RIG DESCRIPTION

ITEM	EQUIPMENT	QTY	DESCRIPTION
SECTIO	N A – GENERAL RIG CHARACTERISTIC	<u> </u>	
	General		
	Rig Name		
	Model and Type		Trailer mounted-self elevation
	Owner		
	Designer		
	Built		2007
	Location (At effective Date)		Almeria - Spain
	Drive Engines	2	450 HP – 3408 CAT engines
	Power Generating And Distribution Equipment		
	Туре		Diesel generators CAT 3412
	Maximum rated HP output at 125°F.	1	1000 HP
	Number	2	
	Power control		Elec / Hydraulic
	Туре		CAT 3412
	Power rating	2	815 KVA each
	Power distribution		400 V x 50Hz
	SCR Configuration		NA
	Emergency Lighting		
	Accumulator Unit		
	Rig Floor	1	Self contained lighting unit with built in battery
	Sub-Base	1	Self contained lighting unit with built in battery
	Monkey Board	1	NA
	Mud Pits	4	Self contained lighting unit with built in battery
	SCR/Power Generation House	1	Self contained lighting unit with built in battery
	Generators	2	Self contained lighting unit with built in battery
	Air Compressors		
	Quantity	2	
	Make & Type		Ingersol-Rand MH55
	Power Supply & Pressure		Electric x 125 psi
	Air Receivers (Volume)	1	400 lit
	Location		Auxiliary container w/ BOP Accumulator

	Rig Operating Capabilities		
	Capacity		3000 meters x 5" D.P.
	Input HP		975 HP
	<u>Dimensions</u>		
	Drill floor Dimensions		4m x 7m
	Storage Capacity		
	Total Fuel Tank Capacity	70 000 litres	Two Tanks 2,4mx6mx2m each
			Plus daily tank 11m3 Spill Bunding
	Total Water Tanks Capacity		180 BBLS
D.,:111: F	aviament		
Drilling E	MAST MAST		
			Joseph Davis Hydraulia
	Make and Type Dimensions Crown Height		Joseph Paris - Hydraulic Hydraulic mast
	Clear Height Rotary Table to Crown		22,8m
	Clear Height Rotary Table to Elevators		17,5m
	Gross Nominal Capacity with max number of lines?	Hydraulic cylinders	160 metric tonnes up to 16m through elevator links
	Hook Load Rating with 10 Line static Load	Hydraulic cylinders	160 metric tonnes up to 16m
	Hook Block rate and type		Foremost hydraulic Top Drive 160 Metric Tonnes through the elevator links
			150 Tons through drill string
	Crown Block – Type - Rating Sheave Capacity		40 M.Tonnes x 4 = 160
	- Kating Sheave Capacity		M.Tonnes
	- Number & Diameter of Sheaves	4	sheaves 32"
	- Bumper Blocks under Crown		Included in Hydraulic cylinders
	SUBSTRUCTURE		
	Make and Type		Joseph Paris – Self elevating
	Height Rotary Table to Ground Level		5.60 m
	Clear Height under Rotary Beams to Ground Level		5.10 m
	Hook or Rotary Load		Max Rotary table Supporting Capacity Irrespective of Set Back Load 550,000 lbs

HOISTING EQUIPMENT		
<u>Drawworks</u>		
Make-type		2 x Hydraulic cylinders operated by Hyd system
		4 main Hyd pumps REXROTH A11VO 190 LRDQ/ 11LNSD12N00 driven from Rig Carrier 3408 Engines.
		Max Press = 320 bars - 4650 psi
		Operating press = 250 bars – 3600 psi
		** For hoisting mast and Top drive rotation
		Max flow: 380 L/min
		Max press: 320 bars (4650psi)
		2 auxiliary Hyd pumps REXROTH A10VO45 DFR 31LPSC62K52
		Driven from Rig carrier 3408
		** For service network (pipe feeder , BOP hoisting , Trailer rig up / down , tubular elevator , winches
		Max flow: 90 L/mn
		Max pres : 210 bars (3000 psi)
Rated input power HP		950 HP
Motors	2	CAT 3408
Drilling Depth Range ft		10 000 ft
Main drum brake type (Band or I	Disc)	Hydraulic shut off valve
Number of Hoisting speed		Automatic Hydraulic low speed when hook load is over 90 mTonnes
Number of Rotary speed		Variable 0 to 130 RPM
Brake Cooling Tank		
Cooling System		Oil- Air heat exchangers – Nominal heat dissipation : 420 kW @ dT = 40° C
DEADLINE ANCHOR		
Make and model		One hydraulic load cell per
Load Rating		line. Different from conventional rig
Wraps		
<u>CROWN SAVER</u>		

	2	Built in Hydraulic cylinders system
AUTO DRILLER	1	Automaton driving the hydraulics as per diller's settings
TRAVELING ASSEMBLIES		
Block, Type and Rating		NA
Hook, Type and Rating		150 tons through string and 160 M Tonnes through elevator links
DRILLING LINE		
		1-1/4" (32mm)
Size, Manufacturer		REDAELI Tecna Wire Ropes
Wire Type		Galvanized steel core –
Core		Anti giratory – ECA 16B32
Nominal Breaking Capacity		87 metric tonnes
String up Length		19.5m
Length remaining on		NA
(As at contract effective date)		NA
TOP DRIVE UNIT OR POWER SWIVEL		Foremost Industries F150-T
Power Input		500HP
Maximum Load		150 tons through string and 160 M Tonnes through elevator links
Maximum Drilling Torque (Continual @ 150 RPM)		25,000ft.Lbs @ 103 RPM
Maximum RPM		130 RPM
Maximum Make Up Torque		25,000ft.Lbs
Maximum Break Out Torque		25,000ft.Lbs
Drillers Console Display		Torque, RPM and position displayed at driller's consol
ROTARY EQUIPMENT		
Rotary Table		
Make and Type		Passive table
Opening		37-1/2" Opening
Master Bushings		Split VARCO
Bowl Inserts for Casing & Drill pipe	1	20"
Down inserts for Casing & Drin pipe	1	14 7/8"
	1	12"
	1	10"
Capacity		550,000 lbs
 	i	

ROTARY TABLE SLIPS		
Drill Collar	2 2	4-3/4" Varco DCS-L 6 3/4" Varco DCS-L
Drill Pipe	1 1	DENCON, AIR OPERATED 5" Type SL-1 3 ½" Type SL-1
DRILL STRING SPINNER AND TORQUE TOOL	1	NOV ST-80 Iron Roughneck
MUD SAVER BUCKET	1	c/w 5" & 3-1/2" Inserts
BIT BREAKER PLATES	1 1	6" 8 ½"
AIR HOISTS		
On the rig floor Rating	1	Hydraulic One = 5 T & One = 2 T
Rig Floor dedicated and Design Man Rider Load Rating 250 kg	1	NA Certified basket on hydraulic on Manitou arm
PIPE HANDLING EQUIPMENT		
LIFTING SUBS		
D/C"s	6	4 3/4 x 3 1/2 IF Conn 6 1/2 x 41/2 IF Conn
LIFTING CAPS		
3 ½" DP	2	3-1/2" IF (Lift Cap Pin)
5" DP	2	4-1/2" IF (Lift Cap pin)
6-½" DC	2	4 ½ IF
STANDARD – STRING ELEVATORS		
3-1/2" Drill Pipe	2	Varco MGG, Center latch
5" Drill Pipe	2	Varco MGG, Center latch
3-1/2 tubing	2	CONCENTRIC HYD ELEVATOR WITH INSERT 5", 3 ½" & 2 7/8"
2-7/8 tubing	2	SAME AS ABOVE
2-3/8 Tubing	2	
LINKS SIZE		
	1 set	132" x 5" (250Ton)
STANDARD MANUAL SLIPS		
3 1/2" DP	2	Varco SDXL
5" DP	2	Varco SDML

4 3/4" DC	2	Varco DCS-L
6 ½" DC	2	Varco DCS-L
Tubing slips	1	Tubing Spider Air Operated Model 100A Type C – 100 tons 4 ½, 3 ½, 2 7/8 and 2 3/8 size
<u>Rig Tongs</u>		
4" to 8-1/2	2	Rated load capacity 65,000 Ft- Lb's Proof Load 100,000 Ft-Lb's 4'' to 8 ½ OD
DRILL PIPE SPINNING TONG		
Make & Type		NOV ST-80 Iron Roughneck
Size & Range		2 7/8" thru 8 ½"
Power Supply		Hydraulic Hydraulic
Dog Collars/Safety Clamp		11 yuruune
Number	1	4 3/4" – 8" Bash Ross
DRILL STRING		
3-1/2" D/P	2200m	S-135 R2 13,3 Lbs NC 38 Px B thread – IPC
3-1/2" D/P — Pup Joint	Qty 2x 5ft	S-135 R2 13,3 Lbs NC 38 Px B thread – IPC
3-1/2" D/P – Pup Joint	Qty 2 x 10ft	S-135 R2 13,3 Lbs NC 38 Px B thread – IPC
3-1/2" HWDP	30 jts	23.5 lb/ft Range 2 NC 38 Px B thread –
4-3/4" SPIRAL COLLARS	8 jts	46.6 lb/ft Range 2 NC 38 Px B thread –
4-3/4" SHORT/SLICK COLLARS		N/A
5" D/P "E" Grade Drill Pipe	2200m	S-135 R2 19,5lbs NC 50 Px B thread
5" D/P "G" Grade Drill Pipe	Qty 2x 5ft	S-135 R2 19,5lbs NC 50 Px B thread
5" D/P Pup Joint	Qty 2 x 10ft	S-135 R2 19,5lbs NC 50 Px B thread
5" D/P Pup Joint	Qty 4 x 10ft	S-135 R2 19,5lbs NC 50 Px B thread
5" HWDP	30 jts	50 lb/ft Range 2 NC 50 Px B thread
6 ½" SPIRAL COLLARS	Qty 8	6 ½ Spiral DC 88.6 lb/ft Range 2 – 4 ½ IF PxB thread
Subs Inventory		
BIT SUBS	2	3 ½ Reg B x 3 ½ IF B
	2	4 ½ REG B x 4 ½ IF B

<u>Crossover Subs</u>		
	2	6 5/8 REG P X 4 ½ IF B
	2	4 ½ IF P X 4 ½ IF B
	2	3 ½ IF P X 3 ½ IF B
	2	4 ½ IF B X 2 7/8 N VAM P
	2	4 ½ IF B X 2 7/8 EU P
	2	4 ½ IF B X 3 ½ EUE P
	2	4 ½ IF P X 3 ½ IF B
	2	4 ½ IF B x 3 ½ IF P
	2	4 ½ IF B X 3 ½ N VAM P
	2	4 ½ IF B X 4 ½ EUE P
	2	4 ½ IF B X 4 ½ N VAM P
	2	3 ½ IF B X 2 7/8 N VAM P
	2	3 ½ IF B X 2 7/8 EUE P
	2	3 ½ IF B X 3 ½ N VAM P
	2	3 ½ IF B X 3 ½ EUE P
	2	3 ½ IF B X 4 ½ N VAM P
	2	3 ½ IF B X 4 ½ EUE P
CIRCULATING SUBS		
Top Entry Circulating	1	4-1/2" IF (P) x 1502 Weco
Top Entry Circulating	1	4-1/2" IF (B) x 1502 Weco
Top Entry Circulating	1	3-1/2" IF (P) x 1502 Weco
Top Entry Oncuming		C 1/2 11 (1) X 1002 Weed
Circulating System		
Shaker Tank	1	320 bbl Total Capacity
Sand trap		50 bbl
Settling Pit		65.4 bbl
Intermediate Pit		175 bbl
Trip Tank		29.6
Suction Tank	1	471 bbl Total
Pill Tank		150 bbl
Suction Pit 1		316 bbl
Slug Pit		5 bbl
Reserve Tank	1	466 bbl Total
Reserve 1		233 bbl
Reserve 2		233 bbl
Reserve 3		Xxx bbl
Caustic Mixing Facility		1 x 1.25 bbl Capacity
Mobile tank top Caustic Drui	m 1	1" Outlet
Closable Lid c/w agitation		
Bottom end 2" discharge c/w	hose	

Trip Tank	1	29.6 bbl
Manual Level Indicator Visual to Driller	1	Indicator Visible to Driller
(Level increments no greater than 1bbl/inch)		
 Feed Pumps to Wellbore	2	2x3 Halko Centrifugal Pump
Mud Through	1	
Width		14" diam pipe
Depth		
Under Grating		N/A
 (which tanks ?)		Shaker tank
<u>Pumps</u>		
Number	2	
Туре		Triplex, Emsco Type RS F1000
Drive		Independent Diesel
		DETROIT DIESEL 12V2000 G81
		1120bhp at 1800 RPM
Maximum Input Horse Power Per Pump HP		1000 HP each
Stroke Length		10 inch
Liner Sizes Available (for both pumps)		6 ½", 6", 5", 4 ½"
5-1/2" and Pressure Rating		5-1/2" 4000 psi
6" and Pressure Rating		6" 3000 psi
6-1/2" and Pressure Rating		6-1/2" 2500 psi
Pulsation dampeners (1/pump) Make	1	Hydril
Pressure Rating		20 gal/5000psi
Reset Relief Valves (1 each pump)	1	RRV Retsco
Charging Pumps (1/pump)	1	HALCO 5"x4"x14"
Suction Strainer	1	Suction strainer
Discharge Strainer	1	Dischrage strainer
Standpipe Manifold		
Pressure Rating		5000PSI
Size	2	4"OD x 3" ID
 Number of 2" 1502 Outlets		
Shale Shaker		
Make & Type	3	Model MISwaco Mongose dual motion
		With 80 and 100 mesh Screens
Vacuum Degasser		
Make & Type	1	Burgess 1000 Magna Vac

<u>Agitators</u>		
Make & Type		TRAMAT Type Propeller 15hp Location: 1 per compartment
Poor-boy Degasser	1	
Make & Type Style Size OD Size Height Mud Seal Height		3Cmetal Dubai Baffle type 48" 5meters 12 ft
Mixing Pumps		
Make & Type Sizing GPM	2	Halco Centrifuge 6" x 8" x 11" – 1750 RPM 800gpm - 75 HP
Hole Fill Pump		
Make & Type Sizing GPM	1	Mission 2" x 3" 75gpm - 20 HP
Rig Water Pump		
Make & Type	1	Mission 2" x 3" 75gpm
Surface Lines		
Size & Type (Connection) & Rating Hard Pipes Size & Type (Connection) & Rating Jumper Hoses Length		Hard pipe Sched 80, connection flanged and hammer seal connection
Shock - Rotary Hose	1	
Size & Type (Connection) & Rating Length		3"ID x 5000psi with safety chain 58.5ft
Stand Pipe	1	
Size & Type (Connection) & Rating		4"OD x 3"ID 5000psi Wing union 4" FIG-1002
WELL CONTROL EQUIPMENT		
11" Annular Type Preventers		
Make & Type Date of Delivery January 2015	1	Hydril GK 10.000psi flange bottom x 5.000psi studded top
Pressure Rating psi	1	5000psi
Spare 11" Hydril Annular Element	0	Spare annular element

Ram Type Preventers		
11" Ram Type (Single Gates)		
Size		11"
Make & Type Date of Delivery January 2015	1	Chenkai Type U, 11" x 10K Flange Top & Bottom with (2) 3-1/16" 10K Flanges side outlets
Pressure Rating psi		10.000psi
11" Ram Type (Double Gates)		
Size		11"
Make & Type Date of Delivery January 2015	1	Chenkai Type U, 11" x 10K Flange Top & Bottom with (4) 3-1/16" 10K Flanges side outlets
Pressure Rating psi		10.000psi
Rams		
For 11" BOP		
4-1/2" Sets	1	4-1/2" rams
5-1/2" Sets	1	5-1/2" rams
7" Sets	1	7" rams
Set variable ram 3-1/2" to 5"	1	set variable ram
BLIND Shear	1	1 Set Complete Block
<u>Adapter</u>		
Adapter 13-5/8" x 10K hub x 11" 10K s	tudded 1	Adapter
Spacer Spool		
WP	1	11" x 5000psi
Top connection		11" 5k Studded
TOP Size		11"
Bottom connection		11" 3k Studded
Bottom Size		11"
Bell Nipples		
11" telescopic Bell nipple	1	11 " telescopic bell nipple

Accumulator Unit		
Make & Type	1	ENERTEC E-Series style
4 Way Valve Control Functions		6 functions
Reservoir Capacity		280 Gal
Accumulator Pressure		3500 psi
No. Of Accumulator Bottles		8 bottles
Bottle Capacity		11Gal each
Main Control - Location		Driller's control room
Emergency Power		5 gls Air bottle
No. of Electric Pumps (Triplex 1") & Type		One electric pump model UET20-B
No. of Air Pumps & Type		Two Big-Sixty 60:1 air pumps
Choke Valves, Line & Manifold		
Make & Type	1	DOYLE VALVES type F C gate valve 3 1/8
Pressure Rating		5000 psi
Remote Controlled Auto Choke		
Location		In the driller's control room
Automatic Choke Control – Emergency Power		Hyd hand pump
Automatic Choke Control Supply		Air operated
HCR Valve on Choke Line	1	Cameron Hyd type
Manual Adjustable Choke Size & Type & Rating	2	Niddle 2 " x 5000psi
Choke Line Size & Type & Rating	1	3 1/8" x 5000psi steel armored
Choke Manifold Valves Size & Type & Rating	As per drawing	Gate valves 3 1/8" x 5000psi
Kill Line & Valves		
Kill Line Size, Rating & Description	1	2"ID 5000psi
Kill Line Valve Size, Rating & Description	1	One Hyd Gate valves 3 1/8" x 5000psi.
	1	One manual Gate valves 3 1/8" x 5000psi.
Kelly Cock Valves		
Upper Kelly Cock		N/A only IBOP on the TDS
Lower Kelly Cock		N/A no Kelly on this rig

FOSV		
Size & Type	2	6 ½ OD Kelly guard ball valve type 4 ½ IF PxB – 5K WP
Size & Type	2	4 7/8" OD Kelly guard ball valve type 3 ½ IF PxB – 5K WP
Inside BOP		
4-1/2" IF	1	Gray valve 65/8 10M P x B 4 ½ IF connections
3-1/2" IF	1	Gray valve 5 ¼ 10 M 3½ IF PxB connections
BOP Test Pump		
Make	1	BUXTON
Туре		Type S 15G-M air operated
Rating		15.000 psi with chart recorder
<u>Cup Testers</u>		
Casing 48-61Lb/ft	1	Type F Packard Int'l 4 1/2 IF PX B Thread
Casing 43,5-53,5Lb/ft	1	Type F Packard Int'l 3 ½ IF PxB thread
Instrumentation		
Weight Indicator	1	
Make		AUTELEC in metric tons
Parameters [Drilling] Recorder		
Make & Type	1	AUTELEC
Number of Pens		Computerized / recorded
Recording	1	Hook Load,
	1	ROP,
	1	TRQ,
	1	RPM,
	1	Pump Pressure,
	1	SPM 1 & 2
DEVIATION/DIRECTIONAL EQ	<u>DUIPMENT</u>	
Deviation Surveying Equipment		
Make & Type	1	ТОТСО
Range		8 – 16°
Timer Installation & Retriev	ing Tools	

OTHER RIG INVENTORY EQUIPMENT NOT		
<u>Listed in Sections A&B</u>		
Critical Spare Parts	Existing. Detailed list will be provided at contract signature	Full set of spare parts for all equipment sufficient for 100 days operation or two complete WELLS, either on site or at main base. (Require Critical Spares List).
Fire Prevention And Safety Equipment		
zaci, zaci, zaci, zaci,		Electronic – Drillers Console
Emergency Shut Down on Rig Floor	1	activates shutdown of 4 x Generators
Rig water fire pump system	1	DIESEL DRIVEN H2O/FOAM
Portable fire extinguishers	12	12 x CO2 6kg.
1 ortable in c camiguishers	5	5 x CO2 9kg
	15	15 x Powder 6kg
	24	24 x Powder 9kg
	8	8 x Powder 12kg
	3	3 x Powder 50kg
Confirm Certification date at contract effective date		
Eye wash station	3	Located on mud system
Emergency Shower	1	Mud Tanks
Breathing Equipment		
		(10)Breathing insulator equip. Drager SAVER CF10
		(10) Boxes for CF10
		(10)Breathing insulator equipment PA94+
		(10)Panoramic mask NOVA F
		(10) Boxes for NOVA P
Work Packs		(10)Aluminum 6 liters Bottles
Confirm Certification date at contract effective	10	200 bar
date	10	NA 1 MAG EN
Escape Packs	5	Masks with H2S Filter
First Aid Kits	2	Rig Supt office – clinic
Fire Detection Equipment	Set	Smoke Detectors
Gas Detection		
Portable Gas Detectors	1	Measuring LEL, O2, CO2, H2S.
Calibration Equipment	1	Tube & Regulator
Confirm Certification date at contract effective date	1	Tube & Regulator

H2S Detectors Confirm Certification date at contract effective date	Set	Located on the mud system , flow line , shakers
Communication Equipment		
Satellite Communication System		Use of internet 3G system and mobile phone
Computer	4	For Rig Sup, Mech, elec, safety coordinator
Printer	1	
Rig Camp		
Rig site office	1	1 x Company man /Geologist 1 x Rig supt/Radio operator 1x mechanic / Electrician / Other 1 x HSE/Clinic 1 x Meeting room/Prayer room 1 x Services company room / Toilet unit
Cranes / Vehicles		
Forklift	2	Manitou Model MRT 2150 Privilege forklift with fork, man riding basket and pipe picker device to handle tubulars for handling 2 7/8" to 13 3/8" Lift Cap 5000kg Lifting Height 20.60 meters Max Reach 18.10m Lift Max at Max reach 600kg
Welding machines		
Electric welding machines	1	ADC TRIARC / 406 / L 400 amps welding unit
Torch oxygen-acetylene welding sets	1	One set oxy-Ace cutting torch c/w fash back arrestor