

RIG T160

LIST OF DEVICES AND TECHNICAL DESCRIPTION

Drilling System: Wirth GH 2500

Rig: T 160

Project: ---

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EQUIPMENT OF DRILLING RIG T-160

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A DERRICK, SUBSTRUCTURE, DRAWWORKS / HOISTING EQPT.

A 1 Mast

Manufacturer		M.I.L. (Morinoak International Limited)
Type		157' x 35' Universal Cantilever Swing Lift
Year of construction		1997
Clear height	(m)	47.85
Hook load (max.) for wire quality EIPS 1 ½"		
with 14 lines	(kN)	5,900
with 12 lines	(kN)	5,330
with 10 lines	(kN)	4,530
Hook load (rated) for wire quality EIPS 1 ½"		
with 14 lines	(kN)	4,070
with 12 lines	(kN)	3,550
with 10 lines	(kN)	3,020
Crown Block		
Rated load	(kN)	5,780
Racking capacity		
5" DP incl. 400m DC	(m)	10,100
5 ½" DP incl. 400 m DC	(m)	9,100
6 5/8" DP incl. 400 m DC	(m)	7,600
Stabbing Board		
Adjustable (from/to)	(m)	5.86 – 20.85
Payload	(kN)	1.4
Escape System		
Manufacturer		Honor
Type		PED-6

A 2 Substructure

Manufacturer		M.I.L. (Morinoak International Limited)
Type		35' Swing Lift Self Elevating Sub-Structure
Year of construction		1997
Clear width	(m)	7.55
Height Lower Edge Rotary Table	(m)	9.00
Height Upper Edge Rotary Table	(m)	10.70
DP Offload	(kN)	3,630
Rotary Table load (max.)	(kN)	5,900
Rotary Table load simultaneously		
with rotary	(kN)	3,630
BOP hoisting incl. radio remote control		
Load capacity	(kN)	396

A 3 Drawworks

Manufacturer		WIRTH
Type		GH 2500 EG
Year of construction		1997
Drive		2 DC motors GENERAL ELECTRIC GE-752 High Torque
Input power	(kW)	1,840
Line pull , 2 nd layer	(kN)	532.3
Auxiliary Brake		Eddy current brake
Manufacturer		BAYLOR
Type		ELMAGCO 7838
Anti-collision system (Automated Drawworks Control System)		
Manufacturer		BENTEC
Type		ACS M-III
Feed Off System		
Manufacturer		BENTEC
Workspace	(m/h)	0.5 – 63
	(kN)	2,452

A 4 Drilling Line and Sand Line**A 4.1 Drilling Line**

Diameter	(inches)	1 ½
Quality		EIPS
Construction		8 x 19 Seals + 1 SES
Minimum breaking load	(kN)	1,008

A 4.2 Sand Line

Diameter	(inches)	-
Length	(m)	-

A 5 Dead Line Anchor

Manufacturer		MARTIN-DECKER
Type		EB
Capacity	(kN)	444.8

A 6 TRAVELLING BLOCK AND HOOK

A 6.1 Travelling Block

Manufacturer		NATIONAL-OILWELL
Type		760-H-650
Year of construction		1997
Capacity	(kN)	6,500

A 6.2 Hook

Manufacturer		
Type		
Year of construction		
Capacity	(kN)	5,780

A 7 SWIVEL

Manufacturer		WIRTH
Type		DDM 650-7500
Year of construction		1997
Stat. Capacity	(kN)	5,800
Nominal pressure	(bar)	525

A 8 RIG WINCHES

Number	(units)	1	1
Manufacturer		Columbus McKinnon	INGERSOLL RAND
Type (pneum.)		ESW Beta	LS1000R-E
Max. Cable 1st layer	(kN)		29.4
Installation location		Catwalk	Monkey Board

A 9 HYDRAULIC WINCHES

Number	(units)	2
Manufacturer		NCS Hydraulics
Type		TME-2/3
Max. Cable 1st Location	(kN)	47
Cable length	(m)	120
Cable diameter	(mm)	16
Site		Rig Floor

B ROTARY SYSTEM

B 1 Rotary Table

Manufacturer		NATIONAL OILWELL
Type		B-37½"IRD
Drive		hydraulic
Diameter	(inches)	37 ½
Stat. Capacity	(kN)	5,900
Max. Torque	(kNm)	25
Max. RPM	(min ⁻¹)	14
Inserts		as per drilling program

B 2 Top Drive

Manufacturer		MARITIME HYDRAULICS	
Model		DDM 650L-DC 2speed	
Drive		electric	
Output	(kW)	735	
Capacity	(kN)	5,800	
		1st Gear	2nd Gear
Max. Torque	(daNm)	7,570	4,930
Continuous torque	(daNm)	6,835	4,440
Max. rev count	(min ⁻¹)	154	237
Continuous rev count	(min ⁻¹)	104	161

B 2.1 Soft Torque System

Manufacturer		Bentec
Type		STRS Mark III

C MUD PUMPS AND STAND PIPE SYSTEM

C 1 Mud Pumps

Count		3
Manufacturer		Wirth
Type		TPK 2200
Drive		2 DC motors each

Available input power
each pump (kW) 1640

at piston/liner diameter: (inch) 5
max. pressure: (bar) 517
max. flow rate: (l/min) 1500

at piston/liner diameter: (inch) 7 ½
max. pressure: (bar) 265
max. flow rate: (l/min) 3348

Other liner dimensions are not maintained

C 2 Stand Pipe

Number		1
Inside diameter	(inch)	5
Rated pressure	(psi)	7,500

C 3 Rotary Hose

Number		1
Inside diameter	(Zoll)	3 ½
Rated pressure	(psi)	7,500

C 4 Circulation Heads

for connectors 6 5/8" FH:	(units)	1
for connectors NC50:	(units)	1
for connectors NC38:	(units)	1

D MUD SYSTEM

D 1 Active System

Total volume (m3) 260 (not incl. mud silos)

D 1.1 Shale Shaker Tank

Volume (m3) 30
Number of compartments (units) 2
Number of Agitators (units) 2
Power (kW) 7.5
Sand Trap (m3) 10
Level monitoring with 3 radar sensors

D 1.2 Suction tank

Number (units) 1
Volume (m3) 60
Number of compartments (units) 2
Number of Agitators (units) 4
Power (kW) 7.5
Level monitoring with 2 radar sensors

D 1.3 Reserve tank

Number (units) 1
Volume (m3) 60
Number of compartments (units) 3
Number of Agitators (units) 4
Power (kW) 7.5
Level monitoring with 3 radar sensors

D 1.4

Mud Silo

Number 4
Mud weight (kg/dm³) 2.5
Volume (m³) each 37.5

Level monitoring with 4 radar sensors

D 1.5

Trip Tank

Number (units) 1
Chamber volume (m³) 2 x 3.5m³
Remote control Remote I/O with Profibus
Number of centrifugal pumps (units) 2
Type 4" x 3" x 13"
Power (kW) 15

Level monitoring with 2 radar sensors

D 2 Mixing System

D 2.1 Mixing Tank 1

Volume	(m3)	50
Number of compartments	(units)	3 (2 x 10m ³ , 1 x 30m ³)
Number of Agitators	(units)	4
Power	(kW)	7.5
Level monitoring with 3 radar sensors		

D 2.2 Mixing Tank 2

Content	(m3)	50
Number of compartments	(units)	2 (25 m ³ each)
Number of Agitators	(units)	4
Power	(kW)	7.5
Level monitoring with 2 radar sensors		

D 2.3	Pill Tank		
	Number	(units)	1 with 15m ³
	(a compartment of the Reserve Tank)		

D 2.4 Mixing Hopper

Number	(units)	3
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D 2.5 Mixing Pumps

Number	(units)	3
Manufacturer		Amteq/Mission Magmam
Type		6" x 8" x 14"
Drive		electric
Power	(kW)	90

D 2.6 Transfer Pumps

Number	(units)	2
Manufacturer		Amteq/Mission Magnum
Type		6" x 8" x 14"
Drive		electric
Power	(kW)	75
One pump via VFD to supply the Desilter		

D 3 Chemicals Conditioning Tank

Content	(m3)	1.5
Agitator		yes

D 4 Mud Condition Equipment

D 4.1 Shale Shaker

Number	(units)	4
Manufacturer		NOV Brandt
Type		VSM 300
Drive	(linear, elliptical, circular)	elliptical
Moving angle		fixed
Vibration speed		variable
Power	(kW)	for each 3
Upper deck screen area	(m ²)	1.91
Lower deck screen area	(m ²)	2.44

D 4.2 Desander

1 Mud Cleaner in 23" – Drill section

D 4.3 Desilter

Number	(units)	1
Manufacturer		DERRICK
Type		416-T
Number of cyclones	(units)	16
Diameter of the cyclones	(inches)	4
Flow rate	(l/min)	3040

D 4.4 Vacuum Degasser

Number	(units)	1
Manufacturer		DERRICK
Type		D-1200
Flow rate	(m ³ /h)	277

D 4.5 Dry Material Silo

Number	(units)	3
Capacity	m ³ /Silo	29
Weighing device		yes

E ENERGY SUPPLY

E 1	Power unit		Electric
	Normal operation		over 20 kV grid feed
	in the event of a power failure		diesel-electric
	Mains parallel operation		Mains supply with simultaneous generator operation
	Monitoring		Fully automatic operation, circuits and load specifications are monitored by a load management system
E 2	Energy requirement		
	Network connection	(kVA)	max. 4,500
E 3	Diesel Motors		
	Number	(units)	2(Additionally 2 back up motors)
	Manufacturer		CATERPILLAR
	Type		3512-B
	Power	(kW)	each 1,195
	at	(min ⁻¹)	1,500
E 4	Generators		
	Number	(units)	2(Additionally 2 back up generators)
	Manufacturer		LEROY SOMER
	Type		LS 51
	Power	(kVA)	each 2,000
E 5	Energy Distribution (SCR / MCC)		
	SCR Unit Manufacturer		BENTEC
		(units)	2 SCR for Drawworks
		(units)	3 SCR for Mud Pumps
		(units)	1 SCR for Top Drive
	Other systems/controls:		Drawworks Control MH Wirth Top Drive Control MH Wirth Bentec: Soft Pump/ACS/Soft Torque MCC 690 V
	Add. MCC Container Manufacturer		Fest AG MCC 690V / MCC 400V
E 6	Fuel tanks		
	Number	(units)	1
	Content	(m ₃)	40

E 7 Compressor

Number	(units)	2
Manufacturer		Atlas Copco
Type		GA18 VSP+P
Power (max.)	(kW)	each 18
Working pressure (max.)	(bar)	13
Storage capacity	(l)	1,500
Air drying		yes
Incl. Freeze protection and dew point		

F WELL CONTROL EQUIPMENT

F 1 Ring Preventer

Count		1	1
Manufacturer		HYDRIL	CAMERON
Type		MSP	D
Size	(inch)	21 ¼	13 5/8
Pressure stage	(psi)	2,000	10,000
H ₂ S-suitability		yes	yes

F 2 Ram Preventer

Number and version		2	2
Manufacturer		SHAFFER	CAMERON
Type		LWS	U
Size	(inch)	21 ¼ easy/easy	13 5/8 easy/double
Pressure stage	(psi)	2,000	10,000
H ₂ S-suitability		yes	yes
Lateral connections			
Kill line	(inch)	3 1/16	2 x 2 1/16
Choke line	(inch)	3 1/16	2 x 4 1/16
Pressure stage	(psi)	10,000	10,000

F 3 Rams

F 3.1	Pipe/Casing Rams	21 ¼"	13 5/8"
Linkage block			
Number	(set)	1	2
Diameter	(inch)	5	5
Number	(set)		2
Diameter	(inch)		3 1/2
Number	(set)		1
Diameter	(inch)		6 5/8

F 3.2 Total Rams (set) 1 -

F 3.3 Shear Rams (set) - 1

F 3.4 Variable Rams

Number	(set)	1	1
Size range (from/to)	(inch)	4½-7	27/8-5
Number	(set)		3
Size range (from/to)	(inch)		4 ½ - 7

F 3.5 Stripping Equipment

Stripping Tank yes

F 4	Drilling Spools/Adapter Flanges	Suitable for the preventers 21 1/4" and 13 3/8" and for flanging with side outlets 2 1/16", 3 1/16", 4 1/16"
F 5	BOP Unit	<p>Manufacturer NCS</p> <p>Type BOP HPU-2X200-210-2000-400/50</p> <p>Series nr. NCS-2012-10-03-004</p> <p>Total storage capacity (l) 30 x 50l = 1500 l</p> <p>Storage pressure (bar) 210</p> <p>Hydraulic pumps</p> <p>Number 2 x Axial piston pump</p> <p>Type V30D-140 RKN-1-1-04/LN-2/221450</p> <p>Flow (l/min) 203</p> <p>2. Independent supply of the locking system through:</p> <p>Emergency generator Perkins</p> <p>Type GEP65-2</p> <p>Performance data 60 kVA with cos phi 0.8/400V/50Hz</p> <p>Ring preventer pressure control valve yes</p> <p>Distributor pressure control valve yes</p> <p>Main control</p> <p>Number of stations 7</p> <p>Remote controls</p> <p>Number 2</p> <p>Location Drillers Cabin as well as BOP control room</p> <p>Number of stations 7</p> <p>Remote control for mud pumps Displays yes</p> <p>Pump strokes, DP pressure, Annular pressure, Autom. Choke incl. threshold settings</p>

F 6	Discharge Line		
	H ₂ S-suitability		yes
F 6.1	Choke Manifold		
	Inner diameter of straight		
	By-pass	(inch)	3 1/16
	Rated pressure input	(psi)	10,000
	Rated pressure output	(psi)	5.000
	Manual nozzle(s)		
	Number		1
	Rated diameter	(inch)	3
	Remote controlled nozzle(s)		
	Number		1
	Rated diameter	(inch)	2
	Automatic control		yes
F 6.2	Choke Line		
	Number		2
	Inner diameter	(inch)	4 1/16
	Length	(m)	6.3
	Rated pressure	(psi)	10,000
	Manual slide		
	Number		3
	Rated pressure	(psi)	10,000
	Hydraulic slide		
	Number		2
	Rated pressure	(psi)	10,000
F 6.3	Kill Line		
	Number		2
	Inner diameter	(inch)	2
	Length	(m)	6
	Rated pressure	(psi)	10,000
	Manual slide		
	Number		4
	Rated pressure	(psi)	10,000
	Hydraulic slide		
	Number		-
	Rated pressure	(psi)	-
	Check valves		yes
	Number		2

F 6.4 Mud Gas Separator with Flare

Separator		yes
Flare height	(m)	15
Outer diameter	(inch)	12
Igniting device		electrically with pilot burner
Length of inlet	(m)	30
Rated pressure of inlet	(bar)	15

F 7 Preventer Test Equipment**F 7.1 Test Unit**

Rated pressure	(psi)	10,000
Pressure recorder		yes

F 7.2 Cup Type Tester

as per standard
piping program

F 7.3 Plug Type Tester

as per flanging (for
Permian standard)

F 8 Inner Preventer

Number		1	1
Threaded connection	(inch)	4½IF	3½IF
Rated pressure	(psi)	10,000	10,000
H2S suitability		yes	yes

Number		1
Threaded connection	(inch)	6 5/8 FH
Rated pressure	(psi)	10,000
H2S suitability		yes

F 9 Ball Check Valve

Number		
Outer diameter	(inch)	-
Inner diameter	(inch)	-
Landing nipple		
Outer diameter	(inch)	-
Inner diameter	(inch)	-
Thread connection	(inch)	-

F 10 Drill String Check Valve incl. Valve Body

Number		-
Thread connection	(inch)	-

F 11 B.O.P. Hoisting

Drive		yes
Radio remote control		pneumatic (see also A2)
		yes

G DRILL STRING

G 1 Kelly(s)

Number		n/a (Top Drive)
Outer diameter	(inch)	-
Length	(m)	-
Kelly "already piece" with protector		no

G 2 Kelly Cocks

G 2.1 Upper Kelly Cocks

Number		2
Manufacturer		MARITIME HYDRAULICS
Nominal pressure	(psi)	10,000
Operation		1 x hydraulic 1 x manual

G 3 Drill Pipe

Outer diameter	(inch)	6 5/8	5
Total length	(m)	4950	2850
Nominal weight	(lbs/ft)	27.7	25.6
Grade/quality class		G-105	C-120
Class		Premium	Premium
Threaded connection		6 5/8 FH	NC 50
Connector outer diameter	(inch)	8 1/2	6 5/8
Connector inner diameter	(inch)	4 1/4	3 1/4
Connector quality grade		API	API
Plating		yes	Smooth X
Inner coating		yes	yes
Outer diameter	(inch)	5	5
Total length	(m)	5000	1000
Nominal weight	(lbs/ft)	19.5	19.5
Grade/quality class		S-135	G-105
Class		Premium	Premium
Threaded connection		NC 50 Vam Eis	NC 50
Connector outer diameter	(inch)	6 3/8	6 3/8
Connector inner diameter	(inch)	3 1/2	3 1/4
Connector quality grade		NS1	API
Plating		Arnco 300 XT	no
Inner coating		TK 34	yes
Outer diameter	(inch)	3 1/2	
Total length	(m)	6850	
Nominal weight	(lbs/ft)	15.5	
Grade/quality class		S-135	
Class		Premium	
Threaded connection		NC 38 Vam Eis	
Connector outer diameter	(inch)	5	
Connector inner diameter	(inch)	2 3/8"	
Connector quality class		API	
Plating		no	
Inner coating		no	

G 4 Pipe Change

Suitable for 3.5" and 5" DP S-135

Number (units) 9 div. lengths

G 5 Heavy Weight Drill Pipe (HWDP)

Number	(units)	40	43
Nominal diameter	(inch)	5	3 1/2
Nominal weight	(lbs/ft)	50	26.2
Threaded connection		NC 50	NC 38
Connector outer diameter	(inch)	6 1/2	4 3/4
Connector inner diameter	(inch)	3 1/16	2 9/16
Plating	(type)	Smooth-X	Smooth-X
Model			spiral

G 6 Drill Collars (DC)

Number		22	22
Outer diameter	(inch)	9 1/2	8 1/4
Inner diameter	(inch)	3	2 13/16
Nominal weight	(kg/m)	326.1	239.3
Threaded connection	(inch)	7 5/8 Reg	6 5/8 Reg
Spiral grooves		yes	yes
Trepan for slip		no	yes

Number		20	7
Outer diameter	(inch)	6 1/2"	6 1/4"
Inner diameter	(inch)	2 13/16	2 13/16
Nominal weight	(kg/m)	130	123
Threaded connections	(inch)	NC 50	NC 46
Spiral grooves		yes	yes
Trepan for slip		yes	yes

Number		23	20
Outer diameter	(inch)	4 3/4"	4 3/4"
Inner diameter	(inch)	2 1/4"	2 1/4"
Nominal weight	(kg/m)	68	68
Threaded connection	(inch)	NC 35	NC 38
Spiral grooves		yes	yes
Trepan for slip		yes	yes

G 7 Crossover

At a sufficient amount for each bottom hole assembly to be installed by the DRILLING CONTRACTOR

H PIPE HANDLING SYSTEM

Elevator Links	1 set 2 3/4" x132" 350 Ton
Elevators	2 x 3 1/2" hand elevator 250 to 1 x 5" hand elevator 350 to 1 x 5" hand elevator 200 to 1 x 6 5/8" hand elevator 350 to
Automatic Elevator	for 6 5/8", 5" and 3 1/2" DP 1 x air elevator 350 to 1 x air elevator 250 to
Rig Tong	2 x BV 100 4"-17" 2 x BV 55 3 1/2" x 13 3/8" 2 x F 2 3/8" x 10 3/4"
Automatic Slips	2 x Blohm & Voss PSA – 150 pneumatic 2 x 3 1/2" air slips 1 x 5" air slips 1 x 6 5/8" air slips
Slips	1 x 3 1/2" hand slips 1 x 4 1/2" hand slips 2 x 5" hand slips 1 x 6 5/8" hand slips 5 x DC hand slips 4"- 4 7/8", 5 1/2" – 7", 6 3/4" – 8 1/4", 8"–9 1/2", 8 1/2"–10"
Chain Tongs	6 x chain tongs 27/8"–33/8", 3 3/4"–4 3/4" 4 1/2" – 5 5/8", 5 1/2"– 7", 6 3/4"–8 3/4", 8"–9 1/2"
Stabbing Guides	-
Bit Breaker	Standard roller cone bits as per drilling program

I MAKE-UP / BREAK-OUT EQUIPMENT

I 1 Catheads

Number -

I 2 Ezy Torque

Manufacturer MARITIME HYDRAULICS
Type MH 1887

I 3 Spinning Wrench

Manufacturer MARITIME HYDRAULICS
High Torque yes
Long rollers for piecing HWDP yes
included in I 5

I 4 Torque Wrench

Manufacturer MARITIME HYDRAULICS
High Torque design yes
included in I 5

I 5 Iron Roughneck

Manufacturer MARITIME HYDRAULICS
Type MH 1898 (BC251)
Torque (kNm)35/169

I 6 Kelly Spinner

n/a (Top Drive)

J FISHING TOOLS

Overshots incl. extension

incl. Accessories for the drill string
DRILLING CONTRACTOR, dimensions in
coordination with the drilling and piping
program; wear parts are hardened and
tempered.

K INSTRUMENTATION

K 1 Hook Load Indicator

MD/TOTCO
National Type EB

K 2 Indicators

Analogue	hook load	(tonnes)
	Weight on bit	(tonnes)
	Turntable speed	(U/min)
	Top Drive speed	(U/min)
	Drilling rate	(m/hour)
	Pump pressure	(bar)
	Iron Roughneck screw torque	(kNm)
	Torque Wrench screw torque	(kNm)
	Turntable torque	(kNm)
	Top Drive torque	(kNm)
2 x PC monitors (incl. alarm- limit)	hook load	(tonnes)
	block position	(m)
	block speed	(m/sec)
	Drilling progress	(min/m + m/hr)
	Depth	(metres)
	Chisel time	(hours)
	Chisel load	(tonnes)
	Reeving	(wires)
	Tonnes kilometre	(tokm)
	Pump strokes I + II	(strokes/min)
	Pump stroke-counter I + II	(display strokes)
	Pump rate I + II	(l/min)
	Total pump strokes	(strokes/min)
	Total pump stroke counter	(display strokes)
	Top Drive torque	(kNm)
	Turntable torque	(kNm)
	Iron Roughneck screw torque	(kNm)
	Riser pressure	(bar)
	Choke Manifold pressure	(bar)
	Top Drive rev count	(U/min)
	Turntable rev count	(U/min)

K 3 Tank Volume Indicator

For the following tanks:

Sandtrap
Shaker Tank 1
Shaker Tank 2
Suction Tank 1
Suction Tank 2
Mix Tank 1.1
Mix Tank 1.2
Mix Tank 2.1
Mix Tank 2.2
Pill Tank
Reserve Tank 1

Reserve Tank 2
Reserve Tank 3

Total volume display for active tanks yes, via PC monitor drillers cabin/tank system
Fine display supply/losses yes, via PC monitor drillers cabin/tank system

K 4 Trip Tank

Contents	(m ₃)	2 x 3.5
Circulation pump		yes, 2 x 15kW
Display incl. alarm threshold value		PC monitor drillers cabin
Linkage volume display	(m ₃)	PC monitor drillers cabin
Display of total linkage volume		PC monitor drillers cabin
Display of total volume of last trip		PC monitor drillers cabin

K 5 Annulus monitoring

Number of annulars 3

L SAFETY EQUIPMENT IN ACCORDANCE WITH MOUNTAIN REGULATIONS

Gas protection equipment at sour gas wells
External weathering in sour gas wells
First Aid equipment incl. defibrillator
Fire protection equipment

M OFFICE / ACCOMMODATION

Office building
Company Man sleeper
Toolpusher sleeper
2 x Washing and changing container
2 x Team container
(Smokers and non-smokers)
Gas protection container
Service container
Toilet and laundry container
Ladies washing and changing container
Mechanic workshop container
Store container
E-workshop incl. store
Pump store

N MISCELLANEOUS

N 1	Telephone for DRILLING CONTRACTOR		Installation by DRILLING CONTRACTOR Dues incurred by DRILLING CONTRACTOR
N 2	Pipe and Casing Rack		capacity according to drilling programme
N 3	Combustion and Welding Machine(s)		Standard devices
N 4	High Pressure Cleaner		1 ATH in container, fixed piping system with several taps
N 5	Kelly and Mousehole		
	Mousehole	(inch)	13 3/8
N 6	Pipe Calibre		one piece each for all casing sizes specified by the DRILLING OPERATOR as well as for the drill string
N 7	Bit Gauge		one piece each for all bit diameters specified by the DRILLING OPERATOR
N 8	Cellar Pump		
	Manufacturer		DIA
	Type		SHE 102 R
	Drive (electric)	(kW)	3.6
N 9	Stripping plates for drill sting		in sufficient quantity
N 10	Forklift		
	Manufacturer		Linde
	Type		H60D
	Capacity	(kN)	60
N 11	Drip-Pan		yes
N 13	Cementing Line from ground level up to Rig Floor		yes
	Rated pressure	(psi)	10,000

N 14 Communication System

Telephone system (permanently installed) in: yes,
every room office building
Drillers Cabin
Monkey Board
Tank system
Pump house
Ex mobile phone for cementing service
Directional driller
Mud laboratory
Sampler
Mech. workshop / office
E-workshop / office
Porter
SCR Container
MCC 400V
Outdoor loudspeaker drilling location
Outdoor loudspeaker platform
Outdoor loudspeaker monkey board
(mobile): 3 mobile devices (ex)

O ADDITIONAL EQUIPMENT

O1Cherry Picker

Comments:

1. The DRILLING CONTRACTOR is, pending the approval of the DRILLING OPERATOR, authorised to replace the devices mentioned above with devices which are of equal value or better technically.
2. With catching tools which are to be set by the DRILLING CONTRACTOR (position J), these may only be devices with standard dimensions.
3. The DRILLING CONTRACTOR shall arrange the casing tester for casings with API wall thicknesses in accordance with the piping programme.

