



Weatherford®

MGM East MACKAY I-78

Final Well Completion

Company	Shell / MGM	Reference	ZS12852.JG Rev4
Prepared for	Clint Murray	Phone	(403)-648-0847
Prepared by	Jamie Godlonton	Sales Rep	Jamie G
Service Centre	Grande Prairie 1-888-844-0301	Drawn by	Quinten Johnson
		Date	3/1/2013
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TUBULAR	Size (mm)	Weight (kg/m)	Grade	Thread	Notes
Casing	177.8	38.69	L-80	LT&C	1978
Liner	114.3/88.9	20.09/13.84	P-110/L-80	LT&C/EUE	1962.30
Frac String	114.3	20.09	P-110	LT&C	1818.80

ITEM	DESCRIPTION	I.D. (mm)	O.D. (mm)	Length (m)
B. C.	Lower Canol Casing Perforations 1869m-1871m Upper Canol Casing Perforations 1847m-1849m 1840m-1842m			
21.	114.3mm Weatherford ZS-XL ZoneSelect Ball Actuated Frac Sleeve #3 c/w 83.31mm Ball Seat ID and Requires a 85.85mm Ball	98.43	139.7	1.23
22.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing #4	99.57	127.0	12.10
23.	114.3mm Weatherford "ARES™" Hydraulic Set Open/Cased Hole Packer c/w 20.09kg/m P-110 Mandrel and 1.51m Handling Pup 69MPa Rated.	99.57	147.32	3.57
24.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing (2 x3.07, 1.86m)	99.57	127.0	8.0
25.	114.3mm Weatherford ZS-XL ZoneSelect Ball Actuated Frac Sleeve #4 c/w 86.49mm Ball Seat ID and Requires a 89.03mm Ball	98.43	139.7	1.23
26.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing #5	99.57	127.0	12.00
27.	114.3mm Genuine Otis "R" Landing Nipple c/w 93.68mm Profile HARD KOTE - LT&C Box x Pin Connections - Gauges to be Hung off Lock after Frac	93.68	127.0	0.40
28.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing Joint #6	99.57	127.0	12.09
29.	177.8mm x 114.3mm Weatherford "UltraPak HU" Upper Bore Hydraulic Set Double Grip Liner Top Packer c/w 120.65mm Upper Bore. P-110 Material - 69 MPa Rated. 114.3mm LT&C Pin Down	98.43	149.23	2.16
30.	Weatherford "LSA" Latch Seal Assembly c/w 120.65mm Seal OD and 99.57mm Min ID. 4 Bonded HNBR Seals. Right Hand Release 114.3mm LT&C Box Up Connection	99.57	146.05	2.17
31.	114.3mm, 20.09kg/m P-110 LT&C Liner Pup Joint (3.07m)	99.57	127.0	3.07
32.	114.3mm Genuine Otis "R" Landing Nipple c/w 93.68mm Profile HARD KOTE - LT&C Box x Pin Connections	93.68	127.0	0.40
33.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing Joints 7-156	99.57	127.0	1808.49
34.	Tubing hanger			0.20
	15,000 daN Compression			-0.53
	KB- CHF			5.31

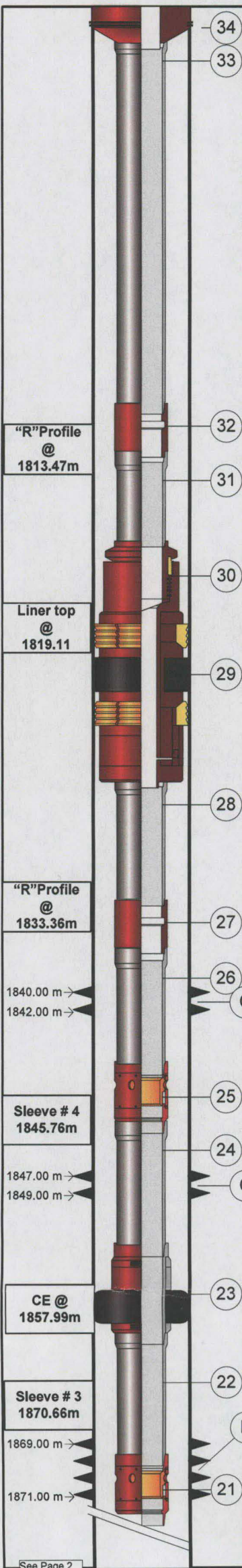
NOTES

Frac string landed in 15,000 daN of compression (0.53m)
Well circulated to 795 kg/m frac oil below line hanger and inside of liner to surface
1050 kg/m brine water in the annular of the tie back string.
Liner packed off to 22,000 kPa.
Annular pressure tested to 21,000 kPa.
Toe Sleeve to open @ 24,800 kPa.

Zone #1 displacement - 15.15 m3
Zone #2 displacement - 14.66 m3
Zone #3 displacement - 14.56 m3
Zone #4 displacement - 14.37 m3

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TUBULAR	Size (mm)	Weight (kg/m)	Grade	Thread	Notes
Casing	177.8	38.69	L-80	LT&C	1978.50
Liner	114.3/88.9	20.09/13.84	P-110/L-80	LT&C/EUE	±1950
Frac String	114.3	20.09	P-110	LT&C	±1790

ITEM	DESCRIPTION	I.D. (mm)	O.D. (mm)	Length (m)
A.	Proposed Blue Fish Casing Perforations 1946m-1948m			
B.	Proposed Lower Canol Casing Perforations 1882m-1883m			
1.	88.9mm EUE Weatherford Single Valve Float Shoe (L-80 Material)		114.3	0.34
2.	88.9mm L-80 EUE Pup Joint	76.0	114.3	3.05
3.	88.9mm EUE Weatherford Single Valve Float Collar (L-80 Material)		114.3	0.25
4.	88.9mm L-80 EUE Pup Joint	76.0	114.3	3.05
5.	88.9mm Weatherford "KLC" Locking Landing Collar – 69MPa Rated L-80 EUE Box x Pin c/w 20.65mm Stainless Steel Ball	0.68	114.7	0.24
6.	88.9mm L-80 EUE Pup Joint	76.0	114.3	3.07
6a.	88.9mm L-80 EUE Pup Joint	76.0	114.3	3.07
7.	88.9mm Weatherford "ZTA" 1A Hydraulic Actuated Toe Sleeve c/w 24.8Mpa Differential Opening Pressure (10 Pins)	59.69	114.3	1.06
7a.	88.9mm Weatherford "ZTA" 1B Hydraulic Actuated Toe Sleeve c/w 24.8Mpa Differential Opening Pressure (10 Pins)	59.69	114.3	1.06
8.	88.9mm L-80 EUE Pup Joint	76.0	114.3	3.07
9.	88.9mm Genuine Otis "RN" Landing Nipple c/w 65.07mm Profile and 59.16mm No/Go - HARD KOTE. Gauges to be Hung off Lock	59.16	114.3	0.53
10.	88.9mm L-80 EUE Pup Joint c/w Bow Spring Centralizer	76.0	114.3	3.07
11.	88.9mm EUE Pin x 114.3mm LT&C Box Crossover Sub (Supplied by Weatherford)	76.0	127.0	0.27
12.	114.3mm x 177.8mm Weatherford "Atlas" Anchor Assembly c/w 16.1MPa Activation Pressure (6 Pins)	76.0	146.05	3.87
13.	114.3mm Weatherford "ARES™" Hydraulic Set Open/Cased Hole Packer c/w 20.09kg/m P-110 Mandrel and 1.57m Handling Pup 69MPa Rated. 14.0MPa Activation Pressure	99.57	147.32	3.63
14.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing Joints 1-3	99.57	127.0	36.29
15.	114.3mm Weatherford "ARES™" Hydraulic Set Open/Cased Hole Packer c/w 20.09kg/m P-110 Mandrel and 1.58m Handling Pup 69MPa Rated.	99.57	147.32	3.64
16.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing (2 x 3.07m, 1.87m)	99.57	127.0	8.0
17.	114.3mm Weatherford ZS-XL ZoneSelect Ball Actuated Frac Sleeve #2 c/w 80.14mm Ball Seat ID and Requires a 82.68mm Ball	98.43	139.7	1.23
18.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing (2x 3.07m)	99.57	127.0	6.14
19.	114.3mm Weatherford "ARES™" Hydraulic Set Open/Cased Hole Packer c/w 20.09kg/m P-110 Mandrel and 1.52m Handling Pup 69MPa Rated.	99.57	147.32	3.58
20.	114.3mm, 20.09kg/m P-110 LT&C Liner Casing (1.86m)	99.57	127.0	1.86

NOTES

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