Schlumberger

East Division Technology Center

Mud:Spacer Compatibility Evaluation

FILE:	WESC15-214	**DATE:**	9/1/2015
CLIENT:	Northeast Energy	**LAB TECH:**	Belcher
WELL NAME:	MIP 3H		
JOB TYPE:	KOP		

Mud:Spacer Volume Percent	**Rheologies at 114degF**								
	300	**200**	**100**	**60**	**30**	**6**	**3**	**Pv**	**Yp**
100:0	33	27	18	14	10	4	3	22.5	10.5
95:5	44	35	25	20	15	5	5	28.5	15.5
75:25	44	35	25	20	15	9	7	28.5	15.5
50:50	49	40	30	24	17	10	7	28.5	20.5
25:75	52	44	33	25	20	12	10	28.5	23.5
5:95	60	51	38	34	29	20	15	33	27
0:100	52	42.5	32	26	20.5	14	11.5	30	22
R-index	8	8.5	6	8	8.5	6	3.5		
Mud:Spacer:Cement Volume Percent									
25:50:25	62	51	45	33	21	15	12	25.5	36.5
Cement	179	140	93.5	74	54.5	31	24	128.25	50.75

Density of Mud:	**12.3**	**lb/gal**
Density of Spacer:	**14.0**	**lb/gal**
Density of Cement:	**17.5**	**lb/gal**
R - Value**	**6**	

Fluids are compatible (ideal R-index should be 0).

Spacer Type:	MUDPUSH* Express

Reviewing Signature:

9/1/2015

X C. Johnson

C. Johnson
LT1
Signed by: Courtney Johnson 718719

*Denotes a Product of Schlumberger

****R-Value = The R-index of the 100 rpm dial readings.**

R < -10	Check the mixture stability, this R-index suggests fluid destabilization.
-10 < R < +10	Fluids are compatible (ideal R-index should be 0).
+10 < R < +40	Fluids are compatible.
+41 < R < +70	Fluids are slightly incompatible. Perform additional testing to find a better formulation.
R > +71	Fluids are definitively incompatible. An alternative formulation must be found.

Any 300 rpm reading in excess of 280 is considered unpumpable.