechnical conditions):

Soil types	Average drill depth in soil	Distance between samples	Average samples /day
Silt, sand, gravels, small & medium cobles	1.5 meter	Between 50 to 100 meter	Between 25 to 31 samples / day
Silt, sand, gravels, small cobles	4.6 meter	Between 150 to 250 meter	Between 15 to 18 samples / day
Silt, sand, gravels, small cobles	Up to 8 meter	Between 150 to 250 meter	Between 12 to 16 samples / day
Silt, sand, gravels, and small cobles	0.75 meter	Between 25 to 50 meter	Between 30 to 60 samples / day

The sampling availability and rate per day is based on the above conditions is based on the basic natural operational procedure of the vessel and sampling system, and it is related to the sampling plan, distances between sample locations, sailing times, launch and recovery times of the subsea tool, the applied processing and sterilization procedures. Any supplementary or changes in the basic activities (such as pre and post multi-beam scanning, ROV post hole reviews, change processing and sterilization procedure and other aspects not set out in our basic specification document) will lead to changes in these parameters and estimated achieved production rates.

MINERAL RECOVERY PLANT

Primary feed section	Primary screen <1 mm >25MM Transfer pumps 4 storage bins Belt feeder Barmec crusher Wash screen
DMS	DMS feed storage bin

Final recovery	20 ton / H cyclone. Float and sink screen. Sizing screen Double stage Flow sort X-Ray Machine. Dryer section Final love box sort house.

SECURITY SURVEILLANCE

In the mineral recovery plant and certain critical points of the subsea launch equipment are positioned 46 security cameras recording onto a special hard drive system for review and analyses. Security Rules are in accordance with the Contract Security Procedures (copy can be made available to the client).