TRETOLITE

PETROLITE

WATER ANALYSIS REPORT

Mid-Continent Region
Technical Services
5801 West 10th Street
Great Bend, Kansas 67530
(316) 792-7728

Company : Mull Drilling Co.
Address :
Lease : Einsel
Well : C-1
Sample Pt. :

Date : 10/27/92
Date Sampled : 10/23/92
Analysis No. :

	ANALYSIS		mg/L		* meq/L
1.	pH	6.7			
2.	H2S	40			
3.	Specific Gravity	1.050			
4.	Total Dissolved Solids		82151.1		
5.	Suspended Solids				
6.	Dissolved Oxygen				
7.	Dissolved CO2		220		
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		220.0		
11.	Bicarbonate	HCO3	268.4	HCO3	4.4
12.	Chloride	Cl	49557.4	Cl	1398.0
13.	Sulfate	SO4	1075.0	SO4	22.4
14.	Calcium	Ca	3767.5	Ca	188.0
15.	Magnesium	Mg	1067.2	Mg	87.8
16.	Sodium (calculated)	Na	26414.1	Na	1148.9
17.	Iron	Fe	1.5		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		13802.4		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

188	*Ca <----- *HCO3	4
	/------->	
88	*Mg -----> *SO4	22
	<----------/	
1149	*Na -----> *Cl	1398

Saturation Values Dist. Water 20 C
CaCO3 13 mg/L
CaSO4 * 2H2O 2090 mg/L
BaSO4 2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	4.4	357
CaSO4	68.1	22.4	1524
CaCl2	55.5	161.2	8946
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	87.8	4180
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	1148.9	67144

REMARKS: Rob Bowman
Sales Engineer

Respectfully submitted,

R. Rush Blaz

Petrolite Oilfield Chemicals Group
Mid-Continent Region
5601 Northwest 72nd, Suite 324
Oklahoma City, OK 73132

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Company : Mull Drilling Co.
Address :
Lease : Einsel
Well : C-1
Sample Pt. :

Date : 10/12/92
Date Sampled : 10/08/92
Analysis No. :

	ANALYSIS		mg/L		* meq/L
1.	pH	7.2			
2.	H2S	50			
3.	Specific Gravity	1.050			
4.	Total Dissolved Solids		84548.9		
5.	Suspended Solids				
6.	Dissolved Oxygen				
7.	Dissolved CO2		100		
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		209.0		
11.	Bicarbonate	HCO3	255.0	HCO3	4.2
12.	Chloride	Cl	51095.3	Cl	1441.3
13.	Sulfate	SO4	975.0	SO4	20.3
14.	Calcium	Ca	3679.3	Ca	183.6
15.	Magnesium	Mg	1047.8	Mg	86.2
16.	Sodium (calculated)	Na	27496.5	Na	1196.0
17.	Iron	Fe	0.0		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		13502.1		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

184	*Ca <----- *HCO3	4
	/------->	
86	*Mg -----> *SO4	20
	<----------/	
1196	*Na -----> *Cl	1441

Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	4.2	339
CaSO4	68.1	20.3	1382
CaCl2	55.5	159.1	8829
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	86.2	4104
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	1196.0	69895

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SCALE TENDENCY REPORT

Mid-Continent Region
Technical Services
5801 West 10th Street
Great Bend, Kansas 67530
(316) 792-7728

Company	: Mull Drilling Co.	Date	: 10/27/92
Address	:	Date Sampled	: 10/23/92
Lease	: Einsel	Analysis No.	:
Well	: C-1	Analyst	: R. Rush Blaz
Sample Pt.	:		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	0.4	at	80 deg. F or	27 deg. C
S.I. =	0.5	at	100 deg. F or	38 deg. C
S.I. =	0.6	at	125 deg. F or	52 deg. C
S.I. =	0.7	at	150 deg. F or	66 deg. C
S.I. =	0.8	at	180 deg. F or	82 deg. C

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CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	3209	at	80 deg. F or	27 deg C
S =	3362	at	100 deg. F or	38 deg C
S =	3437	at	125 deg. F or	52 deg C
S =	3446	at	150 deg. F or	66 deg C
S =	3368	at	180 deg. F or	82 deg C

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Lease	: Einsel	Analysis No.	:
Well	: C-1	Analyst	: R. Rush Blaz
Sample Pt.	:		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	0.9	at	80 deg. F or	27 deg. C
S.I. =	1.0	at	100 deg. F or	38 deg. C
S.I. =	1.1	at	125 deg. F or	52 deg. C
S.I. =	1.2	at	150 deg. F or	66 deg. C
S.I. =	1.3	at	180 deg. F or	82 deg. C

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CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	3272	at	80 deg. F or	27 deg C
S =	3429	at	100 deg. F or	38 deg C
S =	3507	at	125 deg. F or	52 deg C
S =	3518	at	150 deg. F or	66 deg C
S =	3440	at	180 deg. F or	82 deg C

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