Rig #2

1. 25 loads to move
2. Fuel consumption – 2500 L/day
3. 2 – series 60 Draworks
4. 2 – Series 60 Pump
5. 1 – 855 Gen.
6. 2 – 3406
7. 144” clear height, 4.9 m

RIG 2 EQUIPMENT LIST

Item	Description	
DEPTH RATING	**- 3200 metres**	
DRAWWORKS	**- Superior Model 700 PDS**	
	- Single drum	
	- Double parmac hydromatic brake	
	-Crownomatic crown saver	
	- Rated to Input HP	
a) ENGINES	**- Two Detroit Diesel Series 60 425 HP Engines equipped with DDEC control systems**	
b) TRANSMISSIONS	**- 6061 Allison transmission**	
	- 5 forward gears c/w reverse	
	- Superior Compound	
C) RATED PULLING CAPACITY		
	- Low	**- 288,000 # (128,160 daN)**
	- Second	**- 192,000 # (85,440 daN)**
	- Third	**- 144,000 # (64, 080 daN)**
	- Fourth	**- 97,000 # (43,165 daN)**
	- Fifth	**- 72,000 # (32,040 daN)**
MUD PUMPS	**- #1 – Continental Emsco F-800 Triplex Driven by Two Detroit Series 60-425 HP Engines**	
	#2 – Oil well A600 PT Triplex Driven by Two Cat 3406 Engines	

Terroco Drilling Int'l Ltd.

Item	Description
SUBSTRUCTURE	**- One piece design** **- Floor height 3.96 m (13 ft.)** **- Width at base 4.15 m (13.6ft.)** **- Length 12.19 m (40 ft.)** **- Rotary table support 125,000 daN (240,000 lbs)** **- 122, 375 daN (275,000 lbs) casing load**
MAST	**- 38.7 metres (127 ft.) Dreco angle leg** **- Floor mount Cantilever mast with a base width of 4.12 mm (13.6")** **- Rated 154,545 daN (340,000 lbs) with 8 lines** **- G.N.C. 231,800 daN (510,000 lbs)**
ROTARY TABLE	**- National C-175** **- 17 ½" x 44" centres** **- Complete with spit Master Bushings**
MATTING	**- One 2.42 m x 12.12 m x 1.81 m (8' x 40' x 6")** **- Sixteen 2.42 m x 7.27 m x 1.81 m (8' x 24' x 6")**
TRAVELLING BLOCKS	**- Gardner Denver Model 20T – 435 with 4 – 36" dia. sheaves grooved for 1 1/8" dia. lines** **- 200 Ton Capacity**
a) SWIVEL	**- 200 Ton working rated**
MUD SYSTEM	**- One 47.69 m^3 (300 bbl) suction plus 4 m^3 pill tank** **- One 55.64 m^3 (350 bbl) shaker** **- Subsurface mud guns** **- Cleanout gates**

Item	Description
	- "bean" style mix hopper - Poor boy de-gasser - Four agitators with 5 HP electric motors - Swaco Linear Shaker - Three 5" x 6" Gallagher mixing pumps - Ten HP electric motor drive hole filler pump 4m^3 trip tank
FUEL TANK	- 36.24 m^3 - 8000 gallons
WATER TANK	- 63.59 m^3 (400 bbls)
GENERATORS	- One 300 KW generator driven by 400 Cummins diesel engine - 250 KW Back up Generator w/Cat 3406
SAFETY EQUIPMENT	- Four Scott Air Packs - First Aid Kit - Stretcher - Safety Belts - Escape Buggy - Fire Extinguishers
B.O.P. EQUIPMENT:	- One model GMSC – 4E 80 – 3BN Wagner hydraulic Fluid accumulator, 280 gallon fluid reservoir tank c/w 5 station remote control Triplex hydraulic pump driven by electric motor - One 279.4 mm (11") SHAFFER SPH spherical annular bag preventer 34,500 KPA W.P. – 5000 PSI - One SHAFFER LWS single gate ram preventer with blind blocks 34,500 KPA W.P. - 5000 PSI - One SHAFFER LWS single gate ram preventer with (4 ½") pipe rams 34,500 KPA W.P. – 5000 PSI

Terroco Drilling Int'l Ltd.

Item	Description
DRILL STRING:	**- 310 Joints 4 ½ Grade E 4 ½ XH Connections**
PIPE:	
COLLARS:	**- 21 – 158 mm 4 ½ XH 2 – 222 mm 7" H-90 Conn.**
HANDLING TOOLS:	**- One set (2) 2 ¾" OD x 96" elevator links**
	- One set 4 ½" B.J. drill pipe elevators – rate 250T – 18 degree
MISCELLANEOUS	**- One self contained tool push quarters**
	- One bell automatic driller (Hi-speed Ingersoll Rand)
	- Wireline guide with hanger assembly
	- Type C Cameron weight indicator
	- Pason penless drilling recorder
	- 1 7^0 5/8 Totco drift indicator
	- Pump R.P.M. counter
	- Standby valves
	- Derrick Valves
	- Four sets of pipe racks
	- One Flo Con inside BOP
	- P700 Pipe Spinner 2 7/8" – 7" Opening
	- Two Garrett 24" bug fans
	- One 3" O.D. x 55' rotary hose 7500 # test
	- 4 ¼" square x 40' long kelly
	- Griffith Kelly cock with 6 5/8" reg. L.H. box and pin
	- Two 2" x 3" centrifugal water circulating pumps
	- One rig wash pump
	- Two fuel transfer pumps
	- 18 – 6 ¼" x 2 ¼" drill collars w/ 4 ½ x H connection

Terroco Drilling Int'l Ltd.

Item	Description
MISCELLANEOUS CONTINUED:	**- 275 Joints 4 ½" (114mm) OD, Grade E, 16.6. lb/ft range 2 drill pipe with 6 1/28" average OD tool joints 4 ½" x H thread**

Terroco Drilling Int'l Ltd.

EMSCO CONTINENTAL
F-800 SERIES TRIPLEX PUMP

SPECIFICATIONS		
Nominal Horsepower Rating	**800 @ 150 spm**	**811(metric) @ 150 spm**
Size Maximum Liner by Stroke	**6 ¾ x 9 "**	**171 x 229 mm.**
Gear, Herringbone, Ratio	**4.31:1**	
Suction Manifold Fem. Thd.	**10 in.**	
Discharge Outlet	**5" flange 5000 API**	**127 mm flange**
Pinion Shaft Diameter	**7 in.**	**178 mm.**
Extension Length	**12 – 7/16 in.**	**316 mm.**
Keyway	**1 ¾ x 7/8 in.**	**44 x 22 mm.**
Overall Length	**13 ft.**	**3962 mm.**
Overall Width	**6 ft. 9 in.**	**2057 mm.**
Overall Height (Less P.D.)	**5 ft. 5 ¼ in.**	**1657 mm.**
Skid Width	**5 ft. 1 ¾ in.**	**1568 mm.**
Approx Wt.	**27,659 lbs**	**12,546 kg.**

PERFORMANCE DATA

Strokes per minute	Horse Power Ratings	Metric Horse Power Ratings	6 – ¾" 1968 psi	171 mm 138 kg/cm^2	6-1/2" 2120 psi	165 mm 149 kg/cm^2	6" 2490 psi	152 mm 175 kg/cm^2	5" 175 kg/ cm^2	152 mm 252 kg/cm^2	4" 5000 psi	152 mm 352 kg/cm^2
160	853	865	669	2532	620	2347	529	2002	367	1389	235	889
150	800	811	627	2373	582	2203	496	1877	344	1302	221	836
140	747	757	585	2214	543	2055	463	1752	321	1215	206	780
130	693	703	543	2055	504	1908	429	1624	298	1094	191	723
120	640	649	502	1900	466	1764	397	1503	275	1041	176	666
110	587	595	459	1737	427	1616	363	1374	252	954	162	613
80	427	433	335	1266	310	1173	264	999	183	693	118	448
			4.18	15.8	3.88	14.69	3.30	12.49	2.29	8.67	1.47	5.6

Terroco Drilling Int'l Ltd.

A600 – PT
SINGLE ACTING TRIPLEX PUMP

SPECIFICATIONS	Measurement	
Pump Size		
(Maximum Piston Dia. x Stroke)	**7 x 8**	**inches**
Standard Piston Sizes	**4, 4 ½, 5, 5 ½, 5 ¼, 6, 6 ½, 7**	**inches**
Rated Brake Input Horsepower	**600 x 175**	**rpm**
Rated Working Pressure		
Discharge	**6000**	**psi**
Suction	**275**	**psi**
Hydrostatic Test Pressure		
Discharge	**9000**	**psi**
Suction	**425**	**psi**
Fluid Suction Connection		
(ANSI150 # R.F.)	**6**	**inches**
Fluid Discharge Connection		
API Flange 5000# RIJ	**4**	**inches**
Crankcase Oil Capacity	**42**	**gallons**
Gear Ratio	**46 I or 69 I**	
Input Shaft Extension:		
Diameter x Length	**4.750 x 5.750**	**inches**
Keyway Width x Depth	**1 x ½**	**inches**
Weight with Standard Equipment	**19,600**	**pounds**

DIMENSIONS	
Overall Length	**10' – 11 5/16"**
Overall Width	**8' – 3"**
Overall Height	**5' – 5"**

Terroco Drilling Int'l Ltd.

PERFORMANCE DATA

English Units

Piston Size in Inches	Maximum Pressure PSI	Gallons Per Rev.	Displacement Gallons/Min. at Pump Speeds of 50	75	100	125	150	175
4	4058	1.31	65	98	131	164	196	229
4	3207	1.65	82	124	165	206	247	289
5	2597	2.04	102	153	204	255	306	357
5 ½	2147	2.47	123	185	247	309	370	432
5 ¼	1964	2.70	135	202	270	337	405	472
6	1804	2.94	147	221	294	368	442	514
6 ½	1537	3.45	172	259	345	432	517	603
7	1325	4.00	200	300	400	500	600	700
Brake Input Horsepower			172	258	343	429	515	601
Input shaft rpm w/6.9I ratio			346	517	690	862	1035	1207
Input shaft rpm w/4/6I ratio			230	345	460	576	691	806

Metric Units

Piston Size in Mm	Maximum Pressure Kpa	Litres Per Rev.	Displacement Litres/Min. at Pumps Speeds of 50	75	100	125	150	175
102	27979	4.96	4.10	6.18	8.26	10.35	12.37	14.45
114	22111	6.25	5.17	7.82	10.41	13.00	15.58	18.23
127	17906	6.44	6.44	9.65	12.87	16.09	19.31	22.52
140	14803	9.35	7.76	11.67	15.58	19.49	23.34	27.25
146	13541	10.22	8.52	12.74	17.03	21.26	25.55	29.78
152	12438	11.1	9.27	13.94	18.55	23.22	27.89	32.43
165	10597	13.06	10.85	16.34	21.77	27.25	32.62	38.04
178	9136	15.14	12.62	18.93	25.24	31.55	37.85	44.16
Kilowatt input			128	192	256	320	384	448
Input Shaft r/min w/6.9I ratio			346	517	690	862	1035	1207
Input shaft r/min w/4.6I ratio			230	345	460	576	691	806

Based on 90% mechanical and 100% efficiency

Brake Horsepower – $\frac{\text{gpm x psl}}{1714 \times 90\% \text{ Mech. Eff.}}$

Barrels per Day = Gal. Per Rev. x rpm x 34.3

1 inch = 25.4 mm
1sq. in = 6.451 6 sq cm
1 cu. In = 0.016 386 6 litres

Gal. Per Min = Gal. Per Rev. x rpm

Gal. Per Min – $\frac{\text{bpd}}{34.3}$

Gal. Per. Rev. = $\frac{\text{Area of Piston x (Length of Stroke x \# ofPistons)}}{231}$