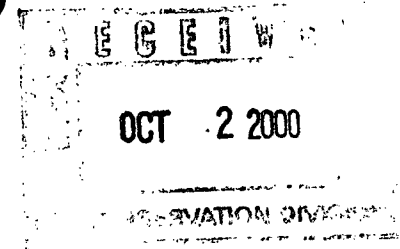


BW - 13

MONITORING REPORTS

DATE:

John R. Stearns dba Stearns
HC 65 Box 988
Crossroads, NM 88114
September 29, 2000



New Mexico Energy Minerals & Natural Resources
Oil Conservation Division
2040 S. Pacheco Street
Santa Fe, NM 87505

Re: Discharge Plan BW-013: First Annual Report

This letter is to meet our agreed date of reporting information concerning our discharge plan which was approved February 24, 2000.

- Discharge plan fee, \$690.00, was mailed to OCD, May 26, 2000.
- Lou Ann and John Bob Stearns have been in contact with Wayne Price, OCD Environment Bureau, on several occasions to work out mutual methods of complying with discharge plan requirements. Mechanical Integrity Test of the brine well will be scheduled and witnessed by Mr. Price in November 2000. A formula to calculate the cavity size from brine production will be provided by Wayne Price. The remote location and geological formation at the site of this brine station make cavity size a mute point in regard to threat of collapse or subsidence.
- The recently lined (1999) emergency pit presently has a small amount of fresh water to keep the liner in place. We have an exemption to Div. Order R8952: Protection of Migratory Birds, Permit #H-4 (1989, KTS).
- The brine well at the facility consistently produces saturated 10-10.2 pound/gallon brine water at a well head pressure of 290-310 psi. Fresh water is injected down the casing and brine is recovered up the tubing. Amounts of brine water produced have been: 4th quarter 1999: 1,175 bbls., 1st quar. 2000: 11,017 bbls., 2nd quar. 2000: 9855 bbls. The amount of fresh water used from the two wells on the property to produce this brine is close to the same figures since the salt cavity is full of fresh water and brine production is the product of displacement.
- A new catch tank at brine well was installed in 1999 (2 ft. depth x 8 ft. diameter) -- used to catch drainage from truck ramp and valves at wellhead. Visual inspection by our staff shows this tank, pit liner and lines to storage tanks to be okay.
- The plan for storm water run-off is the same as emergency spills...lined catch pit and berm around storage tanks. This facility is located on flat plains (no hills, rivers or lakes).

Stearns will continue to work with your office to meet the continuing obligations of our Discharge Plan BW-013.

Sincerely,

John R. Stearns dba Stearns
Lou Ann Stearns, Co-owner

Attachments

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : *John R* Stearns ~~XXXX~~
 Lease : KTS
 Well No. : # 1
 Lab No. : G:\ANALYSES\Jun2200.002

Sample Loc. : Fresh Water
 Date Analyzed: 22-June-2000
 Date Sampled : 09-June-2000

ANALYSIS

1. pH 7.220
2. Specific Gravity 60/60 F. 1.008
3. CaCO₃ Saturation Index @ 80 F. -0.055
 @ 140 F. +0.715

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

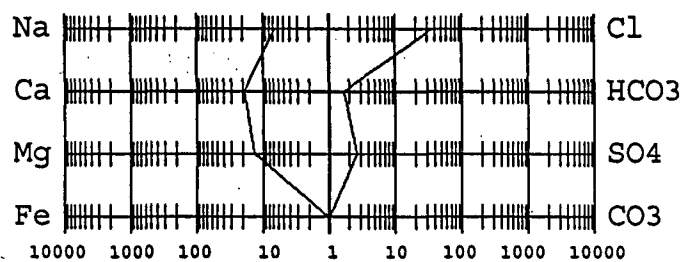
Cations

- | | | | |
|------------------------------|----------------|----------|-------|
| 7. Calcium (Ca++) | 370 | / 20.1 = | 18.41 |
| 8. Magnesium (Mg++) | 160 | / 12.2 = | 13.11 |
| 9. Sodium (Na+) (Calculated) | 145 | / 23.0 = | 6.30 |
| 10. Barium (Ba++) | Not Determined | | |

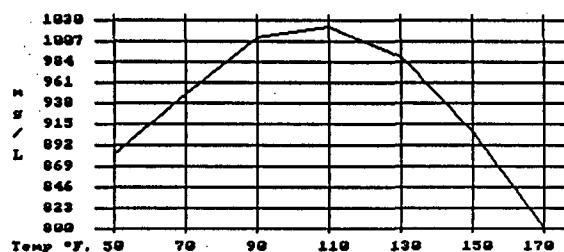
Anions

- | | | | |
|--|------------|----------|-------|
| 11. Hydroxyl (OH-) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ =) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ -) | 98 | / 61.1 = | 1.60 |
| 14. Sulfate (SO ₄ ²⁻) | 120 | / 48.8 = | 2.46 |
| 15. Chloride (Cl ⁻) | 1,200 | / 35.5 = | 33.80 |
| 16. Total Dissolved Solids | 2,093 | | |
| 17. Total Iron (Fe) | 5 | / 18.2 = | 0.27 |
| 18. Total Hardness As CaCO ₃ | 1,585 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.155 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	1.60	130
CaSO ₄	68.07	2.46	167
CaCl ₂	55.50	14.35	796
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	13.11	625
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	6.34	371

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : *John R.* Stearns ~~XXXXXXXX~~

Lease : KTS

Well No. : # 2

Lab No. : G:\ANALYSES\Jun2200.002

Sample Loc. : Fresh Water

Date Analyzed: 22-June-2000

Date Sampled : 09-June-2000

ANALYSIS

1. pH 7.190
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index @ 80 F. +0.142
@ 140 F. +0.842

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

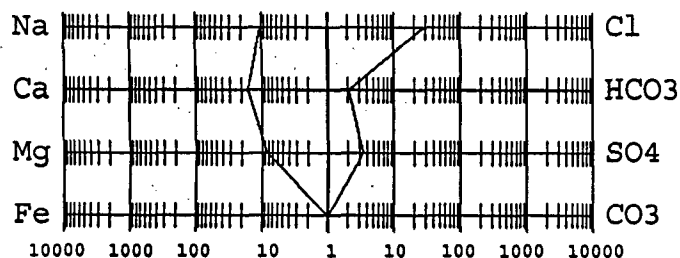
Cations

- | | | | |
|------------------------------|----------------|----------|-------|
| 7. Calcium (Ca++) | 317 | / 20.1 = | 15.77 |
| 8. Magnesium (Mg++) | 96 | / 12.2 = | 7.87 |
| 9. Sodium (Na+) (Calculated) | 226 | / 23.0 = | 9.83 |
| 10. Barium (Ba++) | Not Determined | | |

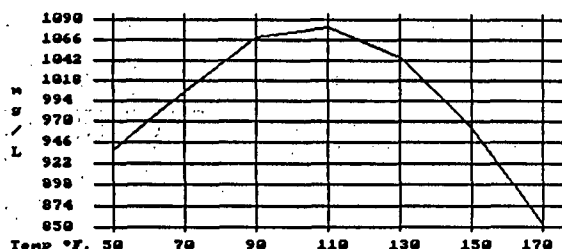
Anions

- | | | | |
|---|------------|----------|-------|
| 11. Hydroxyl (OH-) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ =) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ -) | 122 | / 61.1 = | 2.00 |
| 14. Sulfate (SO ₄ =) | 160 | / 48.8 = | 3.28 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,921 | | |
| 17. Total Iron (Fe) | 6 | / 18.2 = | 0.30 |
| 18. Total Hardness As CaCO ₃ | 1,189 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.497 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	2.00	162
CaSO ₄	68.07	3.28	223
CaCl ₂	55.50	10.50	583
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	7.87	375
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	9.80	573

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Stearns ~~XXXXXX~~
 Lease : KTS
 Well No. : # 1
 Lab No. : F:\ANALYSES\Sep2100.001

Sample Loc. :
 Date Analyzed: 21-September-2000
 Date Sampled : 11-September-2000

ANALYSIS

1. pH 7.320
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index @ 80 F. +0.308
 @ 140 F. +1.008

Dissolved Gasses MG/L EQ. WT. *MEQ/L

4. Hydrogen Sulfide Not Present
5. Carbon Dioxide Not Determined
6. Dissolved Oxygen Not Determined

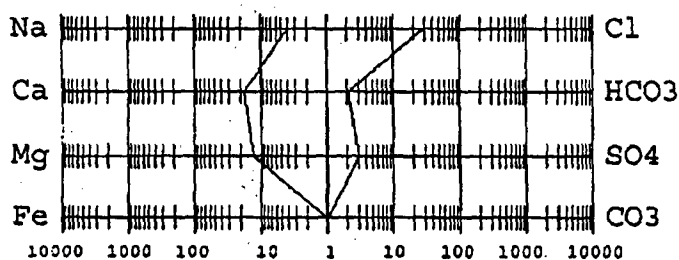
Cations

- | | | | | | | |
|--------------|--------|----------------|---|------|---|-------|
| 7. Calcium | {Ca++} | 344 | / | 20.1 | = | 17.11 |
| 8. Magnesium | {Mg++} | 149 | / | 12.2 | = | 12.21 |
| 9. Sodium | {Na+} | 85 | / | 23.0 | = | 3.70 |
| 10. Barium | {Ba++} | (Calculated) | | | | |
| | | Not Determined | | | | |

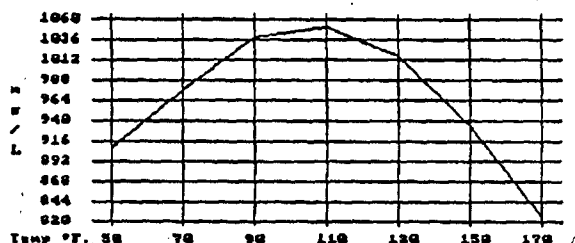
Anions

- | | | | | | | |
|---|----------------------|-------|------|------|---|-------|
| 11. Hydroxyl | {OH-} | 0 | / | 17.0 | = | 0.00 |
| 12. Carbonate | {CO ₃ =} | 0 | / | 30.0 | = | 0.00 |
| 13. Bicarbonate | {HCO ₃ -} | 122 | / | 61.1 | = | 2.00 |
| 14. Sulfate | {SO ₄ =} | 140 | / | 48.8 | = | 2.87 |
| 15. Chloride | {Cl ¹ } | 1,000 | / | 35.5 | = | 28.17 |
| 16. Total Dissolved Solids | | 1,840 | | | | |
| 17. Total Iron (Fe) | | 2 | / | 18.2 | = | 0.08 |
| 18. Total Hardness As CaCO ₃ | | 1,473 | | | | |
| 19. Resistivity @ 75 F. (Calculated) | | 3.524 | /cm. | | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	2.00	162
CaSO ₄	68.07	2.87	195
CaCl ₂	55.50	12.25	680
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	12.21	582
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	3.71	217

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Stearns ~~XXXXXX~~
 Lease : KTS
 Well No. : # 2
 Lab No. : F:\ANALYSES\Sep2100.001

Sample Loc. :
 Date Analyzed: 21-September-2000
 Date Sampled : 11-September-2000

ANALYSIS

1. pH 7.300
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index @ 80 F. +0.106
 @ 140 F. +0.806

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

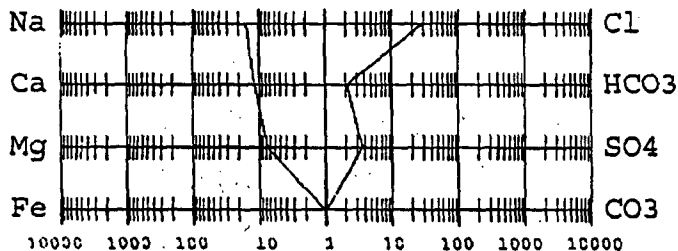
Cations

- | | | | |
|------------------------------|----------------|----------|-------|
| 7. Calcium (Ca++) | 226 | / 20.1 = | 11.24 |
| 8. Magnesium (Mg++) | 89 | / 12.2 = | 7.30 |
| 9. Sodium (Na+) (Calculated) | 348 | / 23.0 = | 15.13 |
| 10. Barium (Ba++) | Not Determined | | |

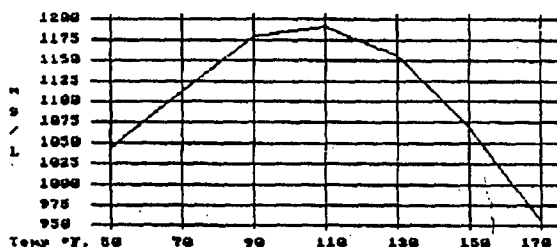
Anions

- | | | | |
|---|------------|----------|-------|
| 11. Hydroxyl (OH-) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ =) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ -) | 122 | / 61.1 = | 2.00 |
| 14. Sulfate (SO ₄ =) | 170 | / 48.8 = | 3.48 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,955 | | |
| 17. Total Iron (Fe) | 2 | / 18.2 = | 0.08 |
| 18. Total Hardness As CaCO ₃ | 933 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.462 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION			
COMPOUND	EQ. WT. X	*meq/L = mg/L.	
Ca(HCO ₃) ₂	81.04	2.00	162
CaSO ₄	68.07	3.48	237
CaCl ₂	55.50	5.76	320
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	7.30	347
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	15.11	883

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : KTS
Lease : Stearns
Well No. : So. Fresh Water
Lab No. : F:\ANALYSES\Dec2999.001

Sample Loc. :
Date Analyzed: 29-December-1999
Date Sampled : 17-December-1999

ANALYSIS

1. pH 7.210
2. Specific Gravity 60/60 F. 1.008
3. CaCO₃ Saturation Index @ 80 F. +0.139
@ 140 F. +0.839

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

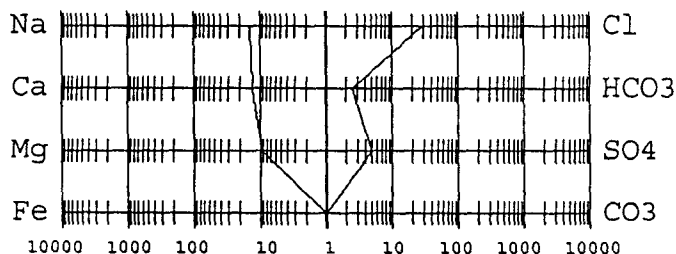
Cations

- | | | | |
|------------------------------|----------------|----------|-------|
| 7. Calcium (Ca++) | 251 | / 20.1 = | 12.49 |
| 8. Magnesium (Mg++) | 109 | / 12.2 = | 8.93 |
| 9. Sodium (Na+) (Calculated) | 319 | / 23.0 = | 13.87 |
| 10. Barium (Ba++) | Not Determined | | |

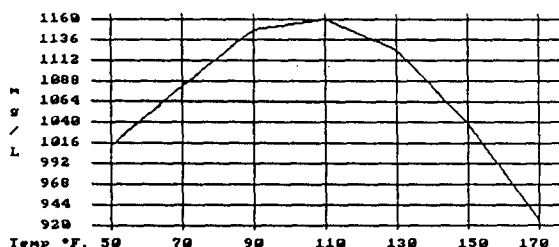
Anions

- | | | | |
|--|------------|----------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 146 | / 61.1 = | 2.39 |
| 14. Sulfate (SO ₄ ⁼) | 230 | / 48.8 = | 4.71 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 2,055 | | |
| 17. Total Iron (Fe) | 3 | / 18.2 = | 0.14 |
| 18. Total Hardness As CaCO ₃ | 1,076 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.368 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	2.39	194
CaSO ₄	68.07	4.71	321
CaCl ₂	55.50	5.38	299
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCL ₂	47.62	8.93	425
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	13.85	810

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : KTS
 Lease : Stearns
 Well No.: West Fresh Water
 Lab No. : F:\ANALYSES\Dec2999.001

Sample Loc. :
 Date Analyzed: 29-December-1999
 Date Sampled : 17-December-1999

ANALYSIS

1. pH 7.100
2. Specific Gravity 60/60 F. 1.008
3. CaCO₃ Saturation Index @ 80 F. -0.012
 @ 140 F. +0.758

Dissolved Gasses

	MG/L	EQ. WT.	*MEQ/L
4. Hydrogen Sulfide	0		
5. Carbon Dioxide	Not Determined		
6. Dissolved Oxygen	Not Determined		

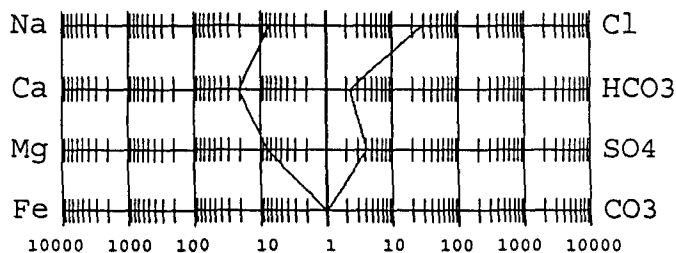
Cations

7. Calcium (Ca ⁺⁺)	401	/ 20.1 =	19.95
8. Magnesium (Mg ⁺⁺)	91	/ 12.2 =	7.46
9. Sodium (Na ⁺)	159	/ 23.0 =	6.91
10. Barium (Ba ⁺⁺)	Not Determined		

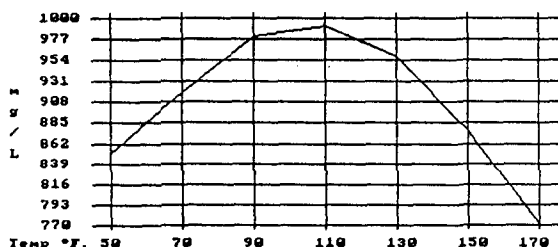
Anions

11. Hydroxyl (OH ⁻)	0	/ 17.0 =	0.00
12. Carbonate (CO ₃ ⁼)	0	/ 30.0 =	0.00
13. Bicarbonate (HCO ₃ ⁻)	132	/ 61.1 =	2.16
14. Sulfate (SO ₄ ⁼)	195	/ 48.8 =	4.00
15. Chloride (Cl ⁻)	1,000	/ 35.5 =	28.17
16. Total Dissolved Solids	1,978		
17. Total Iron (Fe)	2	/ 18.2 =	0.08
18. Total Hardness As CaCO ₃	1,376		
19. Resistivity @ 75 F. (Calculated)	3.466 /cm.		

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile

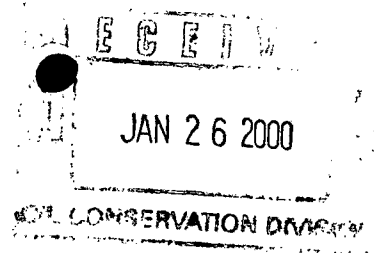


PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca(HCO ₃) ₂	81.04	2.16	175
CaSO ₄	68.07	4.00	272
CaCl ₂	55.50	13.79	766
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	7.46	355
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	6.92	404

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.



Kenneth Tank Service / Stearns, Inc.

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

*Mineral Level
M15635*

Average working pressure of brine well 290-310 PSI.

Average brine water weight 10.0-10.2 lbs.

^{6.3.01}
Fresh Water analysis reports attached.

for KTS Well #1 & #2

Report submitted by:

Signature

[Signature]

Date

Jan. 15, 2000

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports CONSERVATION DIVISION
CROSSROADS, NEW MEXICO 88114

OCT 25 1999

PHONE: 505-675-2356
505-675-2357

Kenneth Tank Service / Stearns, Inc.

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY BW-013
Crossroads, NM

*3rd quarter
1999*

Average working pressure of brine well 280-300[#] ~~1000~~ psi

Average brine water weight 10.0-10.2 lbs.

Water analysis reports attached. ✓

Report submitted by:

Signature

L. Stearns

Date

10/15/99

*Quantity Brine Prod. 3rd quarter 1999
Approx. 9500 bbls.*

*(about SAME amount of fresh water
injected.)*

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : K T S/*Steno*s
 Lease : N/A
 Well No. : South Well
 Lab No. : 092298.001

Sample Loc. : Fresh Water
 Date Analyzed: 22-September 99
 Date Sampled :

ANALYSIS

- | | |
|---|-----------------|
| 1. pH | 7.320 |
| 2. Specific Gravity 60/60 F. | 1.003 |
| 3. CaCO ₃ Saturation Index @ 80 F. | +0.254 |
| | @ 140 F. +0.954 |

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

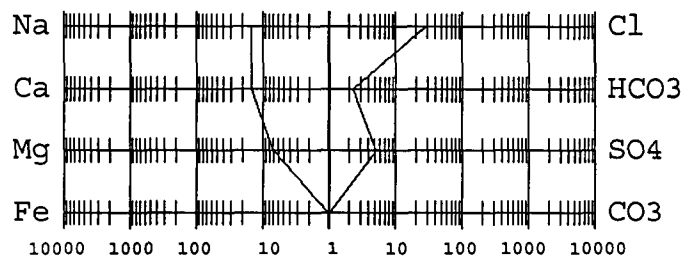
Cations

- | | | MG/L | EQ. WT. | *MEQ/L |
|--------------|--------|----------|----------|--------|
| 7. Calcium | {Ca++} | 281 | / 20.1 = | 13.98 |
| 8. Magnesium | {Mg++} | 82 | / 12.2 = | 6.72 |
| 9. Sodium | {Na+} | 333 | / 23.0 = | 14.48 |
| 10. Barium | {Ba++} | Below 10 | | |
- (Calculated)

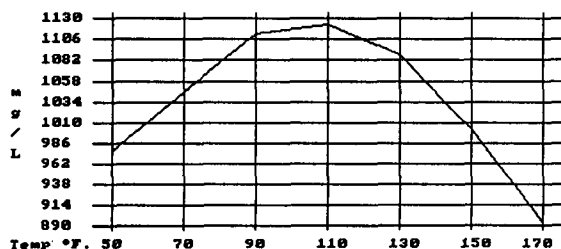
Anions

- | | | | | |
|---|----------------------|------------|----------|-------|
| 11. Hydroxyl | {OH-} | 0 | / 17.0 = | 0.00 |
| 12. Carbonate | {CO ₃ =} | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate | {HCO ₃ -} | 132 | / 61.1 = | 2.16 |
| 14. Sulfate | {SO ₄ =} | 235 | / 48.8 = | 4.82 |
| 15. Chloride | {Cl-} | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | | 2,063 | | |
| 17. Total Iron (Fe) | | 2 | / 18.2 = | 0.11 |
| 18. Total Hardness As CaCO ₃ | | 1,041 | | |
| 19. Resistivity @ 75 F. (Calculated) | | 3.385 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca(HCO ₃) ₂	81.04	2.16	175
CaSO ₄	68.07	4.82	328
CaCl ₂	55.50	7.00	389
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCL ₂	47.62	6.72	320
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	14.44	844

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : K T S / *STEARNS*
 Lease : *N/A*
 Well No. : *West Well*
 Lab No. : 092298.001

Sample Loc. : Fresh Water
 Date Analyzed: 22-September 99
 Date Sampled :

ANALYSIS

1. pH 7.370
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index @ 80 F. +0.340
 @ 140 F. +1.040

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

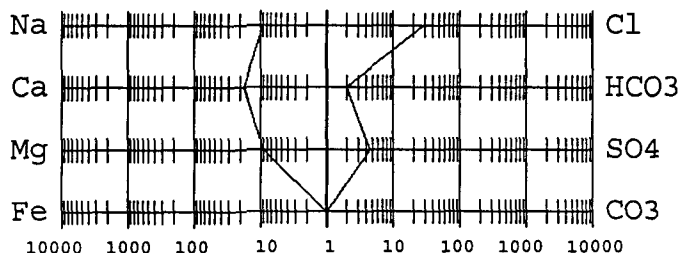
Cations

- | | | | |
|---|----------|----------|-------|
| 7. Calcium (Ca ⁺⁺) | 344 | / 20.1 = | 17.11 |
| 8. Magnesium (Mg ⁺⁺) | 107 | / 12.2 = | 8.77 |
| 9. Sodium (Na ⁺) (Calculated) | 196 | / 23.0 = | 8.52 |
| 10. Barium (Ba ⁺⁺) | Below 10 | | |

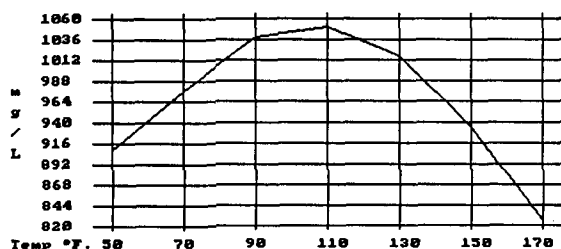
Anions

- | | | | |
|--|------------|----------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 117 | / 61.1 = | 1.91 |
| 14. Sulfate (SO ₄ ⁼) | 210 | / 48.8 = | 4.30 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,974 | | |
| 17. Total Iron (Fe) | 2 | / 18.2 = | 0.08 |
| 18. Total Hardness As CaCO ₃ | 1,301 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.442 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	1.91	155
CaSO ₄	68.07	4.30	293
CaCl ₂	55.50	10.90	605
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	8.77	418
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	8.50	497

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

Kenneth Tank Service / Stearns, Inc.

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

RECEIVED
JUL 27 1999
Environmental Bureau
Oil Conservation Division

Average working pressure of brine well 290-310 PSI

Average brine water weight 10 lbs.

Water analysis reports attached. ✓

Report submitted by:

Signature *J.A. Stearns*

Date 7/26/99

*Quantity brine produced Apr, May, June 1999
2000 bbls.*

*(approx. same amount of fresh water
injected. 2000 bbls.)*

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : KTS
 Lease : South
 Well No. : Fresh Water
 Lab No. : F:\ANALYSES\Jul2699.001

Sample Loc. :
 Date Analyzed: 26-July-1999
 Date Sampled : 13-July-1999

ANALYSIS

1. pH 7.480
 2. Specific Gravity 60/60 F. 1.003
 3. CaCO₃ Saturation Index @ 80 F. +0.410
 @ 140 F. +1.110

Dissolved Gases

4. Hydrogen Sulfide
 5. Carbon Dioxide
 6. Dissolved Oxygen

Not Present
 Not Determined
 Not Determined

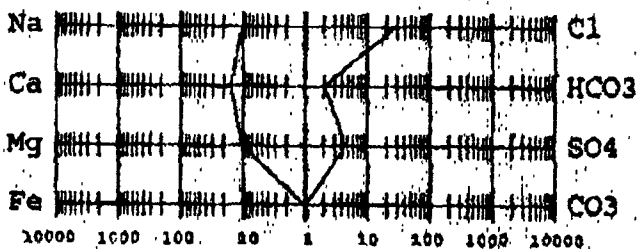
MG/L EQ. WT. *MEQ/L

Cations

7. Calcium {Ca++} 301 / 20.1 = 14.98
 8. Magnesium {Mg++} 122 / 12.2 = 10.00
 9. Sodium {Na+} 219 (Calculated) / 23.0 = 9.52
 10. Barium {Ba++} 0 / 68.7 = 0.00

Anions

11. Hydroxyl {OH-} 0 / 17.0 = 0.00
 12. Carbonate {CO₃²⁻} 0 / 30.0 = 0.00
 13. Bicarbonate {HCO₃⁻} 122 / 61.1 = 2.00
 14. Sulfate {SO₄²⁻} 210 / 48.8 = 4.30
 15. Chloride {Cl⁻} 1,000 / 35.5 = 28.17
 16. Total Dissolved Solids 1,974
 17. Total Iron (Fe) 4
 18. Total Hardness As CaCO₃ 1,251 / 18.2 = 0.22
 19. Resistivity @ 75 F. (Calculated) 3.424 /cm.

LOGARITHMIC WATER PATTERN
*meq/L.

Calcium Sulfate Solubility Profile

PROBABLE MINERAL COMPOSITION
COMPOUND EQ. WT. X *meq/L = mg/L.

Ca(HCO ₃) ₂	81.04	2.00	162
CaSO ₄	68.07	4.30	293
CaCl ₂	55.50	8.68	481
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	10.00	476
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	9.49	555

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : KTS
 Lease : West
 Well No. : Fresh Water
 Lab No. : F:\ANALYSIS\Jul2699.001

Sample Loc. :
 Date Analyzed: 26-July-1999
 Date Sampled : 13-July-1999

ANALYSIS

1. pH 7.500
 2. Specific Gravity 60/60 F. 1.003
 3. CaCO₃ Saturation Index @ 80 F. +0.374
 @ 140 F. +1.144

Dissolved Gases

4. Hydrogen Sulfide Not Present
 5. Carbon Dioxide Not Determined
 6. Dissolved Oxygen Not Determined

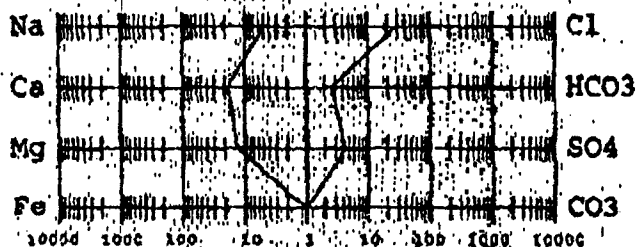
Cations

		MG/L	EQ. WT.	*MEQ/L
7. Calcium	(Ca++)	351	20.1	17.46
8. Magnesium	(Mg++)	152	12.2	12.46
9. Sodium	(Na+) (Calculated)	109	23.0	4.74
10. Barium	(Ba++)	0	68.7	0.00

Anions

11. Hydroxyl	(OH-)	0	17.0	0.00
12. Carbonate	(CO ₃ --)	0	30.0	0.00
13. Bicarbonate	(HCO ₃ -)	146	61.1	2.39
14. Sulfate	(SO ₄ --)	200	48.8	4.10
15. Chloride	(Cl-)	1,000	35.5	28.17
16. Total Dissolved Solids		1,958		
17. Total Iron (Fe)		2	18.2	0.08
18. Total Hardness as CaCO ₃		1,501		
19. Resistivity @ 75 F. (Calculated)		3.426 /cm.		

LOGARITHMIC WATER PATTERN



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT. X	*mg/L	mg/L
Ca(HCO ₃) ₂	81.04	2.39	194
CaSO ₄	68.07	4.10	279
CaCl ₂	55.50	10.97	609
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	12.46	593
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	4.74	277

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

MAILING ADDRESS
Box 100
CROSSROADS, N.M.
88114

Box 100
Her 63 Box 988

KENNETH TANK SERVICE
Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

Kenneth Tank Service / Stearns, Inc.
QUARTERLY REPORT IN COMPLIANCE OF:

1st quarter 1999

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well

300 #

Average brine water weight

10.2 #

Water analysis reports attached.

analysis
Two wells - attached

RECEIVED

APR 2 1999

Environmental Services
Oil Conservation Division

Report submitted by:

Signature

[Signature]

Date

4/20/99

Quantity Brine Produced 1st quarter 1999
- 0 - (none needed)

∴ No fresh water injected.

[Signature]

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : K T S
Lease : N/A
Well No.: South
Lab No. : 032599.001

Sample Loc. : Fresh Water well
Date Analyzed: 25-March-1999
Date Sampled : 22-March-1999

ANALYSIS

RECEIVED

APR 2 1999

- | | |
|---|--------|
| 1. pH | 7.410 |
| 2. Specific Gravity 60/60 F. | 1.003 |
| 3. CaCO ₃ Saturation Index @ 80 F. | +0.404 |
| @ 140 F. | +1.104 |

Environmental Bureau
Oil Conservation Division

Dissolved Gasses

MG/L

EQ. WT.

*MEQ/L

- | | |
|---------------------|----------------|
| 4. Hydrogen Sulfide | Not Present |
| 5. Carbon Dioxide | Not Determined |
| 6. Dissolved Oxygen | Not Determined |

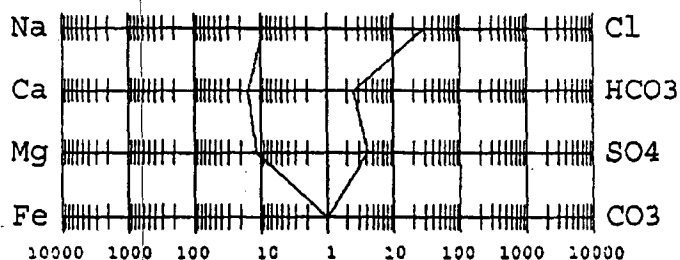
Cations

- | | | | | |
|----------------------------------|----------|---|--------|-------|
| 7. Calcium (Ca ⁺⁺) | 292 | / | 20.1 = | 14.53 |
| 8. Magnesium (Mg ⁺⁺) | 139 | / | 12.2 = | 11.39 |
| 9. Sodium (Na ⁺) | 199 | / | 23.0 = | 8.65 |
| 10. Barium (Ba ⁺⁺) | Below 10 | | | |

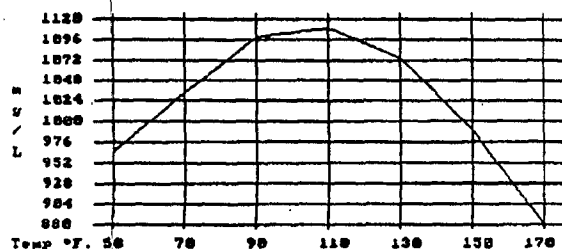
Anions

- | | | | | |
|--|------------|---|--------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / | 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / | 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 146 | / | 61.1 = | 2.39 |
| 14. Sulfate (SO ₄ ⁼) | 195 | / | 48.8 = | 4.00 |
| 15. Chloride (Cl ⁻) | 1,000 | / | 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,971 | | | |
| 17. Total Iron (Fe) | 3 | / | 18.2 = | 0.14 |
| 18. Total Hardness As CaCO ₃ | 1,301 | | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.418 /cm. | | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca(HCO ₃) ₂	81.04	2.39	194
CaSO ₄	68.07	4.00	272
CaCl ₂	55.50	8.14	452
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCL ₂	47.62	11.39	543
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	8.63	505

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : K T S
Lease : N/A
Well No.: West
Lab No. : 032599.001

Sample Loc. : Fresh Water well
Date Analyzed: 25-March-1999
Date Sampled : 22-March-1999

ANALYSIS

1. pH 7.330
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index @ 80 F. +0.118
@ 140 F. +0.888

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

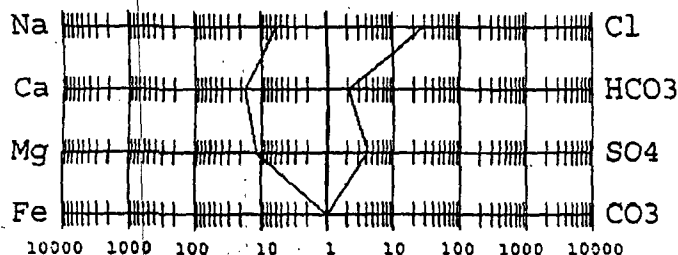
Cations

- | | | | |
|----------------------------------|--------------|----------|-------|
| 7. Calcium (Ca ⁺⁺) | 344 | / 20.1 = | 17.11 |
| 8. Magnesium (Mg ⁺⁺) | 139 | / 12.2 = | 11.39 |
| 9. Sodium (Na ⁺) | 130 | / 23.0 = | 5.65 |
| 10. Barium (Ba ⁺⁺) | (Calculated) | | |
| | Below 10 | | |

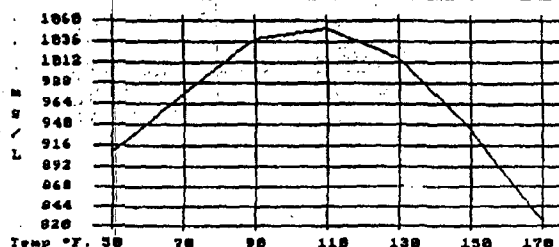
Anions

- | | | | |
|--|-------|----------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 122 | / 61.1 = | 2.00 |
| 14. Sulfate (SO ₄ ⁼) | 195 | / 48.8 = | 4.00 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,930 | | |
| 17. Total Iron (Fe) | 2 | / 18.2 = | 0.08 |
| 18. Total Hardness As CaCO ₃ | 1,431 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.453 | /cm. | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION			
COMPOUND	EQ. WT. X	*meq/L = mg/L.	
Ca (HCO ₃) ₂	81.04	2.00	162
CaSO ₄	68.07	4.00	272
CaCl ₂	55.50	11.12	617
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCL ₂	47.62	11.39	543
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	5.65	331

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE
Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

Stearns, Inc.
HCR 65 Box 988
Crossroads, NM 88114

Kenneth Tank Service / Stearns, Inc.

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

*Oct, Nov, Dec 1998
(4th quarter)*

Average working pressure of brine well 300[#].

Average brine water weight 10. - 10.2[#].

Water analysis reports attached.

✓ *Two wells: Attached Reports*

Report submitted by:

Signature *J. Stearns*

Date *1/5/98*

*Quantity Brine Prod 4th quarter 1998: 1000 bbls.
(approx. same amount of fresh
water injected: 1000 bbls)*

RECEIVED

JAN 22 1999

Environmental Bureau
Oil Conservation Division

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : K.T.B. / STEARNS
 Lease : West Well
 Well No. : Fresh Water
 Lab No. : 122498.001

Sample Loc. :
 Date Analyzed: 24-December-1998
 Date Sampled : 09-December-1998

ANALYSIS

1. pH 7.430
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index @ 80 F. +0.289
 @ 140 F. +1.059

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|------|---------|----------------|
| 4. Hydrogen Sulfide | | | Not Present |
| 5. Carbon Dioxide | | | Not Determined |
| 6. Dissolved Oxygen | | | Not Determined |

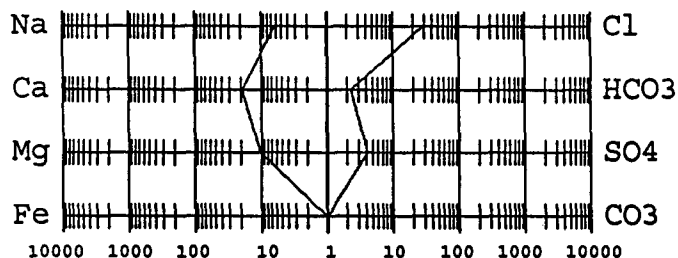
Cations

- | | | | |
|---|----------|----------|-------|
| 7. Calcium (Ca ⁺⁺) | 375 | / 20.1 = | 18.66 |
| 8. Magnesium (Mg ⁺⁺) | 120 | / 12.2 = | 9.84 |
| 9. Sodium (Na ⁺) (Calculated) | 134 | / 23.0 = | 5.83 |
| 10. Barium (Ba ⁺⁺) | Below 10 | | |

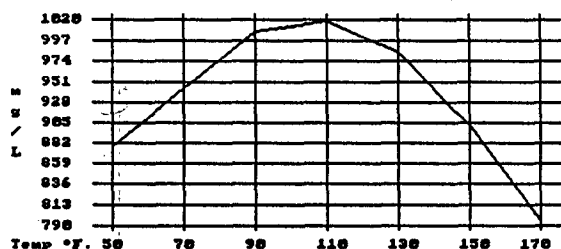
Anions

- | | | | |
|--|------------|----------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 132 | / 61.1 = | 2.16 |
| 14. Sulfate (SO ₄ ⁼) | 195 | / 48.8 = | 4.00 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,956 | | |
| 17. Total Iron (Fe) | 2 | / 18.2 = | 0.08 |
| 18. Total Hardness As CaCO ₃ | 1,431 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.455 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	2.16	175
CaSO ₄	68.07	4.00	272
CaCl ₂	55.50	12.50	694
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	9.84	468
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	5.83	341

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : K.T.S. / *Stearns*
 Lease South Well
 Well No.: Fresh Water
 Lab No. : 122498.001

Sample Loc. :
 Date Analyzed: 24-December-1998
 Date Sampled : 09-December-1998

ANALYSIS

1. pH 7.000
2. Specific Gravity 60/60 F. 1.005
3. CaCO₃ Saturation Index @ 80 F. -0.352
 @ 140 F. +0.348

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

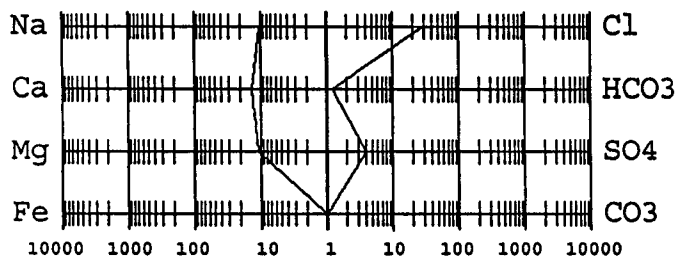
Cations

- | | | | |
|------------------------------|----------|----------|-------|
| 7. Calcium (Ca++) | 261 | / 20.1 = | 12.99 |
| 8. Magnesium (Mg++) | 126 | / 12.2 = | 10.33 |
| 9. Sodium (Na+) (Calculated) | 227 | / 23.0 = | 9.87 |
| 10. Barium (Ba++) | Below 10 | | |

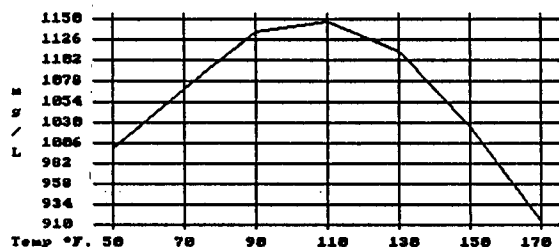
Anions

- | | | | |
|--|------------|----------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 73 | / 61.1 = | 1.19 |
| 14. Sulfate (SO ₄ ⁼) | 185 | / 48.8 = | 3.79 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,872 | | |
| 17. Total Iron (Fe) | 7 | / 18.2 = | 0.36 |
| 18. Total Hardness As CaCO ₃ | 1,171 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.488 /cm. | | |

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	1.19	97
CaSO ₄	68.07	3.79	258
CaCl ₂	55.50	8.00	444
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	10.33	492
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	9.84	575

*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.

MAILING ADDRESS

CROSSROADS, N.M.
88114

HCR 65 Box 988

KENNETH TANK SERVICE / *Stearns, Inc.*

PHONE: 505-675-2356
505-675-2357

CROSSROADS, NEW MEXICO 88114

Kenneth Tank Service / Stearns, Inc.

28

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300-310 PSI

Average brine water weight 10 lbs./gal.

Water analysis reports attached. *(Two fresh water wells - attached analysis)*

Quantity Brine Prod: 5500 bbls. *(Approx. SAME Amount of fresh water injected.)*

Report submitted by:

Signature

[Signature]

Date

10/20/98

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : K T S
Lease : N/A
Well No.: West Well
Lab No. : 092298.001

Sample Loc. : Fresh Water
Date Analyzed: 22-September-1998
Date Sampled :

ANALYSIS

1. pH 7.370
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index @ 80 F. +0.340
@ 140 F. +1.040

Dissolved Gasses

- | | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present | | |
| 5. Carbon Dioxide | Not Determined | | |
| 6. Dissolved Oxygen | Not Determined | | |

Cations

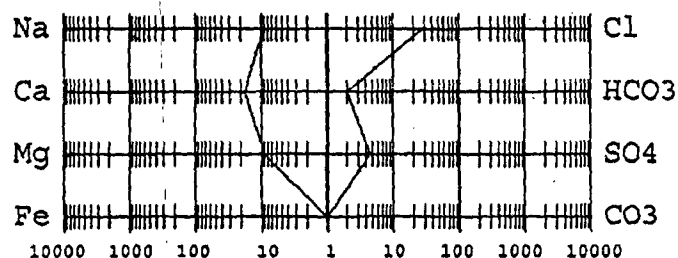
- | | | | |
|---|----------|----------|-------|
| 7. Calcium (Ca ⁺⁺) | 344 | / 20.1 = | 17.11 |
| 8. Magnesium (Mg ⁺⁺) | 107 | / 12.2 = | 8.77 |
| 9. Sodium (Na ⁺) (Calculated) | 196 | / 23.0 = | 8.52 |
| 10. Barium (Ba ⁺⁺) | Below 10 | | |

Anions

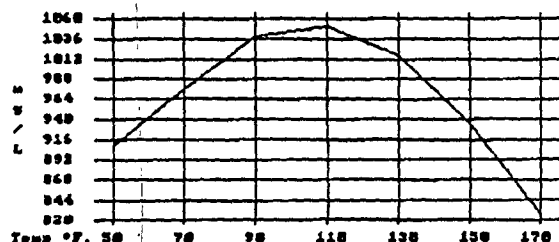
- | | | | |
|--|------------|----------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 117 | / 61.1 = | 1.91 |
| 14. Sulfate (SO ₄ ⁼) | 216 | / 48.0 = | 4.50 |
| 15. Chloride (Cl ⁻) | 1,000 | / 35.5 = | 28.17 |
| 16. Total Dissolved Solids | 1,974 | | |
| 17. Total Iron (Fe) | 2 | / 18.2 = | 0.08 |
| 18. Total Hardness As CaCO ₃ | 1,301 | | |
| 19. Resistivity @ 75 F. (Calculated) | 3.442 /cm. | | |

LOGARITHMIC WATER PATTERN

*meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	1.91	155
CaSO ₄	68.07	4.30	293
CaCl ₂	55.50	10.90	605
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	8.77	418
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	8.50	497

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

SAMPLE

Sample Loc. : Fresh Water
Date Analyzed: 22-September-1998
Date Sampled :

ANALYSIS

- | | | | |
|----|--|----------|--------|
| 1. | pH | | 7.320 |
| 2. | Specific Gravity 60/60 F. | | 1.003 |
| 3. | CaCO ₃ Saturation Index @ 80 F. | | +0.254 |
| | | @ 140 F. | +0.954 |

MG/L	EQ. WT.	*MEQ/L
100	100	100
200	200	200
300	300	300
400	400	400
500	500	500
600	600	600
700	700	700
800	800	800
900	900	900
1000	1000	1000
1100	1100	1100
1200	1200	1200
1300	1300	1300
1400	1400	1400
1500	1500	1500
1600	1600	1600
1700	1700	1700
1800	1800	1800
1900	1900	1900
2000	2000	2000
2100	2100	2100
2200	2200	2200
2300	2300	2300
2400	2400	2400
2500	2500	2500
2600	2600	2600
2700	2700	2700
2800	2800	2800
2900	2900	2900
3000	3000	3000
3100	3100	3100
3200	3200	3200
3300	3300	3300
3400	3400	3400
3500	3500	3500
3600	3600	3600
3700	3700	3700
3800	3800	3800
3900	3900	3900
4000	4000	4000
4100	4100	4100
4200	4200	4200
4300	4300	4300
4400	4400	4400
4500	4500	4500
4600	4600	4600
4700	4700	4700
4800	4800	4800
4900	4900	4900
5000	5000	5000
5100	5100	5100
5200	5200	5200
5300	5300	5300
5400	5400	5400
5500	5500	5500
5600	5600	5600
5700	5700	5700
5800	5800	5800
5900	5900	5900
6000	6000	6000
6100	6100	6100
6200	6200	6200
6300	6300	6300
6400	6400	6400
6500	6500	6500
6600	6600	6600
6700	6700	6700
6800	6800	6800
6900	6900	6900
7000	7000	7000
7100	7100	7100
7200	7200	7200
7300	7300	7300
7400	7400	7400
7500	7500	7500
7600	7600	7600
7700	7700	7700
7800	7800	7800
7900	7900	7900
8000	8000	8000
8100	8100	8100
8200	8200	8200
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8500	8500	8500
8600	8600	8600
8700	8700	8700
8800	8800	8800
8900	8900	8900
9000	9000	9000
9100	9100	9100
9200	9200	9200
9300	9300	9300
9400	9400	9400
9500	9500	9500
9600	9600	9600
9700	9700	9700
9800	9800	9800
9900	9900	9900
10000	10000	10000

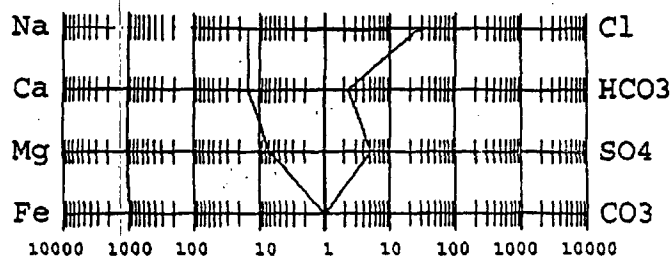
- ## Cations

- | | | | | | | | |
|-----|-----------|--------|----------|---|------|---|-------|
| 7. | Calcium | {Ca++} | 281 | / | 20.1 | = | 13.98 |
| 8. | Magnesium | {Mg++} | 82 | / | 12.2 | = | 6.72 |
| 9. | Sodium | {Na+} | 333 | / | 23.0 | = | 14.48 |
| 10. | Barium | {Ba++} | Below 10 | | | | |

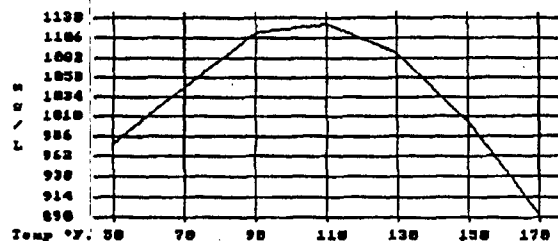
Anions

- | | | | | | | | |
|-----|-------------------------------------|----------------------------------|-------|------|------|---|-------|
| 11. | Hydroxyl | (OH ⁻) | 0 | / | 17.0 | = | 0.00 |
| 12. | Carbonate | (CO ₃ ⁼) | 0 | / | 30.0 | = | 0.00 |
| 13. | Bicarbonate | (HCO ₃ ⁻) | 132 | / | 61.1 | = | 2.16 |
| 14. | Sulfate | (SO ₄ ⁼) | 235 | / | 48.8 | = | 4.82 |
| 15. | Chloride | (Cl ⁻) | 1,000 | / | 35.5 | = | 28.17 |
| 16. | Total Dissolved Solids | | 2,063 | | | | |
| 17. | Total Iron (Fe) | | 2 | / | 18.2 | = | 0.11 |
| 18. | Total Hardness As CaCO ₃ | | 1,041 | | | | |
| 19. | Resistivity @ 75 F. (Calculated) | | 3.385 | /cm. | | | |

PROBABLE MINERAL COMPOSITION
COMPOUND EQ. WT. X *meq/L = mg/L.



Ca (HCO ₃) ₂	81.04	2.16	175
CaSO ₄	68.07	4.82	328
CaCl ₂	55.50	7.00	389
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	6.72	320
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	14.44	844



Temp °F. 50 70 90 110 130 150 170

*Milli Equivalents per Li

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan *BW-13*
KENNETH TANK SERVICE / *STEARNS, INC.*
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300-310 PSI.

Average brine water weight 10. pounds/gallon.

Water analysis reports attached. (*Two wells - Attached*)

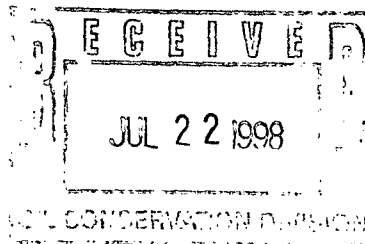
Quantity Brine Produced: 3200 bbls.

Report submitted by:

Signature

Date

J. A. Stearns
7/15/98





JUNE 10, 1998

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: SOUTH

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.42

CHLORIDES: 750

ANALYST:

FIELD REPRESENTATIVE:

PETER KIM PHILLIPS

DAVID SHERMAN



JUNE 10, 1998

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: WEST

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.90

CHLORIDES: 750

ANALYST:

FIELD REPRESENTATIVE:

PETER KIM PHILLIPS

DAVID SHERMAN

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

BW-13

Discharge Plan ~~DP-355~~
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

*1st Quarter
1998*

Average working pressure of brine well 300 PSI.

Average brine water weight 10 lb/gal.

Water analysis reports attached. *(two wells) - fresh water*

Quantity Brine Produced: 7600 bbls.

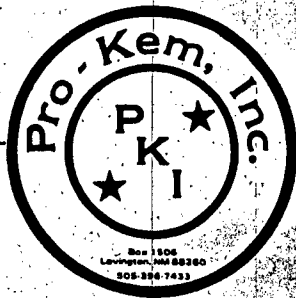
Report submitted by:

Signature

[Signature] (Stearns, Inc.)
Operator

Date

4/15/98.



MARCH 11, 1998

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: WEST

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.45

CHLORIDES: 700

ANALYST:

FIELD REPRESENTATIVE:

PETER KIM PHILLIPS

DAVID SHERMAN



MARCH 11, 1998

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: SOUTH

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.30

CHLORIDES: 700

ANALYST:

FIELD REPRESENTATIVE:

PETER KIM PHILLIPS

DAVID SHERMAN

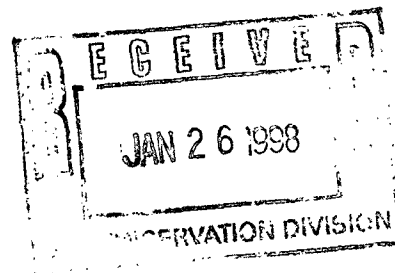
MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357



QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI

Average brine water weight 10 lb./gal.

Water analysis reports attached. *(two wells)*

Quantity Brine Prod: 7955 bbls. (Oct, Nov & Dec 1997)

Report submitted by:

Signature *A. Shaw*
Date 1/15/98



JANUARY 14, 1998

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL:

WEST

COUNTY: LEA

FIELD:

SOUTH CROSSROADS

SOURCE: WELL HEAD

PH:

7.89

CHLORIDES: 700

ANALYST:

FIELD REPRESENTATIVE:

PETER KIM PHILLIPS

DAVID SHERMAN



JANUARY 14, 1998

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL:

SOUTH

COUNTY: LEA

FIELD:

SOUTH CROSSROADS

SOURCE: WELL HEAD

PH:

7.74

CHLORIDES: 700

ANALYST:

FIELD REPRESENTATIVE:

PETER KIM PHILLIPS

DAVID SHERMAN

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

NOV - 4 1997

QUARTERLY REPORT IN COMPLIANCE OF:

July, Aug, Sept 1997

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI

Average brine water weight 10 lb. / gal.

Water analysis reports attached. ✓

Quantity Brine Prod: 15,700 bbls.

Report submitted by:

Signature

[Signature]

Date

10/20/97



OCTOBER 10, 1997

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: #1

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.30

CHLORIDES: 700

ANALYST:

PETER KIM PHILLIPS

FIELD REPRESENTATIVE

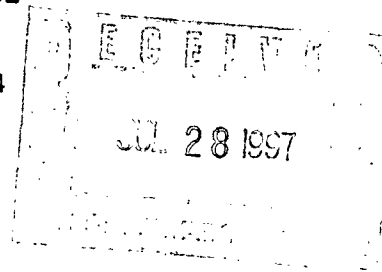
DAVID SHERMAN

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357



QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well

270-310 PSI

Average brine water weight

10#

Water analysis reports attached.

✓

Report submitted by:

Signature

[Handwritten Signature]

Date

7/15/97



JULY 8, 1997

KENNETH TANK SERVICE/STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: #1

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.30

CHLORIDES: 600

ANALYST:

FIELD REPRESENTATIVE:

Peter Kim Phillips

PETER KIM PHILLIPS

David Sherman

DAVID SHERMAN

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

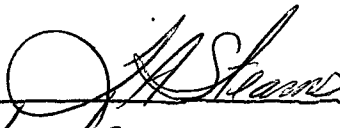
Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 lbs

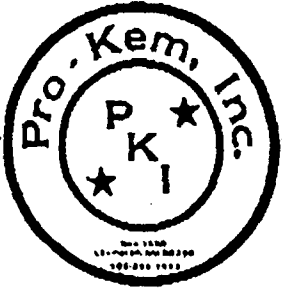
Average brine water weight 10 lb.

Water analysis reports attached.

Report submitted by:

Signature 

Date 1/15/97



December 23, 1996

KENNETH TANK SERVICE / STEARNS INC
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: #1

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.40

CHLORIDES: 700

ANALYST:

FIELD REPRESENTATIVE

PETER KIM PHILLIPS

D M SHERMAN

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

CONSERV. DIVISION
RECEIVED
PHONE: 505-675-2356
505-675-2357
96 OCT 22 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

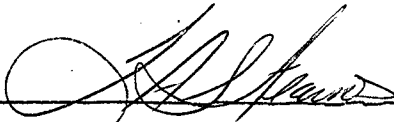
Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI.

Average brine water weight 10 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature 

Date Oct. 15, 1996



September 20, 1996

KENNETH TANK SERVICE
P O BOX 100
CROSSROADS NM 88114

ATTN: J. STEARNS

WELL: #1

COUNTY: LEA

FIELD: SOUTH CROSSROADS

SOURCE: WELL HEAD

PH: 7.30

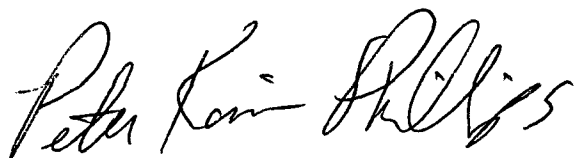
CHLORIDES: 350

ANALYST:

FIELD REPRESENTATIVE

PETER KIM PHILLIPS


D M SHERMAN



MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

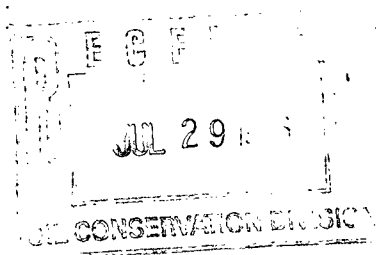
Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM



Average working pressure of brine well 290-310 PSI.

Average brine water weight 10 lbs/gal..

Water analysis reports attached.

Report submitted by:

Signature

Date

7/15/96



June 21, 1996

Kenneth Tank Service
P O Box 100
Crossroads, New Mexico 88114

Attn: J. Stearns

WELL: #1

COUNTY: Lea

FIELD: South Crossroads

SOURCE: Well Head

PH: 7.18

CHLORIDES: 400

ANALYST:

PETER KIM PHILLIPS

FIELD REPRESENTATIVE:

D M SHERMAN

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

CONSERVATION DIVISION
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'96 APR 25 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI.

Average brine water weight 10 lbs/gal.

Water analysis reports attached. ✓

Report submitted by:

Signature *Jan Anna Silas*

Date 4/15/96



April 12, 1996

Kenneth Tank Service
P O Box 100
Crossroads, New Mexico 88114

Attn: J. Stearns

WELL: #1

COUNTY: Lea

FIELD: South Crossroads

SOURCE: Well Head

PH: 7.35

CHLORIDES: 350

ANALYST:

PETER KIM PHILLIPS

FIELD REPRESENTATIVE:

D M SHERMAN

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

OIL CONSERVATION DIVISION
RECEIVED

96 FEB 14 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-300 PSI .

Average brine water weight 10 lb/gal. .

Water analysis reports attached.

Report submitted by:

Signature 

Date 1/25/96



January 26, 1996

Kenneth Tank Service
P O Box 100
Crossroads, New Mexico 88114

Attn: J. Stearns

WELL: #1

COUNTY: Lea

FIELD: South Crossroads

SOURCE: Well Head

PH: 7.25

CHLORIDES: 350

ANALYSIS:

FIELD REPRESENTATIVE:

PETER KIM PHILLIPS

DAVID SHERMAN

Peter Kim Phillips

David Sherman

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357
OIL CONSERVATION DIVISION
RECEIVED

'95 NOV 6 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-300 PSI.

Average brine water weight 10 lb./gal..

Water analysis reports attached.

Report submitted by:

Signature

[Handwritten Signature]

Date

10/20/95



October 19, 1995

*Fresh Water
Analysis*

Kenneth Tank Service
P O Box 100
Crossroads, New Mexico 88114

Attn: J. Stearns

WELL:	#1	COUNTY:	Lea
FIELD:	South Crossroads	SOURCE:	Well Head
PH:	7.35		
CHLORIDES:	300		

ANALYST:

PETER KIM PHILLIPS

Peter Kim Phillips

FIELD REPRESENTATIVE:

W. H. FORT

W. H. Fort

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

OIL CONSERVATION DIVISION
RECEIVED

505-675-2356
505-675-2357

95 JUL 27 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

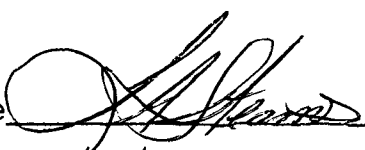
Discharge Plan DP-355 *RENEWAL BW-013*
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 psi.

Average brine water weight 10 lbs./gal..

Water analysis reports attached.

Report submitted by:

Signature 

Date 7/20/95



July 24, 1995

Kenneth Tank Service
P O Box 100
Crossroads, New Mexico 88114

ATTN: J. Sterns

WELL: #1

COUNTY: Lea

FIELD: South Crossroads

SOURCE: Well Head

PH: 7.1

CHLORIDES: 300

ANALYST:

Kim Phillips

FIELD REPRESENTATIVE:

W. H. Fort

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357
RECEIVED

'95 MAR 2 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300 lbs.

Average brine water weight 10.1 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature [Signature]

Date 4/19/95

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. :
Lease : KTS
Well No. : # 1
Salesman:

Sample Loc. :
Date Analyzed: 10-April-1995
Date Sampled :

ANALYSIS

1. pH 7.200
2. Specific Gravity 60/60 F. 1.008
3. CaCO₃ Saturation Index @ 80 F. -0.176
@ 140 F. +0.634

Dissolved Gasses

MG/L EQ. WT. *MEQ/L

4. Hydrogen Sulfide Not Present
5. Carbon Dioxide Not Determined
6. Dissolved Oxygen Not Determined

Cations

- | | | | | |
|----------------------------------|--------------------|---|--------|-------|
| 7. Calcium (Ca ⁺⁺) | 301 | / | 20.1 = | 14.98 |
| 8. Magnesium (Mg ⁺⁺) | 122 | / | 12.2 = | 10.00 |
| 9. Sodium (Na ⁺) | (Calculated) 1,509 | / | 23.0 = | 65.61 |
| 10. Barium (Ba ⁺⁺) | Not Determined | | | |

Anions

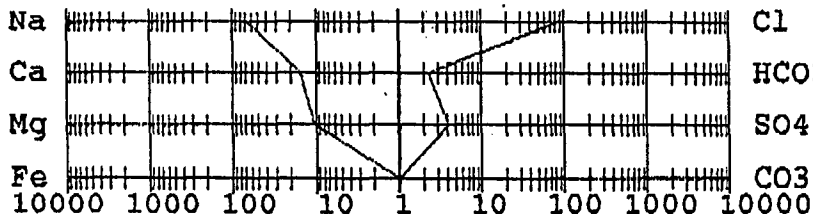
- | | | | | |
|--|------------|---|--------|-------|
| 11. Hydroxyl (OH ⁻) | 0 | / | 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / | 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁼) | 132 | / | 61.1 = | 2.16 |
| 14. Sulfate (SO ₄ ⁼) | 190 | / | 48.8 = | 3.89 |
| 15. Chloride (Cl ⁻) | 2,999 | / | 35.5 = | 84.48 |
| 16. Total Dissolved Solids | 5,253 | | | |
| 17. Total Iron (Fe) | 2 | / | 18.2 = | 0.11 |
| 18. Total Hardness As CaCO ₃ | 1,251 | | | |
| 19. Resistivity @ 75 F. (Calculated) | 1.026 /cm. | | | |

LOGARITHMIC WATER PATTERN

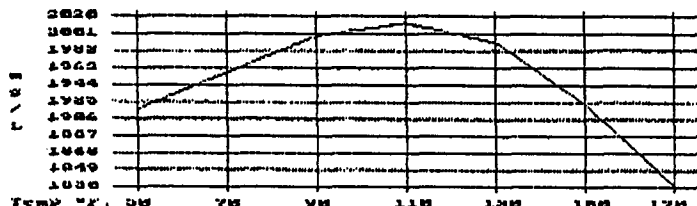
*meq/L.

PROBABLE MINERAL COMPOSITION

COMPOUND EQ. WT. X *meq/L = mg/L.



Calcium Sulfate Solubility Profile



Cl	Ca(HCO ₃) ₂	81.04	2.16	175
HCO ₃	CaSO ₄	68.07	3.89	265
SO ₄	CaCl ₂	55.50	8.92	495
CO ₃	Mg(HCO ₃) ₂	73.17	0.00	0
	MgSO ₄	60.19	0.00	0
	MgCl ₂	47.62	10.00	476
	NaHCO ₃	84.00	0.00	0
	NaSO ₄	71.03	0.00	0
	NaCl	58.46	65.56	3,832

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. :
Lease : KTS
Well No.: # 2
Salesman:

Sample Loc. :
Date Analyzed: 10-April-1995
Date Sampled :

ANALYSIS

1. pH 7.300
2. Specific Gravity 60/60 F. 1.008
3. CaCO₃ Saturation Index @ 80 F. -0.270
@ 140 F. +0.540

Dissolved Gasses

4. Hydrogen Sulfide Not Present
5. Carbon Dioxide Not Determined
6. Dissolved Oxygen Not Determined

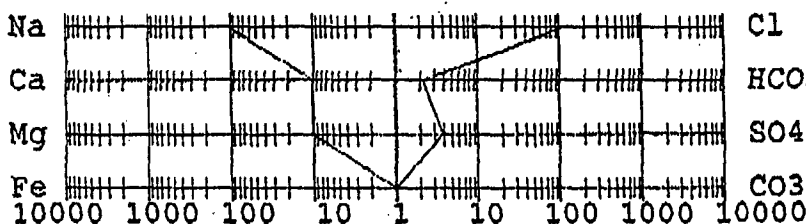
Cations

7. Calcium (Ca ⁺⁺)	200	/	20.1 =	9.95
8. Magnesium (Mg ⁺⁺)	122	/	12.2 =	10.00
9. Sodium (Na ⁺)	(Calculated) 2,265	/	23.0 =	98.48
10. Barium (Ba ⁺⁺)	Not Determined			

Anions

11. Hydroxyl (OH ⁻)	0	/	17.0 =	0.00
12. Carbonate (CO ₃ ²⁻)	0	/	30.0 =	0.00
13. Bicarbonate (HCO ₃ ⁻)	127	/	61.1 =	2.08
14. Sulfate (SO ₄ ²⁻)	175	/	48.8 =	3.59
15. Chloride (Cl ⁻)	3,999	/	35.5 =	112.65
16. Total Dissolved Solids	6,888			
17. Total Iron (Fe)	1	/	18.2 =	0.05
18. Total Hardness As CaCO ₃	1,001			
19. Resistivity @ 75 F. (Calculated)	0.829 /cm.			

LOGARITHMIC WATER PATTERN



Calcium Sulfate Solubility Profile



COMPOUND	EQ. WT.	X	*meq/L = mg/L.
Ca(HCO ₃) ₂	81.04	2.08	168
CaSO ₄	68.07	3.59	244
CaCl ₂	55.50	4.29	238
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	10.00	476
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	98.36	5,750

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

OIL CONSERVATION DIVISION
RECEIVED

'95 JAN 30 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 lbs.

Average brine water weight 10.1 lbs./gal.

Water analysis reports attached.

Report submitted by:

Signature

Date Jan. 20, 1995



January 18, 1995

Kenneth Tank Service
P. O Box 100
Crossroads, New Mexico 88114

Attn: J. Sterns

WELL: #1

COUNTY: Lea

FIELD: South Crossroads

SOURCE: Well Head

PH : 7.3

CHLORIDES : 350

ANALYST: David Sherman

FIELD REP: W. H. Fort

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

PHONE: 505-675-2356
505-675-2357

OIL CONSERVATION DIVISION
RECEIVED

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

'94 JUL 27 AM 8 50

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI

Average brine water weight 10.2 lbs/gallon

Water analysis reports attached.

Report submitted by:

Signature [Signature]

Date July 22, 1994

MAILING ADDRESS
BOX 100
CROSSROADS, N.M. 88114

KENNETH TANK SERVICE

PHONE: 505-675-2356
505-675-2357

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

RECEIVED
24 OCT 28 AM 8 52

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI

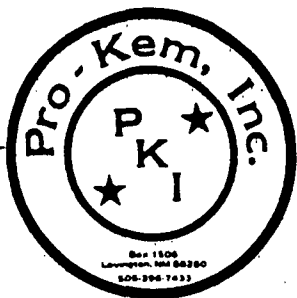
Average brine water weight 10 lbs

Water analysis reports attached.

Report submitted by:

Signature [Signature]

Date 10/20/94



October 20, 1994

Kenneth Tank Service
P.O.Box 100
Crossroads, New Mexico 88114

Water analysis

Attn: J. Sterns

WELL: #1

COUNTY: Lea

FIELD: South Crossroads

SOURCE: Well Head

PH : 7.3

CHLORIDES : 350

ANALYST: David Sherman

FIELD REP: W.H. Eort

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
OIL CONSERVATION DIVISION
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94 APR 21 AM 8 50

QUARTERLY REPORT IN COMPLIANCE OF:

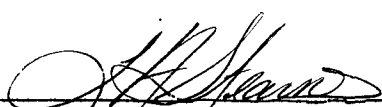
Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 psi.

Average brine water weight 10.2 lbs/gal..

Water analysis reports attached.

Report submitted by:

Signature 

Date Apr. 14, 1994



HALLIBURTON

To Kenneth Tank Service

Sample Number 79

P.O. Box 100

Crossroads, New Mexico 88114

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Submitted by John Sterns Date Received 04/06/94

Well No. Water Well #1 Depth Formation

County Lea Field South Crossroads Source well head

Resistivity..... 4.08 @ 76 °f

Specific Gr..... 1.005

pH..... 7.04

Calcium*..... 750

Ca

Magnesium*..... nil

Mg

Chlorides*..... 500

Cl

Sulfates*..... 228

SO₄

Bicarbonates*.... 134

HCO₃

Soluble Iron*.... nil

Fe

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: *J. H. Sterns*

HALLIBURTON COMPANY

By _____

CHEMIST

NOTICE

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88114

KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
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'94 JAN 24 AM 9 51

QUARTERLY REPORT IN COMPLIANCE OF:

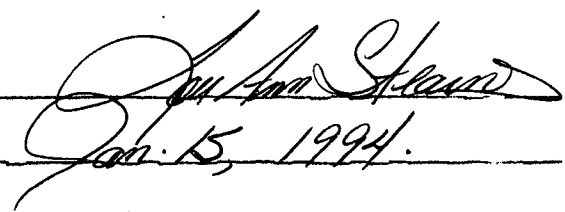
Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI

Average brine water weight 10 lb.

Water analysis reports attached.

Report submitted by:

Signature 

Date Jan. 15, 1994.



HALLIBURTON

To Kenneth Tank Service
P.O. Box 100
Crossroads, New Mexico 88114

Sample Number 361

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Submitted by Kenneth Kinsolving Date Received 11/17/93

Well No. Water Well #1 Depth Formation

County Lea Field 1 mile south Crossroads Source well head

Resistivity..... 3.861 @ 74 f

Specific Gr..... 1.000

pH..... 6.9

Calcium*..... 700

Ca

Magnesium*..... 100

Mg

Chlorides*..... 530

Cl

Sulfates*..... 186

SO₄

Bicarbonates*..... 140

HCO₃

Soluble Iron*..... nil

Fe

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: ALEUBANK

HALLIBURTON COMPANY

By _____

CHEMIST

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KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

OIL CONSERVATION DIVISION
RECEIVED
PHONE: 505-675-2356
505-675-2357

'93 NOV 1 AM 9 47

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300 PSI.

Average brine water weight 10 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature [Signature]

Date 10/20/93

HALLIBURTON SERVICES

HOBBS, NEW MEXICO

To Kenneth Tank Services

Sample

Box 988

Crossroads, New Mexico 88114

This report is the property of Halliburton Company. It is to be used for the purpose of securing the express written consent of Halliburton Company, however, be used in the court of law or in any other manner.

Submitted by Lou Ann Stearns Date Recd. _____

Well No. Well #1 Depth For

County Lea, NM Field South Crossroads

Resistivity..... 8.547 @ 70 F

Specific Gr..... 1.000

pH..... 7.2

Calcium*..... 750

Ca

Magnesium*..... nil

Mg

Chlorides*..... 100

Cl

Sulfates*..... 345

SO₄

Bicarbonates*..... 134

HCO₃

Soluble Iron*..... nil

Fe

Remarks:

*Milli:

Fresh Water Analysis

Respectfully submitted,

Analyst: ALBANK

HALLIBURTON

By _____

CE

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KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

OIL CONSERVATION DIVISION
RECEIVED
PHONE: 505-675-2356
505-675-2357

93 JU 26 AM 10 18

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310# B51

Average brine water weight 10.2 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature

Date

Joe Ann Stearns
July 15, 1993

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

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92 OCT 21 AM 9 00

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI.

Average brine water weight 10 lbs/gallon.

Water analysis reports attached.

From Halliburton

Report submitted by:

Signature

[Signature]

Date

10/15/92

MAILING ADDRESS
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88114
OIL CONSERVATION DIVISION
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'92 JUL 27 AM 9 07

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 PSI
Average brine water weight 10 lbs/gallon
Water analysis reports attached.

Report submitted by:

Signature

Date

[Signature]
7/30/92

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
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KENNETH TANK SERVICE
Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

OIL CONSERVATION DIVISION
PHONE: 505-675-2356
505-675-2357
RECEIVED
'92 MAY 7 AM 9 04

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300-310 PSI

Average brine water weight 10 lbs/gal.

Water analysis reports attached.

from Halliburton Services

Report submitted by:

Signature

[Signature]

Date

4/25/92

HALLIBURTON SERVICES
HOBBS, NEW MEXICO

To Kenneth Tank Service.

Sample Number 135

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Submitted by _____ Date Received _____

Well No. KTS Well #1 Depth _____ Formation _____

County _____ Field _____ Source Wellhead

	Sample #1		
Resistivity.....	12.0 @ 72°F		
Specific Gr.....	1.001		
pH.....	6.5		
Calcium*.....	750		
Ca			
Magnesium*.....	600		
Mg			
Chlorides*.....	265		
Cl			
Sulfates*.....	Less than 1800		
SO ₄			
Bicarbonates*....	230		
HCO ₃			
Soluble Iron*....	nil		
Fe			

Remarks: Suitable to Mix Cement

*Milligrams per liter

Respectfully submitted,

Analyst: Ron Willett

HALLIBURTON COMPANY

By _____

CHEMIST

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88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357
OIL CONSERVATION DIVISION
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'92 JAN 21 AM 9 25

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300 psi.

Average brine water weight 10 lbs./gal..

Water analysis reports attached.

Report submitted by:

Signature

Date


1/15/92

HALLIBURTON SERVICES
HOBBS, NEW MEXICO

To KENNETH TANK SERVICE
P.O. BOX 100
CROSSROADS, NEW MEXICO 88114

Sample Number 006

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Submitted by Lou Ann Sterns Date Received Jan. 7, 1992

Well No. Water Well #1 Depth Formation

County Lea Field South Crossrads, N.M. Source Well Head

WELL 1 MILE SOUTH OF CROSSRADS

Resistivity.....	<u>4.73 @ 72°F</u>	<u> </u>	<u> </u>
Specific Gr.....	<u>1.000</u>	<u> </u>	<u> </u>
pH.....	<u>7.1</u>	<u> </u>	<u> </u>
Calcium*.....	<u>850</u>	<u>mpl</u>	<u> </u>
Ca			
Magnesium*.....	<u>nil</u>	<u>mpl</u>	<u> </u>
Mg			
Chlorides*.....	<u>600</u>	<u>mpl</u>	<u> </u>
Cl			
Sulfates*.....	<u>235</u>	<u>mpl</u>	<u> </u>
SO ₄			
Bicarbonates*....	<u>140</u>	<u>mpl</u>	<u> </u>
HCO ₃			
Soluble Iron*....	<u>nil</u>	<u> </u>	<u> </u>
Fe			
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst JL EUBANK
JL Eubank

HALLIBURTON COMPANY

By
CHEMIST

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88114

KENNETH TANK SERVICE OIL CONSERVATION DIVISION
Crude and Water Transports RECEIVED
PHONE: 505-675-2356
505-675-2357

CROSSROADS, NEW MEXICO 88114 '91 OCT 23 AM 9 15

QUARTERLY REPORT IN COMPLIANCE OF:

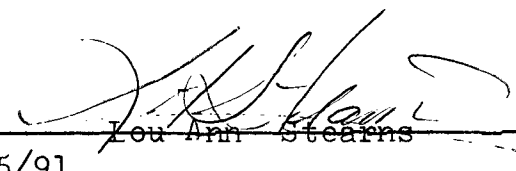
Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300-310 PSI.

Average brine water weight 10-10.2 lbs..

Water analysis reports attached.

Report submitted by:

Signature 
Date 10/15/91

HALLIBURTON D.VISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

HOBBS, NEW MEXICO 88240

LABORATORY REPORT

No. 410

To Kenneth's Tank Service

Date 10-15-91

Crossroads, New Mexico 88114

P.O. Box 100

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Submitted by Lou Ann Sterns

Date Rec. 10-12-91

Well No. Fresh Water Well #1 Depth

Formation

County Lea

Field

Source well head

Run Chlorides on water well located one mile south of Crossroads, NM.

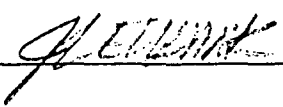
Chlorides-----835 Milligrams per liter.

pH -----7.1

Specific Gravity-----1.0025

John Eubank

Respectfully submitted,

Analyst: 

HALLIBURTON COMPANY

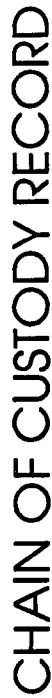
cc:

By

CHEMIST

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CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		ANALYSES / PARAMETERS					
Sampler: (Signature)		Chain of Custody Tape No.		Containers / Aliquots		Remarks			
Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	Aliquots	Remarks		
9107251000	7-25-91	10:00	6757	Water	1	1			
9107251030	7-25-91	10:30	6758	Water	1	1			
9107251100	7-25-91	11:00	6759	Water	1	1			
NFE 07/31/91 AAT									
Relinquished by: (Signature) Kathy Brown									
Relinquished by: (Signature) AAT 07/31/91									
Relinquished by: (Signature) Tony Tristano									

☐ 1633 Terra Avenue
Sheridan, Wyoming 82801
Telephone (307) 672-8945

☒ 2506 West Main Street
Farmington, NM 87401
Telephone (505) 326-4737

☐ 1714 Phillips Circle
Gillette, Wyoming 82716
Telephone (307) 682-8945

Inter-Mountain Laboratories, Inc.

☐ Route 3, Box 256
College Station, TX 77845
Telephone (409) 776-8945

☐ 3304 Longmire Drive
College Station, TX 77845
Telephone (409) 774-4999

00869



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab IML

Contract No. _____

OCD Sample No. 9107251000

Collection Date	Collection Time	Collected by—Person/Agency	OCD
7/25/91	10:00	Eddy Seay	

SITE INFORMATION

Sample location Kenneth Tank Service South Well

Collection Site Description _____

Township, Range, Section, Tract:

SEND
FINAL
REPORT
TO ↓ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: _____

- ☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ m membrane filter
☐ PF: Pre-filtered w/45 μ m membrane filter

- ☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H₂SO₄/L added
☐ A: 5ml conc. HNO₃ added
☐ A: 4ml fuming HNO₃ added

FIELD COMMENTS: _____

SAMPLING CONDITIONS	Water level
	Discharge
	Sample type
	Conductivity (Uncorrected) // mho
	Conductivity at 25° C // mho
☒ Bailed ☐ Pump ☐ Dipped ☐ Tap	
pH(00400)	
Water Temp. (00010)	

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7420
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab IML

Contract No. _____

OCD Sample No. 9107251030

Collection Date	Collection Time	Collected by—Person/Agency	OCD
7/25/91	10:30	Eddy Seay	

SITE INFORMATION

Sample location Kenneth Tank Service West Well

Collection Site Description _____

Township, Range, Section, Tract:

SEND
FINAL
REPORT
TO ↓

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: _____

- ☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ m membrane filter
☐ PF: Pre-filtered w/45 μ m membrane filter

- ☒ NA: No acid added
☐ A: 5ml conc. HNO₃ added
☐ A: HCL
☐ A: 4ml fuming HNO₃ added
☐ A: 2ml H₂SO₄/L added

FIELD COMMENTS:

SAMPLING CONDITIONS		Water level
☒ Bailed	☐ Pump	
☐ Dipped	☐ Tap	
pH(00400)		Discharge
Water Temp. (00010)		Sample type
		Conductivity (Uncorrected)
		Conductivity at 25° C <u>4 mho</u>

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	804	☐ 026	Cd	713
☐ 002	VOA	802	☐ 014	VOC	8240	☐ 027	Pb	742
☐ 003	VOH	8010	☐ 015	VOC	824	☐ 028	Hg(L)	747
☐ 004	VOH	801	☐ 016	SVOC	8250	☐ 031	Se	774
☐ 005	SUITE	8010-8020	☐ 017	SVOC	825	☐ 032	ICAP	801
☐ 006	SUITE	801-802	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	Q&Q	9070	☐ 035	NITRATE	
☐ 009	PAH	810	☐ 022	AS	7080	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	808	☐ 024	Cr	7190	☐ 038	TKN	



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab IML

Contract No. _____

OCD Sample No. 9107251100

Collection Date	Collection Time	Collected by — Person/Agency									
7/25/91	11:00	Eddy, Sean	OCD								
SITE INFORMATION											
Sample location <u>Kenneth Tank Service Windmill</u>											
Collection Site Description											
			Township, Range, Section, Tract:								
			<table border="1"> <tr> <td></td> <td></td> <td>+</td> <td></td> <td>+</td> <td></td> <td>+</td> <td></td> </tr> </table>			+		+		+	
		+		+		+					

SEND
FINAL
REPORT
TO
 ENVIRONMENTAL BUREAU
 NM OIL CONSERVATION DIVISION
 PO Box 2088
 Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: _____

- ☒ NF: Whole sample (Non-filtered)
☐ F: Filtered in field with 0.45 μ m membrane filter
☐ PF: Pre-filtered w/45 μ m membrane filter

- ☒ NA: No acid added
☐ A: HCL
☐ A: 2ml H₂SO₄/L added
☐ A: 5ml conc. HNO₃ added
☐ A: 4ml fuming HNO₃ added

FIELD COMMENTS:

SAMPLING CONDITIONS	Water level
	Discharge
	Sample type
	Conductivity (Uncorrected)
pH(00400)	_____ mho
Water Temp. (00010)	_____ mho

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	METHOD
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	7130
☐ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	7740
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	6010
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7060	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr	7190			

KTS Well No. 1

CLIENT: NMOCD
ID: 9107251000
SITE: Kenneth Tank Service
LAB NO: F6757

DATE REPORTED: 08/09/91
DATE RECEIVED: 07/31/91
DATE COLLECTED: 07/25/91

Lab pH (s.u.).....	7.81
Lab conductivity, umhos/cm.....	2780
Lab resistivity, ohm-m.....	3.6
Total dissolved solids (180), mg/l..	2240
Total dissolved solids (calc), mg/l.	1470
Total alkalinity as CaCO ₃ , mg/l.....	116
Total hardness as CaCO ₃ , mg/l.....	927
Sodium absorption ratio.....	2.62
Fluoride, mg/l.....	0.71

	mg/l	meq/l
Bicarbonate as HCO ₃	142	2.32
Carbonate as CO ₃	0	0
Chloride.....	683	19.3
Sulfate.....	199	4.15
Calcium.....	257	12.8
Magnesium.....	69.4	5.7
Potassium.....	6.51	0.17
Sodium.....	184	7.99
Major cations.....		26.7
Major anions.....		25.7
Cation/anion difference.....		1.84 %

RECEIVED

AUG 19 1991

OIL CONSERVATION DIV.
SANTA FEWanda Orso
Water Lab Manager

KTS Well No. 2

CLIENT: NMOCD
ID: 9107251030
SITE: Kenneth Tank Service
LAB NO: F6758

DATE REPORTED: 08/09/91
DATE RECEIVED: 07/31/91
DATE COLLECTED: 07/25/91

Lab pH (s.u.).....	7.87
Lab conductivity, umhos/cm.....	1950
Lab resistivity, ohm-m.....	5.14
Total dissolved solids (180), mg/l..	1770
Total dissolved solids (calc), mg/l.	1080
Total alkalinity as CaCO ₃ , mg/l.....	112
Total hardness as CaCO ₃ , mg/l.....	844
Sodium absorption ratio.....	0.973
Fluoride, mg/l.....	0.68

	mg/l	meq/l
Bicarbonate as HCO ₃	137	2.25
Carbonate as CO ₃	0	0
Chloride.....	478	13.5
Sulfate.....	166	3.46
Calcium.....	226	11.3
Magnesium.....	68.3	5.62
Potassium.....	5.3	0.14
Sodium.....	65	2.83
Major cations.....		19.8
Major anions.....		19.2
Cation/anion difference.....		1.66 %



Wanda Orso
Water Lab Manager

RECEIVED

AUG 19 1991

OIL CONSERVATION DIV.
SANTA FE

KTS - Windmill

CLIENT: NMOC
ID: 9107251100
SITE: Kenneth Tank Service
LAB NO: F6759

DATE REPORTED: 08/09/91
DATE RECEIVED: 07/31/91
DATE COLLECTED: 07/25/91

Lab pH (s.u.).....	8.22
Lab conductivity, umhos/cm.....	955
Lab resistivity, ohm-m.....	10.5
Total dissolved solids (180), mg/l..	688
Total dissolved solids (calc), mg/l.	576
Total alkalinity as CaCO ₃ , mg/l.....	147
Total hardness as CaCO ₃ , mg/l.....	355
Sodium absorption ratio.....	1.32
Fluoride, mg/l.....	0.98

	mg/l	meq/l
Bicarbonate as HCO ₃	179	2.94
Carbonate as CO ₃	0	0
Chloride.....	85.9	2.42
Sulfate.....	217	4.53
Calcium.....	96.4	4.81
Magnesium.....	27.8	2.29
Potassium.....	3.71	0.09
Sodium.....	57	2.48
Major cations.....		9.67
Major anions.....		9.88
Cation/anion difference.....		1.09 %

RECEIVED

AUG 19 1991

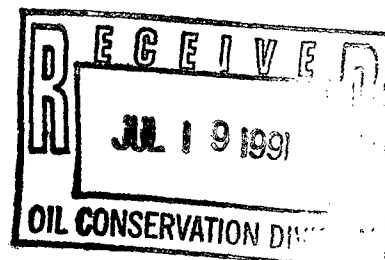
OIL CONSERVATION DIV.
SANTA FE
Wanda Orso
Water Lab Manager



BAKER PERFORMANCE CHEMICALS

A Baker Hughes company

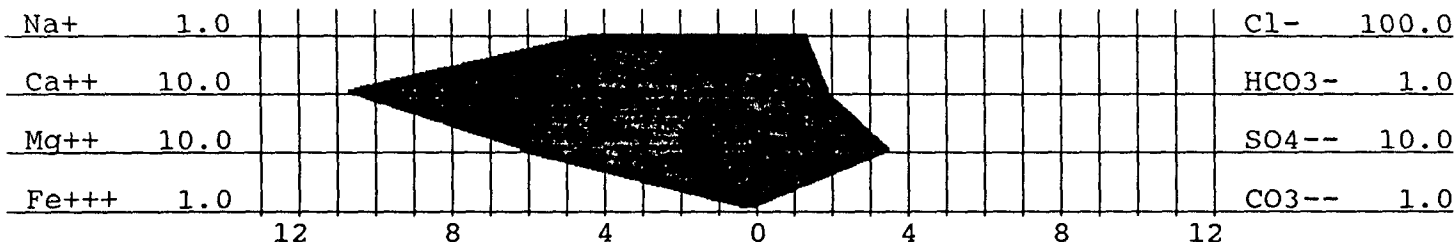
WATER ANALYSIS
for
KENNETH TK. SERVICE



Date of Analysis:	JUNE 27, 1991	Analysis #:	5390
Company:	KENNETH TK. SERVICE	Company Address:	CROSSROADS
State:	NEW MEXICO	Field:	N/D
Lease:	FRESH WATER WELL	Well #:	#1
Oil (bbl/day):	N/D	Water (bbl/day):	N/D
Type of Water:	FRESH	Temp., C:	20
Sample Source:	WELLHEAD	Date of Sampling:	JUNE 24, 1991
Representative:	W.H. FORT JR.	Analysis By:	CLYDE WILHOIT

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness :	174.00	
Calcium, (Ca++) :	110.00	2205.29
Magnesium, (Mg++) :	64.00	777.69
Iron, (Fe+++)	0.48	9.00
Barium, (Ba++) :	N/D	N/D
Sodium, Na+(calc.):	4.57	105.01
Manganese, (Mn++) :	0.00	0.00

ANIONS

Chloride, Cl- :	140.84	4999.65
Sulfate, SO4-- :	36.21	1740.00
Carbonate, CO3-- :	0.00	0.00
Bicarbonate, HCO3-- :	2.00	122.03
Hydroxyl, OH- :	0.00	0.00
Sulfide, S-- :	0.00	0.00
TOTAL SOLIDS (quant.):		9958.38

DISSOLVED GASES

Hydrogen sulfide:	0.00	mg/l
Carbon dioxide :	15.84	mg/l
Oxygen :	N/D	mg/l

PHYSICAL PROPERTIES

pH :	6.60
Spec Grav. :	1.000
TDS (calc.) :	9960.66

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
20.0	-0.43	2240	0
30.0	-0.24	2358	0
40.0	-0.02	2437	0
Max entity, (calc.)	2471		0

RESIDUAL HYDROCARBONS: N/D

N/D = not determined

REMARKS: 020 C SLIGHTLY CORROSIVE

020 C CALCIUM SULFATE SCALING IS LIKELY

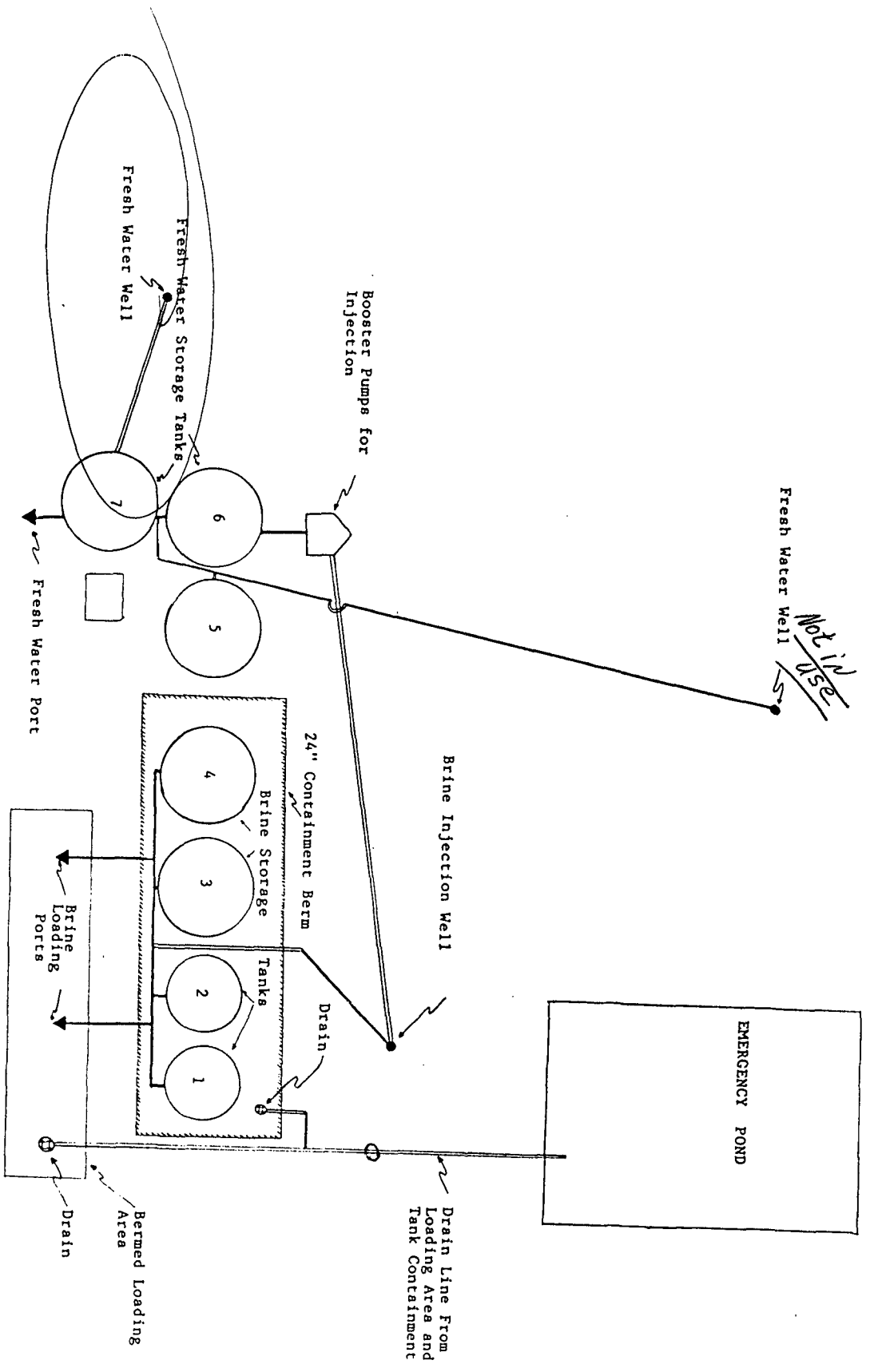


Figure 3-1 Brine facility site plan

MAIL ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transport
CROSSROADS, NEW MEXICO 88114

OIL CONSERVATION DIVISION
RECEIVED

PHONE: 505-675-2356
505-675-2357

30 OCT 26 AM 8 48

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 300 P.S.I.

Average brine water weight 10 lb/gal.

Water analysis reports attached.

Report submitted by:

Signature



Date

October 16, 1990



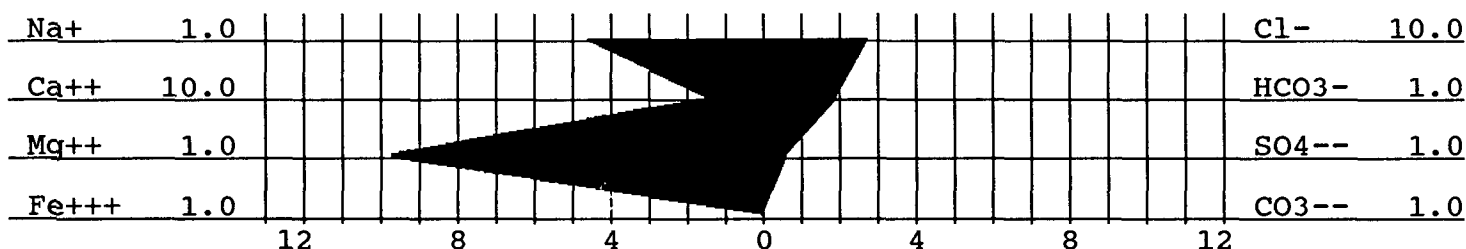
A Baker Hughes company

WATER ANALYSIS for KENNETH TANK SERV.

Date of Analysis:	OCTOBER 16, 1990	Analysis #:	5018
Company:	KENNETH TANK SERV.	Company Address:	CROSSROADS
State:	NEW MEXICO	Field:	N/D
Lease:	FRESH WATER WELL	Well #:	#1
Oil (bbl/day):	N/D	Water (bbl/day):	N/D
Type of Water:	FRESH WATER	Temp., C:	20
Sample Source:	WELLHEAD	Date of Sampling:	OCTOBER 16, 1990
Representative:	W.H. FORT JR.	Analysis By:	CLYDE WILHOIT

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness :	26.00	
Calcium, (Ca++) :	16.00	320.77
Magnesium, (Mg++) :	10.00	121.51
Iron, (Fe+++)	0.05	1.00
Barium, (Ba++) :	N/D	N/D
Sodium, Na+(calc) :	4.73	108.80
Manganese, (Mn++) :	0.00	0.00

ANIONS

Chloride, Cl-	:	28.16	999.64
Sulfate, SO4--	:	0.62	30.00
Carbonate, CO3--	:	0.00	0.00
Bicarbonate, HCO3-	:	2.00	122.03
Hydroxyl, OH-	:	0.00	0.00
Sulfide, S--	:	0.00	0.00
TOTAL SOLIDS (quant.):			3003.75

DISSOLVED GASES

Hydrogen sulfide:	0.00	mg/l
Carbon dioxide :	39.60	mg/l
Oxygen :	N/D	mg/l

PHYSICAL PROPERTIES

pH :	6.85
Spec Grav. :	1.000
TDS (calc.) :	1705.76

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
20.0	-0.27	1410	0
30.0	-0.10	1446	1
40.0	0.09	1448	1
Max entity, (calc.)	42		0
RESIDUAL HYDROCARBONS:		N/D	

N/D = not determined

Remarks: @ 20'C...Slightly corrosive.

@ 20'C...Calcium sulfate scaling is unlikely.

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

RECEIVED

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

'90 JUL 24 AM 9 03

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

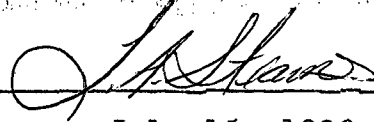
Average working pressure of brine well 290-310 P.S.I.

Average brine water weight 10 lb/gal.

Water analysis reports attached.

Report submitted by:

Signature



Date

July 15, 1990



A Baker Hughes company

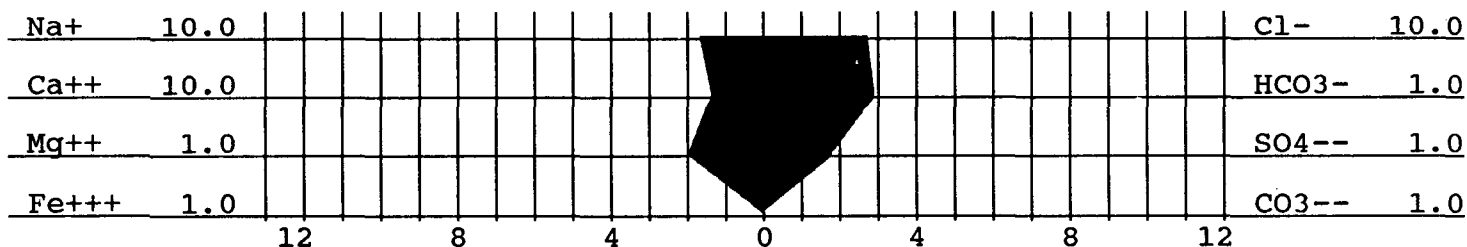
WATER ANALYSIS
for
KENNETH TK. SERV.

Date of Analysis: JULY 9, 1990
Company: KENNETH TK. SERV.
State: NEW MEXICO
Lease: FRESH WATER WELL
Oil (bbl/day): N/D
Type of Water: FRESH
Sample Source: WELL
Representative: W.H. FORT JR.

Analysis #: 4029
Company Address: CROSSROADS
Field: N/D
Well #: FRESH WATER
Water (bbl/day): N/D
Temp., C: 20
Date of Sampling: JULY 6, 1990
Analysis By: CLYDE WILHOIT

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

DISSOLVED GASES

CATIONS	me/l	mg/l
Total Hardness :	16.00	
Calcium, (Ca++) :	14.00	280.67
Magnesium, (Mg++) :	2.00	24.30
Iron, (Fe+++)	0.05	1.00
Barium, (Ba++) :	N/D	N/D
Sodium, Na+(calc):	16.98	390.52
Manganese, (Mn++) :	0.00	0.00

Hydrogen sulfide:	0.00	mg/l
Carbon dioxide :	39.60	mg/l
Oxygen :	N/D	mg/l

PHYSICAL PROPERTIES

pH :	6.65
Spec Grav. :	1.000
TDS (calc.) :	1972.18

ANIONS		
Chloride, Cl- :	28.16	999.64
Sulfate, SO4-- :	1.87	90.00
Carbonate, CO3-- :	0.00	0.00
Bicarbonate, HCO3-- :	3.00	183.04
Hydroxyl, OH- :	0.00	0.00
Sulfide, S-- :	0.00	0.00
TOTAL SOLIDS (quant.):		2769.17

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
20.0	-0.35	1469	0
30.0	-0.17	1504	0
40.0	0.01	1506	0
Max entity, (calc.)	127		0
RESIDUAL HYDROCARBONS:		N/D	

N/D = not determined

Remarks: @ 20'C...Slightly corrosive.

@ 20'C...Calcium sulfate scaling is unlikely.

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

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'90 APR 11 AM 8:44

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290 PSI.

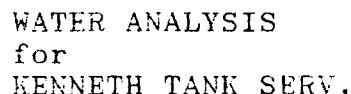
Average brine water weight 10 lb/gal.

Water analysis reports attached.

Report submitted by:

Signature 

Date April 5, 1990



Date of Analysis:	FEBRUARY 6, 1990	Analysis #:	3589
Company:	KENNETH TANK SERV.	Attention:	N/D
City:	CROSSROADS	State:	NEW MEXICO
Lease/Well #:	FRESH WATER WELL	Field:	N/D
Type of Water:	FRESH	Water (bbl/day):	N/D
Temp., C:	20	Sample Source:	WELLHEAD
Use:	N/D	Date of Sampling:	FEBRUARY 5, 1990
Representative:	W.H. FORT Jr.	Analysis By:	CLYDE WILHOIT

(number beside ion symbol indicates me/l scale unit)

[illegible]

144	96	48	0	48	96	144
-----	----	----	---	----	----	-----

DISSOLVED SOLIDS				DISSOLVED GASES			
CATIONS	mg/l	me/l	AS CaCO3				mg/l
Ca++	120.0	6.0	300.0	Hydrogen Sulfide, H2S:			0.0
Mg++	24.4	2.0	100.0	Carbon Dioxide, CO2 :			79.2
Fe+++	1.0	0.1	2.7	Oxygen, O2 :			0.0
Ba++	0.0	0.0	0.0				
Na+	560.4	24.4	1,218.3	<u>PHYSICAL PROPERTIES</u>			
Mn++	0.0	0.0	0.0	pH :			7.4
ANIONS				Specific Gravity :			1.0
Cl-	1,000.0	28.2	1,408.5	TDS (calc.) p.p.m. :			1,948.8
SO4--	60.0	1.3	62.5				
CO3--	0.0	0.0	0.0	<u>SCALE STABILITIES</u>			
HCO3-	183.0	3.0	150.0	Temp.			
OH-	0.0	0.0	0.0	C. F.	CaCO3	CaSO4	BaSO4
S--	0.0	0.0	0.0	20 68	0.01	1618	0
TOTAL HARDNESS :		8.0	400.0	40 104	0.37	1653	0
				60 140	0.74	1578	0
TOTAL SOLIDS (quantitative):			1,948.8				
RESIDUAL HYDROCARBONS :			0.0	Max entity. (calc.):		85	0

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

OIL CONSERVATION DIVISION
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'89 NOV 16 AM 9 01

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

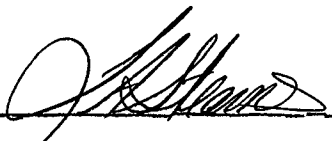
Average working pressure of brine well 290 P.S.I.

Average brine water weight 10. lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature



Date

October-November 1989



Analysis #: 4403
Company Address: CROSSROADS
Field:
Well #: # 1
Water (bbl/day): N/D
Temp., C: 20
Date of Sampling: NOVEMBER 1, 1989
Analysis By: S. BOXLEY

(number beside ion symbol indicates me/l scale unit)

Na ⁺	10.0		Cl ⁻	10.0
Ca ⁺⁺	10.0		HCO ₃ ⁻	1.0
Mg ⁺⁺	1.0		SO ₄ ⁻⁻	1.0
Fe ⁺⁺⁺	1.0		CO ₃ ⁻⁻	1.0
	12 8 4 0 4 8 12			

Temp.,C	CaCO3	CaSO4	BaSO4
10.0	-0.19	1397	0
20.0	-0.02	1473	0
30.0	0.16	1508	0
Max entity, (calc.)		170	0
RESIDUAL HYDROCARBONS:		N/D	

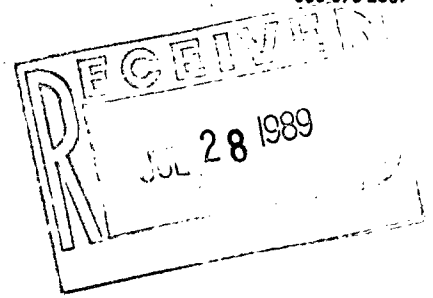
3920 Essex Lane • P.O. Box 27714 • Houston, Texas 77227-7714 • (713) 599-7400 • Telex: ITT 4620056 • Cable: BAKPERCHEM

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports
CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357



QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

RECEIVED
JUL 28 1989

Average working pressure of brine well 290 P.S.I. **GROUND WATER BUREAU**

Average brine water weight 10 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature *John A. Shanks*

Date 7/18/89



P.O. BOX 27714
HOUSTON, TEXAS 77227-7714
(713) 599-7400

A Baker Hughes company

LABORATORY ANALYSIS

DATE 7-18-89

RECEIVED
JUL 23 1989
ND WATER BUREAU

TO KTS INC.

LEASE WELL # 1

FIELD

DISTRICT

CHLORIDES	SAMPLE DESIGNATION	SAMPLE DATE
WELL # 1	1,000 MG/L	7-15-89

REPRESENTATIVE: W. H. FORT, JR.

REMARKS

LAB: S. BOXLEY

MAILING ADDRESS
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88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

APR 27 1989

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

GROUND WATER BUREAU

Average working pressure of brine well 295-305 P.S.I.

Average brine water weight 10 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature

John Ann Shaver, off mgr.

Date

4/20/89

RECEIVED

JUL 19 1989

OIL CONSERVATION DIV.
SANTA FE



A Baker Hughes company

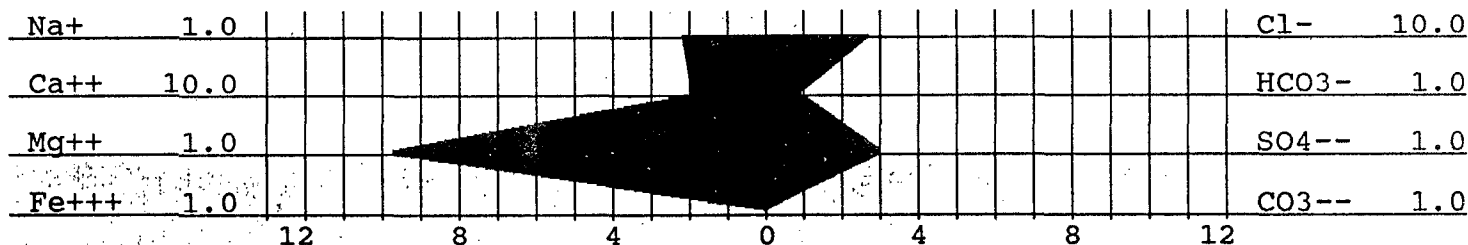
WATER ANALYSIS
for
KENNETH TANK SERV.

Date of Analysis: APRIL 20, 1989
Company: KENNETH TANK SERV.
State: CROSSROADS, NM
Lease: FRESH WATER WELL
Oil (bbl/day):
Type of Water: PRODUCED
Sample Source:
Representative: W. H. FORT, JR.

Analysis #: 4146
Company Address: P.O. BOX 100
Field:
Well #:
Water (bbl/day):
Temp., C: 20
Date of Sampling: APRIL 19, 1989
Analysis By: S. BOXLEY

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness :	30.00	
Calcium, (Ca++) :	20.00	400.96
Magnesium, (Mg++) :	10.00	121.51
Iron, (Fe+++)	0.05	1.00
Barium, (Ba++) :	N/D	N/D
Sodium, Na+(calc):	2.24	51.47
Manganese, (Mn++) :	0.00	0.00

ANIONS

Chloride, Cl- :	28.17	1000.00
Sulfate, SO4-- :	3.12	150.00
Carbonate, CO3-- :	0.00	0.00
Bicarbonate, HCO3-- :	1.00	61.01
Hydroxyl, OH- :	0.00	0.00
Sulfide, S-- :	0.00	0.00
TOTAL SOLIDS (quant.) :		661.46

DISSOLVED GASES

Hydrogen sulfide:	0.00	mg/l
Carbon dioxide :	39.60	mg/l
Oxygen :	6.00	mg/l

PHYSICAL PROPERTIES

pH :	6.95
Spec Grav. :	1.005
TDS (calc.) :	1786.96

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
20.0	-0.40	1437	0
40.0	-0.04	1480	0
60.0	0.35	1411	0
Max entity, (calc.)	212		0
RESIDUAL HYDROCARBONS:	N/D		

N/D = not determined

REMARKS: @ 20'C SLIGHTLY CORROSIVE

@ 20'C CALCIUM SULFATE SCALING IS UNLIKELY

Field Rep Livingston NM 5 396-4010

Joe Louis
Manager

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 290-310 lbs.

Average brine water weight 10 lb..

Water analysis reports attached.

Report submitted by:

Signature



Date

1/14/89

R E C E I V E D
JAN 19 1989
GROUND WATER BUREAU

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #1
SAMPLE DATE: 1-11-89
SAMPLE TEMP.:

pH: 7.0
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
Cl	298.00 *	8.39
SO ₄	42.00	0.88
Ca	125.00	6.25
Mg	21.75	1.78
Na	74.44	3.24

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 402.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 683.1 mg/ltr. *
TOTAL IRON (Fe) = 0.0 ppm

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	0.88	59.56
CaCl ₂	3.38	187.31
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	1.78	84.89
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	3.24	189.22

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.3
CaCO₃ @ 120 DEG F. = 0.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2240.2 MG/LTR.
CaSO₄ @ 110 DEG F. = 2296.9 MG/LTR.

(THIS SAMPLE CONTAINED 59.6 MG/LTR. CaSO₄)

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 295-305 P.S.I..

Average brine water weight 10 lbs/gal..

Water analysis reports attached.

Report submitted by:

Signature

C.K. Kinsolving

Date

10/14/88

RECEIVED

OCT 19 1988

GROUND WATER BUREAU

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #1
SAMPLE DATE: 10-12-88
SAMPLE TEMP.: NA

pH: 7.0
H2S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO3	122.00	2.00
Cl	256.00	7.21
SO4	40.00	0.83
Ca	120.00	6.00
Mg	24.30	1.99
Na	47.21	2.05

IONIC STRENGTH = 0.01
TOTAL HARDNESS = 400.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 609.4 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO3)2	2.00	162.08
CaSO4	0.83	56.73
CaCl2	3.17	175.75
Mg(HCO3)2	0.00	0.00
MgSO4	0.00	0.00
MgCl2	1.99	94.85
NaHCO3	0.00	0.00
Na2SO4	0.00	0.00
NaCl	2.05	120.01

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. = -0.3
CaCO3 @ 120 DEG F. = 0.0

SATURATION POINT

CaSO4 @ 70 DEG F. = 2246.7 MG/LTR.
CaSO4 @ 110 DEG F. = 2303.5 MG/LTR.

(THIS SAMPLE CONTAINED 56.7 MG/LTR. CaSO4)

MAILING ADDRESS
BOX 100
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CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

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JUL 22 1988

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

GROUND WATER/HAZARDOUS WASTE
BUREAU

Average working pressure of brine well 195-205 P.S.I.

Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature



Date

7/15/88

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #1
SAMPLE DATE: 7-13-88
SAMPLE TEMP.:

pH: 7.0
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
* Cl	298.00	8.39
SO ₄	42.00	0.88
Ca	125.00	6.25
Mg	21.75	1.78
Na	74.44	3.24

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 402.0 mg/ltr.
* TOTAL DISSOLVED SOLIDS = 683.1 mg/ltr.
TOTAL IRON (Fe) = 0.0 ppm

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	0.88	59.56
CaCl ₂	3.38	187.31
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	1.78	84.89
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	3.24	189.22

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.3
CaCO₃ @ 120 DEG F. = 0.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2240.2 MG/LTR.
CaSO₄ @ 110 DEG F. = 2296.9 MG/LTR.

(THIS SAMPLE CONTAINED 59.6 MG/LTR. CaSO₄)

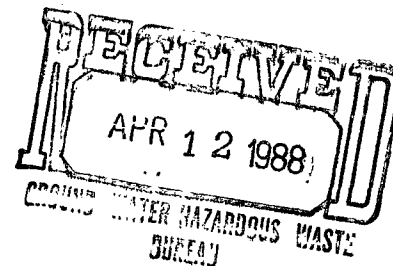
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88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357



QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 195-205 P.S.I.

Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature

A handwritten signature in cursive script, appearing to read "J. A. Shaw", written over a horizontal line.

Date

4/10/88

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #1
SAMPLE DATE: 4-2-88
SAMPLE TEMP.: NA

pH: 7.1
H2S: 0
SPECIFIC GRAVITY: 1

*No sample available
from well #2.
Pump is out.
A.S.*

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
*Cl	310.00	8.73
SO ₄	40.00	0.83
Ca	120.00	6.00
Mg	24.30	1.99
Na	82.20	3.57

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 400.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 698.3 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	0.83	56.73
CaCl ₂	3.17	175.75
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	1.99	94.85
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	3.57	208.93

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.2
CaCO₃ @ 120 DEG F. = 0.1

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2246.7 MG/LTR.
CaSO₄ @ 110 DEG F. = 2303.5 MG/LTR.

(THIS SAMPLE CONTAINED 56.7 MG/LTR. CaSO₄)

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KENNETH TANK SERVICE

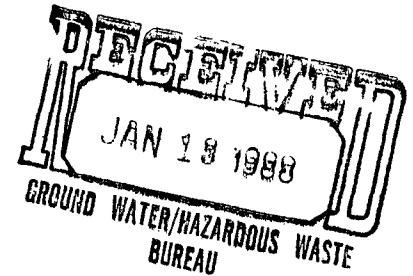
Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM



Average working pressure of brine well 295-305 P.S.I..

Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature

A handwritten signature in dark ink, appearing to read "O. L. Hunsaker", written over a horizontal line.

Date

January 7, 1988

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #1
SAMPLE DATE: 1-4-88
SAMPLE TEMP.: NA

pH: 7.0
H2S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
*Cl	340.00	9.58
SO ₄	40.00	0.83
Ca	160.00	8.00
Mg	0.00	0.00
Na	101.45	4.41

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 400.0 mg/ltr.
*TOTAL DISSOLVED SOLIDS = 763.4 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	0.83	56.73
CaCl ₂	5.17	286.75
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	0.00	0.00
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	4.41	257.86

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.2
CaCO₃ @ 120 DEG F. = 0.2

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2184.6 MG/LTR.
CaSO₄ @ 110 DEG F. = 2241.1 MG/LTR.

(THIS SAMPLE CONTAINED 56.7 MG/LTR. CaSO₄)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #2
SAMPLE DATE: 1-4-88
SAMPLE TEMP.: NA

pH: 7.0
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
* Cl	310.00	8.73
SO ₄	50.00	1.04
Ca	120.00	6.00
Mg	48.60	3.98
Na	41.18	1.79

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 500.0 mg/ltr.
* TOTAL DISSOLVED SOLIDS = 691.5 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	1.04	70.91
CaCl ₂	2.96	164.19
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	3.98	189.70
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	1.79	104.67

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.3
CaCO₃ @ 120 DEG F. = 0.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2253.3 MG/LTR.
CaSO₄ @ 110 DEG F. = 2310.0 MG/LTR.

(THIS SAMPLE CONTAINED 70.9 MG/LTR. CaSO₄)

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

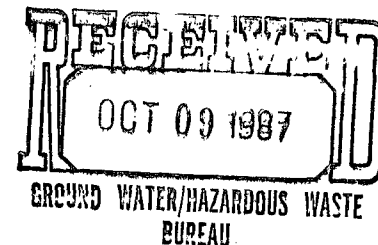
Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

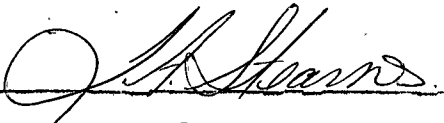


Average working pressure of brine well 295-305 P S I.

Average brine water weight 10.05-10.15 lbs./gal..

Water analysis reports attached.

Report submitted by:

Signature 

Date October 10, 1987

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #1
SAMPLE DATE: 9-30-87
SAMPLE TEMP.: NA

pH: 7.0
H2S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO3	122.00	2.00
*Cl	380.00	10.70
SO4	25.00	0.52
Ca	160.00	8.00
Mg	0.00	0.00
Na	120.18	5.23

IONIC STRENGTH = 0.02
*TOTAL HARDNESS = 400.0 mg/ltr.
*TOTAL DISSOLVED SOLIDS = 807.1 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO3)2	2.00	162.08
CaSO4	0.52	35.45
CaCl2	5.48	304.09
Mg(HCO3)2	0.00	0.00
MgSO4	0.00	0.00
MgCl2	0.00	0.00
NaHCO3	0.00	0.00
Na2SO4	0.00	0.00
NaCl	5.23	305.46

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. = -0.2
CaCO3 @ 120 DEG F. = 0.2

SATURATION POINT

CaSO4 @ 70 DEG F. = 2175.0 MG/LTR.
CaSO4 @ 110 DEG F. = 2231.6 MG/LTR.

(THIS SAMPLE CONTAINED 35.5 MG/LTR. CaSO4)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #2
SAMPLE DATE: 9-30-87
SAMPLE TEMP.: NA

pH: 7.0
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
*Cl	300.00	8.45
SO ₄	50.00	1.04
Ca	120.00	6.00
Mg	48.60	3.98
Na	34.70	1.51

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 500.0 mg/ltr.
*TOTAL DISSOLVED SOLIDS = 675.1 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	1.04	70.91
CaCl ₂	2.96	164.19
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	3.98	189.70
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	1.51	88.20

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.3
CaCO₃ @ 120 DEG F. = 0.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2253.3 MG/LTR.
CaSO₄ @ 110 DEG F. = 2310.0 MG/LTR.

(THIS SAMPLE CONTAINED 70.9 MG/LTR. CaSO₄)

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

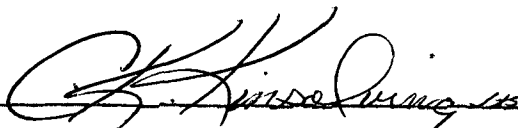
Average working pressure of brine well 195-205 P.S.I. .

Average brine water weight 10.05-10.15 lbs/gal. .

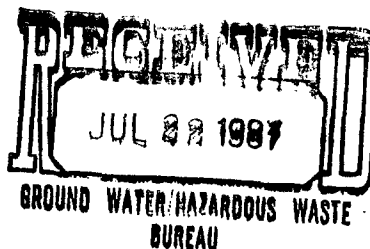
Water analysis reports attached.

Report submitted by:

Signature



Date 7/15/87



WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #1
SAMPLE DATE: 7-14-87
SAMPLE TEMP.: NA

pH: 7.0
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
*Cl	307.00	8.65
SO ₄	50.00	1.04
Ca	120.00	6.00
Mg	72.90	5.98
Na	0.00	0.00

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 600.0 mg/ltr.
*TOTAL DISSOLVED SOLIDS = 668.1 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	1.04	70.91
CaCl ₂	2.96	164.19
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	5.69	270.94
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	0.00	0.00

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.3
CaCO₃ @ 120 DEG F. = 0.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2253.3 MG/LTR.
CaSO₄ @ 110 DEG F. = 2310.0 MG/LTR.

(THIS SAMPLE CONTAINED 70.9 MG/LTR. CaSO₄)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL #2
SAMPLE DATE: 7-14-87
SAMPLE TEMP.: NA

pH: 7.0
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
*Cl	340.00	9.58
SO ₄	50.00	1.04
Ca	120.00	6.00
Mg	60.75	4.98
Na	37.71	1.64

IONIC STRENGTH = 0.02
* TOTAL HARDNESS = 550.0 mg/ltr.
* TOTAL DISSOLVED SOLIDS = 730.2 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	1.04	70.91
CaCl ₂	2.96	164.19
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	4.98	237.12
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	1.64	95.85

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.3
CaCO₃ @ 120 DEG F. = 0.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2253.3 MG/LTR.
CaSO₄ @ 110 DEG F. = 2310.0 MG/LTR.

(THIS SAMPLE CONTAINED 70.9 MG/LTR. CaSO₄)

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

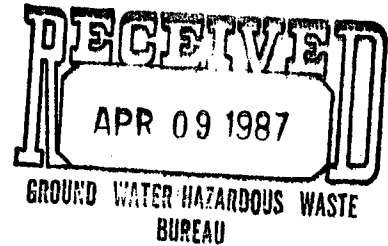
Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 305-575-2357
505-575-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM



Average working pressure of brine well 295-305 P.S.I.

Average brine water weight 10.05-10.15 lbs./gal.

Water analysis reports attached.

Report submitted by:

Signature

A handwritten signature in dark ink, appearing to read "C. H. Kinschling, Jr.", written over a horizontal line.

Date

4/5/87

WATER ANALYSIS REPORT

COMPANY Kenneth Tank Service ADDRESS _____ DATE: 4-2-87
 SOURCE Water Supply Well # 1 DATE SAMPLED 4-1-87 ANALYSIS NO. _____
 Analysis Mg/L *Meq/L

1. pH	<u>7.0</u>		
2. H ₂ S (Qualitative)	<u>Neg.</u>		
3. Specific Gravity	<u>1.0</u>		
4. Dissolved Solids		<u>992</u>	
5. Suspended Solids		<u>-</u>	
6. Phenolphthalein Alkalinity (CaCO ₃)		<u>-</u>	
7. Methyl Orange Alkalinity (CaCO ₃)		<u>100</u>	
8. Bicarbonate (HCO ₃)		<u>122</u>	<u>2</u> HCO ₃
9. Chlorides (Cl)		<u>461</u>	<u>13</u> Cl
10. Sulfates (SO ₄)		<u>96</u>	<u>2</u> SO ₄
11. Calcium (Ca)		<u>160</u>	<u>8</u> Ca
12. Magnesium (Mg)		<u>49</u>	<u>4</u> Mg
13. Total Hardness (CaCO ₃)		<u>600</u>	
14. Total Iron (Fe)			
15. Barium (Qualitative)			
16. Strontium			

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
Ca (HCO ₃) ₂	81.04	2	162		
Ca SO ₄	68.07	2	136		
Ca Cl ₂	55.50	4	222		
Mg (HCO ₃) ₂	73.17	-	-		
Mg SO ₄	60.19	-	-		
Mg Cl ₂	47.62	4	190		
Na HCO ₃	84.00	-	-		
Na ₂ SO ₄	71.03	-	-		
Na Cl	58.46	5	292		

8 4 5 Ca ← Mg ← Na ← → HCO₃ → SO₄ → Cl 2 2 13

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

REMARKS _____

Respectfully submitted
PETROLITE CORP.

WATER ANALYSIS REPORT

COMPANY Kenneth Tank Service ADDRESS _____ DATE: 4-2-87
SOURCE Water Supply Well # 2 DATE SAMPLED 4-1-87 ANALYSIS NO. _____
Analysis _____ Mg/L _____ *Meq/L _____

- | | | | |
|--|-------------|----------------------------------|---------------------------|
| 1. pH | <u>7.0</u> | | |
| 2. H ₂ S (Qualitative) | <u>Neg.</u> | | |
| 3. Specific Gravity | <u>1.0</u> | | |
| 4. Dissolved Solids | | <u>752</u> | |
| 5. Suspended Solids | | <u>-</u> | |
| 6. Phenolphthalein Alkalinity (CaCO ₃) | | <u>-</u> | |
| 7. Methyl Orange Alkalinity (CaCO ₃) | | <u>100</u> | |
| 8. Bicarbonate (HCO ₃) | | HCO ₃ <u>122</u> ÷ 61 | <u>2</u> HCO ₃ |
| 9. Chlorides (Cl) | | Cl <u>345</u> ÷ 35.5 | <u>10</u> Cl |
| 10. Sulfates (SO ₄) | | SO ₄ <u>48</u> ÷ 48 | <u>1</u> SO ₄ |
| 11. Calcium (Ca) | | Ca <u>120</u> ÷ 20 | <u>6</u> Ca |
| 12. Magnesium (Mg) | | Mg <u>61</u> ÷ 12.2 | <u>5</u> Mg |
| 13. Total Hardness (CaCO ₃) | | <u>550</u> | |
| 14. Total Iron (Fe) | | | |
| 15. Barium (Qualitative) | | | |
| 16. Strontium | | | |
- *Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

6	Ca	←	HCO ₃	2	Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
5	Mg	←	SO ₄	1	Ca (HCO ₃) ₂	81.04		2		162
2	Na	←	Cl	10	Ca SO ₄	68.07		1		68
					Ca Cl ₂	55.50		3		167
					Mg (HCO ₃) ₂	73.17		-		-
					Mg SO ₄	60.19		-		-
					Mg Cl ₂	47.62		5		238
					Na HCO ₃	84.00		-		-
					Na ₂ SO ₄	71.03		-		-
					Na Cl	58.46		2		117

Saturation Values Distilled Water 20°C
Ca CO₃ 13 Mg/L
Ca SO₄ • 2H₂O 2,090 Mg/L
Mg CO₃ 103 Mg/L

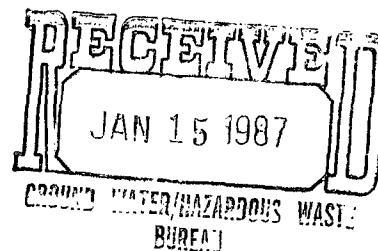
REMARKS _____

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357



QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 295-305 P.S.I.

Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature *A. Kinschling*

Date 1/12/87

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL NO. 1
SAMPLE DATE: 01/02/87
SAMPLE TEMP.:

pH: 7.0
H2S:

NEG.

SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
Cl	450.00	12.68
SO ₄	48.00	1.00
Ca	160.00	8.00
Mg	24.30	1.99
Na	130.74	5.68

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 500.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 934.8 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca (HCO ₃) ₂	2.00	162.08
CaSO ₄	1.00	68.07
CaCl ₂	5.00	277.50
Mg (HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	1.99	94.85
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	5.68	332.30

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.2
CaCO₃ @ 120 DEG F. = 0.2

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2189.7 MG/LTR.
CaSO₄ @ 110 DEG F. = 2246.3 MG/LTR.

(THIS SAMPLE CONTAINED 68.1 MG/LTR. CaSO₄)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: KENNETH TANK SERVICE
LEASE: WATER STATION
SAMPLE POINT: WELL NO. 2
SAMPLE DATE: 01/02/87
SAMPLE TEMP.:

pH: 7.0
H2S:

NEG.

SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
Cl	340.00	9.58
SO ₄	48.00	1.00
Ca	120.00	6.00
Mg	60.75	4.98
Na	36.75	1.60

IONIC STRENGTH = 0.02
TOTAL HARDNESS = 550.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 727.2 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca (HCO ₃) ₂	2.00	162.08
CaSO ₄	1.00	68.07
CaCl ₂	3.00	166.50
Mg (HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	4.98	237.12
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	1.60	93.42

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.3
CaCO₃ @ 120 DEG F. = 0.0

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2252.0 MG/LTR.
CaSO₄ @ 110 DEG F. = 2308.7 MG/LTR.

(THIS SAMPLE CONTAINED 68.1 MG/LTR. CaSO₄)

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 295-305 P.S.I.

Average brine water weight 10.05-10.15 lbs/gal.

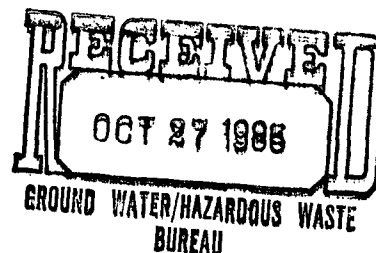
Water analysis reports attached.

Report submitted by:

Signature

C. K. Kinschling MS.

Date 10/15/86



PETROLITE

PETROLITE OIL FIELD CHEMICALS GROUP

369 Marshall Avenue • St. Louis, Missouri 63119
-314 961-3500 • TWX 910-760-1660 • Telex: 44-2417**WATER ANALYSIS REPORT**

COMPANY KENNETH TANK SERVICE ADDRESS _____ DATE: 10-16-86
 SOURCE WATER SUPPLY WELL # 1 DATE SAMPLED 10-13-86 ANALYSIS NO. _____
 Analysis _____ Mg/L _____ *Meq/L _____

1. pH	<u>7.0</u>			
2. H ₂ S (Qualitative)	<u>Neg.</u>			
3. Specific Gravity	<u>1.0</u>			
4. Dissolved Solids		<u>992</u>		
5. Suspended Solids		<u>---</u>		
6. Phenolphthalein Alkalinity (CaCO ₃)		<u>---</u>		
7. Methyl Orange Alkalinity (CaCO ₃)		<u>100</u>		
8. Bicarbonate (HCO ₃)		<u>122</u>	÷ 61	<u>2</u> HCO ₃
9. Chlorides (Cl)		<u>461</u>	÷ 35.5	<u>13</u> Cl
10. Sulfates (SO ₄)		<u>96</u>	÷ 48	<u>2</u> SO ₄
11. Calcium (Ca)		<u>160</u>	÷ 20	<u>8</u> Ca
12. Magnesium (Mg)		<u>49</u>	÷ 12.2	<u>4</u> Mg
13. Total Hardness (CaCO ₃)		<u>600</u>		
14. Total Iron (Fe)				
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

8	Ca	←	HCO ₃	2	Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
4	Mg	←	SO ₄	2	Ca (HCO ₃) ₂	81.04		2		162
5	Na	←	Cl	13	Ca SO ₄	68.07		2		136
					Ca Cl ₂	55.50		4		222
					Mg (HCO ₃) ₂	73.17		0		0
					Mg SO ₄	60.19		0		0
					Mg Cl ₂	47.62		4		190
					Na HCO ₃	84.00		0		0
					Na ₂ SO ₄	71.03		0		0
					Na Cl	58.46		5		292

Saturation Values Distilled Water 20°C
 Ca CO₃ 13 Mg/L
 Ca SO₄ • 2H₂O 2,090 Mg/L
 Mg CO₃ 103 Mg/L

REMARKS _____



PETROLITE OIL FIELD CHEMICALS GROUP

369 Marshall Avenue • St. Louis, Missouri 63119
314 961-3500 • TWX 910-760-1660 • Telex: 44-2417**WATER ANALYSIS REPORT**

COMPANY KENNETH TANK SERVICE ADDRESS _____ DATE: 10-16-86
SOURCE WATER SUPPLY WELL # 2 DATE SAMPLED 10-13-86 ANALYSIS NO. _____
Analysis _____ Mg/L _____ *Meq/L _____

1. pH	<u>7.0</u>			
2. H ₂ S (Qualitative)	<u>Neg.</u>			
3. Specific Gravity	<u>1.0</u>			
4. Dissolved Solids		<u>752</u>		
5. Suspended Solids		<u>---</u>		
6. Phenolphthalein Alkalinity (CaCO ₃)		<u>---</u>		
7. Methyl Orange Alkalinity (CaCO ₃)		<u>100</u>		
8. Bicarbonate (HCO ₃)		<u>122</u>	<u>÷ 61</u>	<u>2</u> HCO ₃
9. Chlorides (Cl)		<u>345</u>	<u>÷ 35.5</u>	<u>10</u> Cl
10. Sulfates (SO ₄)		<u>48</u>	<u>÷ 48</u>	<u>1</u> SO ₄
11. Calcium (Ca)		<u>120</u>	<u>÷ 20</u>	<u>6</u> Ca
12. Magnesium (Mg)		<u>61</u>	<u>÷ 12.2</u>	<u>5</u> Mg
13. Total Hardness (CaCO ₃)		<u>550</u>		
14. Total Iron (Fe)				
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

6	Ca	←	HCO ₃	2	Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
5	Mg	→	SO ₄	1	Ca (HCO ₃) ₂	81.04		2		162
2	Na	→	Cl	10	Ca SO ₄	68.07		1		68
					Ca Cl ₂	55.50		3		167
					Mg (HCO ₃) ₂	73.17		0		0
					Mg SO ₄	60.19		0		0
					Mg Cl ₂	47.62		5		238
					Na HCO ₃	84.00		0		0
					Na ₂ SO ₄	71.03		0		0
					Na Cl	58.46		2		117

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

REMARKS _____

Respectfully submitted
PETROLITE CORP.

Jayson Jones

NG ADDRESS
BOX 1004
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

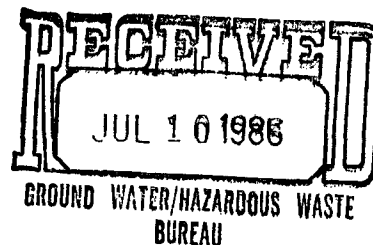
Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM



Average working pressure of brine well 295-305 P.S.I.

Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature

C. K. Kinschling

Date

7/7/86



WATER ANALYSIS REPORT

COMPANY KENNETH TANK SERVICE ADDRESS CROSSROADS, N.M. DATE 7-2-86SOURCE WATER SUPPLY WELL # 1 DATE SAMPLED 6-30-86 ANALYSIS NO.

Analysis

Mg/l

*Meq/l

1. pH	<u>7.0</u>			
2. H ₂ S (Qualitative)	<u>Neg.</u>			
3. Specific Gravity	<u>1.0</u>			
4. Dissolved Solids		<u>1151</u>		
5. Suspended Solids				
6. Phenolphthalein Alkalinity (CaCO ₃)				
7. Methyl Orange Alkalinity (CaCO ₃)		<u>100</u>		
8. Bicarbonate (HCO ₃)		<u>122</u>	<u>÷ 61</u>	<u>2</u> HCO
9. Chlorides (Cl)		<u>472</u>	<u>÷ 35.5</u>	<u>13</u> Cl
10. Sulfates (SO ₄)		<u>96</u>	<u>÷ 48</u>	<u>2</u> SO ₄
11. Calcium (Ca)		<u>120</u>	<u>÷ 20</u>	<u>6</u> Ca
12. Magnesium (Mg)		<u>49</u>	<u>÷ 12.2</u>	<u>4</u> Mg
13. Total Hardness (CaCO ₃)		<u>500</u>		
14. Total Iron (Fe)		<u>0 ppm</u>		
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

	Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
6	Ca (HCO ₃) ₂	81.04	2	2		162
4	Ca SO ₄	68.07	2	2		136
7	Ca Cl ₂	55.50	2	2		111
	Mg (HCO ₃) ₂	73.17	0	0		0
	Mg SO ₄	60.19	0	0		0
	Mg Cl ₂	47.62	7	7		333
	Na HCO ₃	84.00	0	0		0
	Na ₂ SO ₄	71.03	0	0		0
	Na Cl	58.46	7	7		409

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

REMARKS

Respectfully submitted
PETROLITE CORP.
Jayson Jones

**WATER ANALYSIS REPORT**COMPANY KENNETH TANK SERVICE ADDRESS CROSSROADS, N.M. DATE 7-2-86SOURCE WATER SUPPLY WELL # 2 DATE SAMPLED 6-30-86 ANALYSIS NO. _____

Analysis

Mg/L

* Meq/L

1. pH	<u>7.0</u>			
2. H ₂ S (Qualitative)	<u>Neg.</u>			
3. Specific Gravity	<u>1.0</u>			
4. Dissolved Solids		<u>913</u>		
5. Suspended Solids				
6. Phenolphthalein Alkalinity (CaCO ₃)				
7. Methyl Orange Alkalinity (CaCO ₃)		<u>100</u>		
8. Bicarbonate (HCO ₃)		<u>122</u>	<u>÷ 61</u>	<u>2</u>
9. Chlorides (Cl)		<u>472</u>	<u>÷ 35.5</u>	<u>13</u>
10. Sulfates (SO ₄)		<u>48</u>	<u>÷ 48</u>	<u>1</u>
11. Calcium (Ca)		<u>140</u>	<u>÷ 20</u>	<u>7</u>
12. Magnesium (Mg)		<u>73</u>	<u>÷ 12.2</u>	<u>6</u>
13. Total Hardness (CaCO ₃)		<u>650</u>		
14. Total Iron (Fe)		<u>0 ppm</u>		
15. Barium (Qualitative)				
16. Strontium				

* Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

	Ca	Mg	Na	HCO ₃	SO ₄	Cl		Compound	Equiv. Wt.	X	Meq/L	Mg/L
7							2	Ca (HCO ₃) ₂	81.04		2	162
6							1	Ca SO ₄	68.07		1	68
3							13	Ca Cl ₂	55.50		4	222
								Mg (HCO ₃) ₂	73.17		0	0
								Mg SO ₄	60.19		0	0
								Mg Cl ₂	47.62		6	286
								Na HCO ₃	84.00		0	0
								Na ₂ SO ₄	71.03		0	0
								Na Cl	58.46		3	175

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

REMARKS _____

Respectfully submitted
PETROLITE CORP.

JAYSON JONES

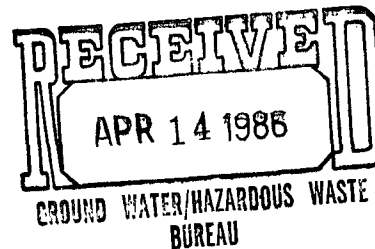
ING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357



QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 295-305 P.S.I.

Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature _____

Date 4/11/86

PETROLITE

PETROLITE OIL FIELD CHEMICALS GROUP

369 Marshall Avenue • St. Louis, Missouri 63119
314 961-3500 • TWX 910-760-1660 • Telex: 44-2417**WATER ANALYSIS REPORT**

COMPANY KENNETH TANK SERVICE ADDRESS _____ DATE: 4-3-86

SOURCE WATER SUPPLY WELL # 1 DATE SAMPLED 4-1-86 ANALYSIS NO. _____

Analysis Mg/L *Meq/L

1. pH	7.0			
2. H ₂ S (Qualitative)	Neg.			
3. Specific Gravity	1.010			
4. Dissolved Solids		1,411		
5. Suspended Solids		-		
6. Phenolphthalein Alkalinity (CaCO ₃)		-		
7. Methyl Orange Alkalinity (CaCO ₃)		100		
8. Bicarbonate (HCO ₃)		122	÷ 61	2
9. Chlorides (Cl)		707	÷ 35.5	20
10. Sulfates (SO ₄)		96	÷ 48	2
11. Calcium (Ca)		160	÷ 20	8
12. Magnesium (Mg)		49	÷ 12.2	4
13. Total Hardness (CaCO ₃)		600		
14. Total Iron (Fe)				
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

8	Ca	HCO ₃	2		
4	Mg	SO ₄	2		
12	Na	Cl	20		

Saturation Values	Distilled Water 20°C		
Ca CO ₃	13 Mg/L		
Ca SO ₄ • 2H ₂ O	2,090 Mg/L		
Mg CO ₃	103 Mg/L		

Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
Ca (HCO ₃) ₂	81.04	2			162
Ca SO ₄	68.07	2			136
Ca Cl ₂	55.50	4			222
Mg (HCO ₃) ₂	73.17	0			0
Mg SO ₄	60.19	0			0
Mg Cl ₂	47.62	4			190
Na HCO ₃	84.00	0			0
Na ₂ SO ₄	71.03	0			0
Na Cl	58.46	12			701

REMARKS _____

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

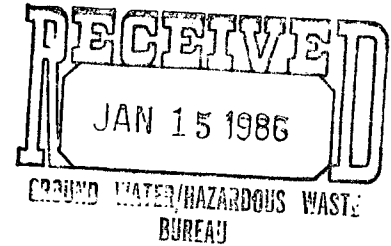
Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-875-2366
505-875-2367

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM



Average working pressure of brine well 295-305 P.S.I.

Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

Report submitted by:

Signature

Date 1/10/86

WATER ANALYSIS REPORT

COMPANY KENNETH TANK SERVICE

ADDRESS _____

DATE: 1-7-86

SOURCE WSW # 2 (West)
Analysis

DATE SAMPLED 1-6-86
Mg/L

ANALYSIS NO. _____
*Meq/L

1. pH 7.0
 2. H₂S (Qualitative) Neg.
 3. Specific Gravity 1.005
 4. Dissolved Solids 9,830
 5. Suspended Solids -
 6. Phenolphthalein Alkalinity (CaCO₃) -
 7. Methyl Orange Alkalinity (CaCO₃) 150
 8. Bicarbonate (HCO₃) 183
 9. Chlorides (Cl) 5898
 10. Sulfates (SO₄) 50
 11. Calcium (Ca) 600
 12. Magnesium (Mg) 122
 13. Total Hardness (CaCO₃) 2000
 14. Total Iron (Fe) _____
 15. Barium (Qualitative) _____
 16. Strontium _____
- *Milli equivalents per liter

HCO ₃	183	÷ 61	3	HCO ₃
Cl	5898	÷ 35.5	166	Cl
SO ₄	50	÷ 48	1	SO ₄
Ca	600	÷ 20	30	Ca
Mg	122	÷ 12.2	10	Mg
	2000			

9830
6853
1977

PROBABLE MINERAL COMPOSITION

30	Ca	←	HCO ₃	3
10	Mg	→	SO ₄	1
130	Na	→	Cl	166

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
Ca (HCO ₃) ₂	81.04		3		243
Ca SO ₄	68.07		1		68
Ca Cl ₂	55.50		26		1443
Mg (HCO ₃) ₂	73.17		0		0
Mg SO ₄	60.19		0		0
Mg Cl ₂	47.62		10		476
Na HCO ₃	84.00		0		0
Na ₂ SO ₄	71.03		0		0
Na Cl	58.46		130		7600

REMARKS _____

Respectfully submitted
PETROLITE CORP.

MAILING ADDRESS
BOX 100
CROSSROADS, N.M.
88114

KENNETH TANK SERVICE

Crude and Water Transports

CROSSROADS, NEW MEXICO 88114

PHONE: 505-675-2356
505-675-2357

QUARTERLY REPORT IN COMPLIANCE OF:

Discharge Plan DP-355
KENNETH TANK SERVICE
BRINE PRODUCTION FACILITY
Crossroads, NM

Average working pressure of brine well 295-305 P.S.I.

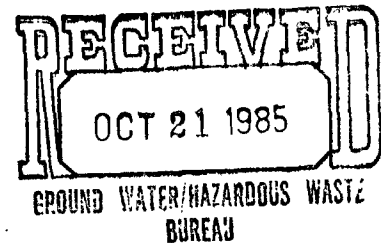
Average brine water weight 10.05-10.15 lbs/gal.

Water analysis reports attached.

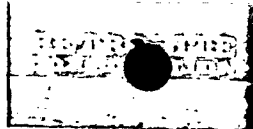
Report submitted by:

Signature

Date October 8, 1985



RECEIVED
OCT 16 1985
SURFACE WATER QUALITY BUREAU



TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63119
(314) WD 1-3500/TWX 910-760-1660/Telex 44-2417

WATER ANALYSIS REPORT

COMPANY KENNETH TANK ADDRESS BOX 100 DATE 10-1-85SOURCE WELL # 1 - south of Yanks DATE SAMPLED 9-30-85 ANALYSIS NO.
Analysis approx. 20' Mg/L *Meq/L

1. pH	<u>5.6</u>			
2. H ₂ S (Qualitative)	<u>Neg.</u>			
3. Specific Gravity	<u>1.005</u>			
4. Dissolved Solids		<u>1,985</u>		
5. Suspended Solids		<u>-</u>		
6. Phenolphthalein Alkalinity (CaCO ₃)		<u>-</u>		
7. Methyl Orange Alkalinity (CaCO ₃)		<u>100</u>		
8. Bicarbonate (HCO ₃)		<u>122</u>	<u>÷ 61</u>	<u>2</u> HCO ₃
9. Chlorides (Cl)		<u>1062</u>	<u>÷ 35.5</u>	<u>30</u> Cl
10. Sulfates (SO ₄)		<u>75</u>	<u>÷ 48</u>	<u>2</u> SO ₄
11. Calcium (Ca)		<u>380</u>	<u>÷ 20</u>	<u>19</u> Ca
12. Magnesium (Mg)		<u>24</u>	<u>÷ 12.2</u>	<u>2</u> Mg
13. Total Hardness (CaCO ₃)		<u>10500</u>		
14. Total Iron (Fe)				
15. Barium (Qualitative)				
16. Strontium				

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

	Ca	Mg	Na	HCO ₃	SO ₄	Cl		Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
	19						2	Ca (HCO ₃) ₂	81.04		2		162
	2						2	Ca SO ₄	68.07		2		136
							30	Ca Cl ₂	55.50		15		832
								Mg (HCO ₃) ₂	73.17		0		0
								Mg SO ₄	60.19		0		0
								Mg Cl ₂	47.62		2		95
								Na HCO ₃	84.00		0		0
								Na ₂ SO ₄	71.03		0		0
								Na Cl	58.46		13		760

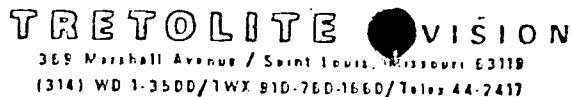
Saturation Values Distilled Water 20°C

Ca CO₃ 13 Mg/LCa SO₄ • 2H₂O 2,090 Mg/LMg CO₃ 103 Mg/L

REMARKS

Respectfully submitted
TRETOLITE COMPANY

Ron Matthews



COMPANY KENNETH TANK ADDRESS BOX 100 DATE: 10-1-85

SOURCE WELL # 2: west of Vankar ~ DATE SAMPLED 9-30-85 ANALYSIS
Analysis 100' away Mg/L *Meq/L

- | | |
|--|-------|
| 1. pH | 5.85 |
| 2. H_2S (Qualitative) | Neg. |
| 3. Specific Gravity | 1.005 |
| 4. Dissolved Solids | |
| 5. Suspended Solids | |
| 6. Phenolphthalein Alkalinity ($CaCO_3$) | |
| 7. Methyl Orange Alkalinity ($CaCO_3$) | |
| 8. Bicarbonate (HCO_3) | |
| 9. Chlorides (Cl) | |
| 10. Sulfates (SO_4) | |
| 11. Calcium (Ca) | |
| 12. Magnesium (Mg) | |
| 13. Total Hardness ($CaCO_3$) | |
| 14. Total Iron (Fe) | |
| 15. Barium (Qualitative) | |
| 16. Strontium | |

* Milli equivalents per liter

	<u>1611</u>		
	-		
	-		
	<u>150</u>		
HCO ₃	<u>183</u>	÷ 61	<u>3</u> HCO ₃
Cl	<u>708</u>	÷ 35.5	<u>20</u> Cl
SO ₄	<u>175</u>	÷ 48	<u>4</u> SO ₄
Ca	<u>340</u>	÷ 20	<u>17</u> Ca
Mg	<u>49</u>	÷ 12.2	<u>4</u> Mg
	1050		

Na, K?

PROBABLE MINERAL COMPOSITION

17	Ca	←	HCO ₃	3
4	Mg	→	SO ₄	4
6	Na	→	Cl	20

Saturation Values	Distilled Water 20°C
Ca CO ₃	13 Mg/L
Ca SO ₄ • 2H ₂ O	2,090 Mg/L
Mg CO ₃	103 Mg/L

Compound	Eqiv. Wt.	X	Meq/L	=	Mg/L
Ca (HCO ₃) ₂	81.04		<u>3</u>		<u>243</u>
Ca SO ₄	68.07		<u>4</u>		<u>272</u>
Ca Cl ₂	55.50		<u>10</u>		<u>555</u>
Mg (HCO ₃) ₂	73.17		<u>0</u>		<u>0</u>
Mg SO ₄	60.19		<u>0</u>		<u>0</u>
Mg Cl ₂	47.62		<u>4</u>		<u>190</u>
Na HCO ₃	84.00		<u>0</u>		<u>0</u>
Na ₂ SO ₄	71.03		<u>0</u>		<u>0</u>
Na Cl	58.46		<u>6</u>		<u>351</u>

REMARKS

Respectfully submitted
TRIFOLITE COMPANY

Ron Matthews