

TRETOLIT

Chemicals and Services

RETROLITE

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SEELY

10

10647 AND 10648

WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NEW MEXICO
Lease : F WATER - WASSERHUND
Well : EDISON STATION
Sample Pt. : LOAD RACK

Date : 02/17/93
Date Sampled : 02/17/93
Analysis No. : 029

ANALYSIS		mg/L		* meq/L	
-----		-----		-----	
1.	pH	7.5			
2.	H ₂ S	NEG			
3.	Specific Gravity	1.000			
4.	Total Dissolved Solids	1109.7			
5.	Suspended Solids	NR			
6.	Dissolved Oxygen	NR			
7.	Dissolved CO ₂	NR			
8.	Oil In Water	NR			
9.	Phenolphthalein Alkalinity (CaCO ₃)				
10.	Methyl Orange Alkalinity (CaCO ₃)				
11.	Bicarbonate	HCO ₃	2.0	HCO ₃	0.0
12.	Chloride	Cl	746.0	Cl	21.0
13.	Sulfate	SO ₄	70.0	SO ₄	1.5
14.	Calcium	Ca	800.0	Ca	39.9
15.	Magnesium	Mg	122.0	Mg	10.0
16.	Sodium (calculated)	Na	-630.4	Na	-27.4
17.	Iron	Fe	0.1		
18.	Barium	Ba	NR		
19.	Strontium	Sr	NR		
20.	Total Hardness (CaCO ₃)		2500.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter				Compound Equiv wt X meq/L = r			
+-----+				-----			
40	*Ca <-----	*HCO ₃	0	Ca(HCO ₃) ₂	81.0	0.0	
	/----->			CaSO ₄	68.1	1.5	
10	*Mg ----->	*SO ₄	1	CaCl ₂	55.5	21.0	1
	<-----/			Mg(HCO ₃) ₂	73.2		
-27	*Na ----->	*Cl	21	MgSO ₄	60.2		
				MgCl ₂	47.6		
Saturation Values Dist. Water 20 C				NaHCO ₃	84.0		
	CaCO ₃	13 mg/L		Na ₂ SO ₄	71.0		
	CaSO ₄ * 2H ₂ O	2090 mg/L		NaCl	58.4		
	BaSO ₄	2.4 mg/L					

REMARKS:

----- S. HOLLINGER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted
STEVE HOLLINGER

SCALE TENDENCY REPORT -----

Company	: SEELY OIL CO.	Date	: 02/17/93
Address	: ARTESIA, NEW MEXICO	Date Sampled	: 02/17/93
Lease	: F WATER - WASSERHUND	Analysis No.	: 029
Well	: EDISON STATION	Analyst	: STEVE HOLLINGER
Sample Pt.	: LOAD RACK		

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

S.I. =	-1.0	at	60 deg. F	or	16 deg. C
S.I. =	-1.0	at	80 deg. F	or	27 deg. C
S.I. =	-0.9	at	100 deg. F	or	38 deg. C
S.I. =	-0.9	at	120 deg. F	or	49 deg. C
S.I. =	-0.8	at	140 deg. F	or	60 deg. C

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

S =	699	at	60 deg. F	or	16 deg C
S =	727	at	80 deg. F	or	27 deg C
S =	728	at	100 deg. F	or	38 deg C
S =	721	at	120 deg. F	or	49 deg C
S =	711	at	140 deg. F	or	60 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted
STEVE HOLLINGER

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Hobbs, New Mexico 88241
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WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : AMOCO ST.
Well : # 1
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 260

ANALYSIS		mg/L		* meq/L
-----		----		-----
1. pH	6.7			
2. H ₂ S	POSITIVE			
3. Specific Gravity	1.145			
4. Total Dissolved Solids		241247.2		
5. Suspended Solids		NR		
6. Dissolved Oxygen		NR		
7. Dissolved CO ₂		NR		
8. Oil In Water		NR		
9. Phenolphthalein Alkalinity (CaCO ₃)				
10. Methyl Orange Alkalinity (CaCO ₃)		194.0		
11. Bicarbonate	HCO ₃	236.7	HCO ₃	3.9
12. Chloride	Cl	147639.3	Cl	4164.7
13. Sulfate	SO ₄	700.0	SO ₄	14.6
14. Calcium	Ca	13539.0	Ca	675.6
15. Magnesium	Mg	1692.0	Mg	139.2
16. Sodium (calculated)	Na	77439.0	Na	3368.4
17. Iron	Fe	1.2		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO ₃)		40776.7		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt	X meq/L	= mg
-----		-----	-----	-----	-----
676	*Ca <----- *HCO ₃	Ca (HCO ₃) ₂	81.0	3.9	31
-----	/----->	CaSO ₄	68.1	14.6	99
139	*Mg -----> *SO ₄	CaCl ₂	55.5	657.1	3646
-----	<-----/	Mg (HCO ₃) ₂	73.2		
3368	*Na -----> *Cl	MgSO ₄	60.2		
-----		MgCl ₂	47.6	139.2	662
		NaHCO ₃	84.0		
Saturation Values Dist. Water 20 C		Na ₂ SO ₄	71.0		
CaCO ₃	13 mg/L	NaCl	58.4	3368.4	19684
CaSO ₄ * 2H ₂ O	2090 mg/L				
BaSO ₄	2.4 mg/L				

REMARKS:

----- STEVE HOLLINGER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

SCALE TENDENCY REPORT

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: AMOCO ST.	Analysis No.	: 260
Well	: # 1	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	1.1	at	60 deg. F	or	16 deg. C
S.I. =	1.1	at	80 deg. F	or	27 deg. C
S.I. =	1.1	at	100 deg. F	or	38 deg. C
S.I. =	1.2	at	120 deg. F	or	49 deg. C
S.I. =	1.2	at	140 deg. F	or	60 deg. C

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

S =	1067	at	60 deg. F	or	16 deg C
S =	1184	at	80 deg. F	or	27 deg C
S =	1259	at	100 deg. F	or	38 deg C
S =	1292	at	120 deg. F	or	49 deg C
S =	1314	at	140 deg. F	or	60 deg C

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505 392-3759 Fax

WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : RHOADS
Well : # 1
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 261

ANALYSIS		mg/L		* meq/L
-----		----		-----
1. pH	7.3			
2. H ₂ S	POSITIVE			
3. Specific Gravity	1.175			
4. Total Dissolved Solids		292923.7		
5. Suspended Solids		NR		
6. Dissolved Oxygen		NR		
7. Dissolved CO ₂		NR		
8. Oil In Water		NR		
9. Phenolphthalein Alkalinity (CaCO ₃)				
10. Methyl Orange Alkalinity (CaCO ₃)		781.0		
11. Bicarbonate	HCO ₃	952.8	HCO ₃	15.6
12. Chloride	Cl	178351.6	Cl	5031.1
13. Sulfate	SO ₄	950.0	SO ₄	19.8
14. Calcium	Ca	18204.3	Ca	908.4
15. Magnesium	Mg	1487.8	Mg	122.4
16. Sodium (calculated)	Na	92780.2	Na	4035.7
17. Iron	Fe	197.0		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO ₃)		51586.4		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt	X meq/L	= mg
-----					-----
908	*Ca <----- *HCO ₃	Ca (HCO ₃) ₂	81.0	15.6	126
	/----->	CaSO ₄	68.1	19.8	134
122	*Mg -----> *SO ₄	CaCl ₂	55.5	873.0	4844
	<-----/	Mg (HCO ₃) ₂	73.2		
4036	*Na -----> *Cl	MgSO ₄	60.2		
		MgCl ₂	47.6	122.4	582
		NaHCO ₃	84.0		
		Na ₂ SO ₄	71.0		
		NaCl	58.4	4035.7	23584

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

REMARKS:

----- STEVE HOLLINGER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

SCALE TENDENCY REPORT

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: RHOADS	Analysis No.	: 261
Well	: # 1	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	2.6	at	60 deg. F	or	16 deg. C
S.I. =	2.5	at	80 deg. F	or	27 deg. C
S.I. =	2.5	at	100 deg. F	or	38 deg. C
S.I. =	2.5	at	120 deg. F	or	49 deg. C
S.I. =	2.6	at	140 deg. F	or	60 deg. C

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

S =	719	at	60 deg. F	or	16 deg C
S =	800	at	80 deg. F	or	27 deg C
S =	850	at	100 deg. F	or	38 deg C
S =	871	at	120 deg. F	or	49 deg C
S =	885	at	140 deg. F	or	60 deg C

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WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : B. C.
Well : # 1 & 2
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 262

ANALYSIS	mg/L	* meq/L
1. pH	6.8	
2. H2S	POSITIVE	
3. Specific Gravity	1.170	
4. Total Dissolved Solids	279493.8	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	NR	
8. Oil In Water	NR	
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)	177.0	
11. Bicarbonate	HCO3 215.9	HCO3 3.5
12. Chloride	Cl 170088.2	Cl 4798.0
13. Sulfate	SO4 1100.0	SO4 22.9
14. Calcium	Ca 12096.1	Ca 603.6
15. Magnesium	Mg 1225.2	Mg 100.8
16. Sodium (calculated)	Na 94719.3	Na 4120.0
17. Iron	Fe 49.0	
18. Barium	Ba NR	
19. Strontium	Sr NR	
20. Total Hardness (CaCO3)	35251.7	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= mg
604 *Ca <----- *HCO3	Ca(HCO3)2	81.0 3.5	28
----- /----->	CaSO4	68.1 22.9	155
101 *Mg -----> *SO4	CaCl2	55.5 577.2	3202
----- <----- /	Mg(HCO3)2	73.2	
4120 *Na -----> *Cl	MgSO4	60.2	
-----	MgCl2	47.6 100.8	479
Saturation Values Dist. Water 20 C	NaHCO3	84.0	
CaCO3 13 mg/L	Na2SO4	71.0	
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4 4120.0	24077
BaSO4 2.4 mg/L			

REMARKS:

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SCALE TENDENCY REPORT

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: B. C.	Analysis No.	: 262
Well	: # 1 & 2	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	1.2	at	60 deg. F	or	16 deg. C
S.I. =	1.2	at	80 deg. F	or	27 deg. C
S.I. =	1.2	at	100 deg. F	or	38 deg. C
S.I. =	1.2	at	120 deg. F	or	49 deg. C
S.I. =	1.2	at	140 deg. F	or	60 deg. C

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

S =	1134	at	60 deg. F	or	16 deg C
S =	1258	at	80 deg. F	or	27 deg C
S =	1337	at	100 deg. F	or	38 deg C
S =	1370	at	120 deg. F	or	49 deg C
S =	1393	at	140 deg. F	or	60 deg C

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WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : O. G.
Well : # 1
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 263

ANALYSIS	mg/L	* meq/L
1. pH	6.6	
2. H2S	POSITIVE	
3. Specific Gravity	1.200	
4. Total Dissolved Solids	339604.7	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	NR	
8. Oil In Water	NR	
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)	118.0	
11. Bicarbonate	HCO3 144.0	HCO3 2.4
12. Chloride	Cl 205758.5	Cl 5804.2
13. Sulfate	SO4 1500.0	SO4 31.2
14. Calcium	Ca 7823.6	Ca 390.4
15. Magnesium	Mg 1132.8	Mg 93.2
16. Sodium (calculated)	Na 123092.7	Na 5354.2
17. Iron	Fe 153.0	
18. Barium	Ba NR	
19. Strontium	Sr NR	
20. Total Hardness (CaCO3)	24201.8	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= mg
390 *Ca <----- *HCO3	Ca (HCO3) 2	81.0	2.4 19
----- /----->	CaSO4	68.1	31.2 212
93 *Mg -----> *SO4	CaCl2	55.5	356.8 1979
----- <----- /	Mg (HCO3) 2	73.2	
5354 *Na -----> *Cl	MgSO4	60.2	
	MgCl2	47.6	93.2 442
Saturation Values Dist. Water 20 C	NaHCO3	84.0	
CaCO3 13 mg/L	Na2SO4	71.0	
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	5354.2 31289
BaSO4 2.4 mg/L			

REMARKS:

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Respectfully submitted,
ROZANNE JOHNSON

SCALE TENDENCY REPORT

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: O. G.	Analysis No.	: 263
Well	: # 1	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	0.7	at	60 deg.	F or	16 deg.	C
S.I. =	0.7	at	80 deg.	F or	27 deg.	C
S.I. =	0.7	at	100 deg.	F or	38 deg.	C
S.I. =	0.7	at	120 deg.	F or	49 deg.	C
S.I. =	0.7	at	140 deg.	F or	60 deg.	C

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

S =	1563	at	60 deg.	F or	16 deg	C
S =	1729	at	80 deg.	F or	27 deg	C
S =	1831	at	100 deg.	F or	38 deg	C
S =	1873	at	120 deg.	F or	49 deg	C
S =	1901	at	140 deg.	F or	60 deg	C

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WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : SANTA FE
Well : # 1
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 264

ANALYSIS	mg/L	* meq/L
1. pH	6.1	
2. H2S	POSITIVE	
3. Specific Gravity	1.200	
4. Total Dissolved Solids	334343.5	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	NR	
8. Oil In Water	NR	
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)	118.0	
11. Bicarbonate	HCO3 144.0	HCO3 2.4
12. Chloride	Cl 203922.2	Cl 5752.4
13. Sulfate	SO4 850.0	SO4 17.7
14. Calcium	Ca 15839.6	Ca 790.4
15. Magnesium	Mg 1181.5	Mg 97.2
16. Sodium (calculated)	Na 112302.7	Na 4884.9
17. Iron	Fe 103.5	
18. Barium	Ba NR	
19. Strontium	Sr NR	
20. Total Hardness (CaCO3)	44419.9	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= m
790 *Ca <----- *HCO3	Ca (HCO3) 2	81.0	2.4
----- /----->	CaSO4	68.1	17.7
97 *Mg -----> *SO4	CaCl2	55.5	770.3
----- <----- /	Mg (HCO3) 2	73.2	
4885 *Na -----> *Cl	MgSO4	60.2	
	MgCl2	47.6	97.2
Saturation Values Dist. Water 20 C	NaHCO3	84.0	
CaCO3 13 mg/L	Na2SO4	71.0	
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	4884.9
BaSO4 2.4 mg/L			2854

REMARKS:

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ROZANNE JOHNSON

SCALE TENDENCY REPORT

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: SANTA FE	Analysis No.	: 264
Well	: # 1	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	0.5	at	60 deg.	F or	16 deg.	C
S.I. =	0.5	at	80 deg.	F or	27 deg.	C
S.I. =	0.5	at	100 deg.	F or	38 deg.	C
S.I. =	0.5	at	120 deg.	F or	49 deg.	C
S.I. =	0.5	at	140 deg.	F or	60 deg.	C

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

S =	740	at	60 deg.	F or	16 deg	C
S =	823	at	80 deg.	F or	27 deg	C
S =	873	at	100 deg.	F or	38 deg	C
S =	895	at	120 deg.	F or	49 deg	C
S =	909	at	140 deg.	F or	60 deg	C

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WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : A. J.
Well : # 1
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 265

ANALYSIS	mg/L	* meq/L
1. pH	6.8	
2. H2S	POSITIVE	
3. Specific Gravity	1.155	
4. Total Dissolved Solids	258788.7	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	NR	
8. Oil In Water	NR	
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)	327.0	
11. Bicarbonate	HCO3 398.9	HCO3 6.5
12. Chloride	Cl 157922.7	Cl 4454.8
13. Sulfate	SO4 950.0	SO4 19.8
14. Calcium	Ca 16569.1	Ca 826.8
15. Magnesium	Mg 1205.8	Mg 99.2
16. Sodium (calculated)	Na 81732.3	Na 3555.1
17. Iron	Fe 10.0	
18. Barium	Ba NR	
19. Strontium	Sr NR	
20. Total Hardness (CaCO3)	46341.7	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= mg
827 *Ca <----- *HCO3	Ca (HCO3) 2	81.0	6.5
/----->	CaSO4	68.1	19.8
99 *Mg -----> *SO4	CaCl2	55.5	800.5
<-----/	Mg (HCO3) 2	73.2	
3555 *Na -----> *Cl	MgSO4	60.2	
	MgCl2	47.6	99.2
Saturation Values Dist. Water 20 C	NaHCO3	84.0	
CaCO3 13 mg/L	Na2SO4	71.0	
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	3555.1
BaSO4 2.4 mg/L			2077

REMARKS:

----- STEVE HOLLINGER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted
ROZANNE JOHNSON

SCALE TENDENCY REPORT -----

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: A. J.	Analysis No.	: 265
Well	: # 1	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	1.6	at	60 deg.	F or	16 deg.	C
S.I. =	1.6	at	80 deg.	F or	27 deg.	C
S.I. =	1.6	at	100 deg.	F or	38 deg.	C
S.I. =	1.6	at	120 deg.	F or	49 deg.	C
S.I. =	1.6	at	140 deg.	F or	60 deg.	C

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

S =	847	at	60 deg.	F or	16 deg.	C
S =	942	at	80 deg.	F or	27 deg.	C
S =	1001	at	100 deg.	F or	38 deg.	C
S =	1027	at	120 deg.	F or	49 deg.	C
S =	1045	at	140 deg.	F or	60 deg.	C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

TRETOLITE

PETROLITE

16010 Barker's Point Lane, Suite 450
Houston, Texas 77079-4021
713 558-5200 • Fax: 713 589-4737

Reply to: PO Box 5250
HCCOS, New Mexico 88241
505 392-6711 Phone
505 392-3759 Fax

WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : SANTE FE
Well : # 2
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 266

ANALYSIS	mg/L	* meq/L
1. pH	6.7	
2. H2S	POSITIVE	
3. Specific Gravity	1.165	
4. Total Dissolved Solids	274931.8	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	NR	
8. Oil In Water	NR	
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)	345.0	
11. Bicarbonate	HCO3 420.9	HCO3 6.9
12. Chloride	Cl 167976.5	Cl 4738.4
13. Sulfate	SO4 350.0	SO4 7.3
14. Calcium	Ca 13643.2	Ca 680.8
15. Magnesium	Mg 1220.4	Mg 100.4
16. Sodium (calculated)	Na 91302.3	Na 3971.4
17. Iron	Fe 18.5	
18. Barium	Ba NR	
19. Strontium	Sr NR	
20. Total Hardness (CaCO3)	39095.2	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= mg
681 *Ca <----- *HCO3	Ca (HCO3) 2	81.0	55.2
----- /----->	CaSO4	68.1	46.1
100 *Mg -----> *SO4	CaCl2	55.5	369.5
----- <----- /	Mg (HCO3) 2	73.2	
3971 *Na -----> *Cl	MgSO4	60.2	
	MgCl2	47.6	100.4
	NaHCO3	84.0	
	Na2SO4	71.0	
	NaCl	58.4	3971.4
Saturation Values Dist. Water 20 C			2320.8
CaCO3 13 mg/L			
CaSO4 * 2H2O 2090 mg/L			
BaSO4 2.4 mg/L			

REMARKS:

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Petrolite Oilfield Chemicals Group

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SCALE TENDENCY REPORT

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: SANTE FE	Analysis No.	: 266
Well	: # 2	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	1.4	at	60 deg. F	or	16 deg. C
S.I. =	1.4	at	80 deg. F	or	27 deg. C
S.I. =	1.4	at	100 deg. F	or	38 deg. C
S.I. =	1.4	at	120 deg. F	or	49 deg. C
S.I. =	1.5	at	140 deg. F	or	60 deg. C

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

S =	989	at	60 deg. F	or	16 deg C
S =	1098	at	80 deg. F	or	27 deg C
S =	1167	at	100 deg. F	or	38 deg C
S =	1197	at	120 deg. F	or	49 deg C
S =	1217	at	140 deg. F	or	60 deg C

Petrolite Oilfield Chemicals Group

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Hobbs, New Mexico 88241
505 392-6711 Phone
505 392-3759 Fax

WATER ANALYSIS REPORT

Company : SEELY OIL CO.
Address : ARTESIA, NM
Lease : NEW MEXICO STATE
Well : # 2
Sample Pt. : BATTERY

Date : 2-16-93
Date Sampled : 2-16-93
Analysis No. : 267

ANALYSIS		mg/L		* meq/L
1. pH	6.8			
2. H2S	POSITIVE			
3. Specific Gravity	1.165			
4. Total Dissolved Solids		273561.0		
5. Suspended Solids		NR		
6. Dissolved Oxygen		NR		
7. Dissolved CO2		NR		
8. Oil In Water		NR		
9. Phenolphthalein Alkalinity (CaCO3)				
10. Methyl Orange Alkalinity (CaCO3)		330.0		
11. Bicarbonate	HCO3	402.6	HCO3	6.6
12. Chloride	Cl	167104.2	Cl	4713.8
13. Sulfate	SO4	400.0	SO4	8.3
14. Calcium	Ca	13691.3	Ca	683.2
15. Magnesium	Mg	1191.2	Mg	98.0
16. Sodium (calculated)	Na	90753.7	Na	3947.5
17. Iron	Fe	18.0		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO3)		39095.2		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt X meq/L	= mg
683	*Ca <----- *HCO3	Ca (HCO3) 2	81.0	6.6
98	*Mg <-----> *SO4	CaSO4	68.1	8.3
3948	*Na <-----> *Cl	CaCl2	55.5	668.3
		Mg (HCO3) 2	73.2	
		MgSO4	60.2	
		MgCl2	47.6	98.0
		NaHCO3	84.0	
		Na2SO4	71.0	
		NaCl	58.4	3947.5
Saturation Values Dist. Water 20 C				
CaCO3	13 mg/L			
CaSO4 * 2H2O	2090 mg/L			
BaSO4	2.4 mg/L			

REMARKS:

----- STEVE HOLLINGER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

SCALE TENDENCY REPORT -----

Company	: SEELY OIL CO.	Date	: 2-16-93
Address	: ARTESIA, NM	Date Sampled	: 2-16-93
Lease	: NEW MEXICO STATE	Analysis No.	: 267
Well	: # 2	Analyst	: ROZANNE JOHNSON
Sample Pt.	: BATTERY		

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

S.I. =	1.5	at	60 deg. F	or	16 deg. C
S.I. =	1.5	at	80 deg. F	or	27 deg. C
S.I. =	1.5	at	100 deg. F	or	38 deg. C
S.I. =	1.5	at	120 deg. F	or	49 deg. C
S.I. =	1.5	at	140 deg. F	or	60 deg. C

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

S =	989	at	60 deg. F	or	16 deg C
S =	1099	at	80 deg. F	or	27 deg C
S =	1168	at	100 deg. F	or	38 deg C
S =	1197	at	120 deg. F	or	49 deg C
S =	1217	at	140 deg. F	or	60 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON