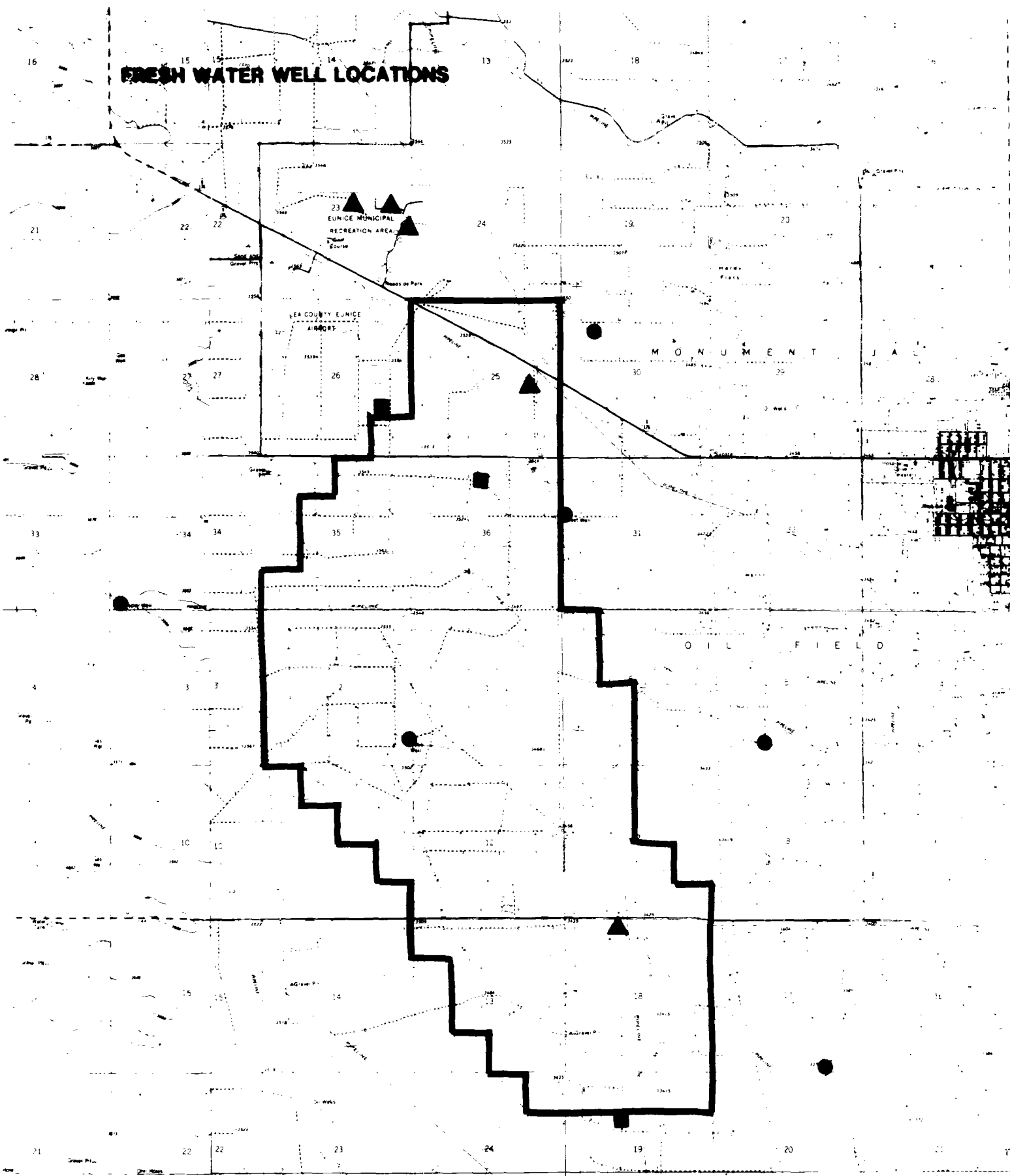


# FRESH WATER WELL LOCATIONS



- ▲ WELLS REGISTERED W/STATE & SAMPLED
- NON REGISTERED & SAMPLED WELLS
- WELLS REGISTERED BUT INACTIVE OR NOT FOUND

P O BOX 1468  
MONAHANS, TEXAS 79756  
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. Stan Chapman LABORATORY NO. 1090250  
P. O. Box 1150, Midland, TX 79702 SAMPLE RECEIVED 10-25-90  
RESULTS REPORTED 11-1-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "C"  
FIELD OR POOL Arrowhead  
SECTION 18 BLOCK        SURVEY T-22S & R37E COUNTY Lea STATE NM  
SOURCE OF SAMPLE AND DATE TAKEN:  
NO. 1 Raw water - taken from Northern Natural Gas Water Well.  
NO. 2         
NO. 3         
NO. 4       

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0028			
pH When Sampled				
pH When Received	9.43			
Bicarbonate as HCO <sub>3</sub>	124			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	112			
Calcium as Ca	2			
Magnesium as Mg	26			
Sodium and/or Potassium	644			
Sulfate as SO <sub>4</sub>	805			
Chloride as Cl	344			
Iron as Fe	0.36			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	1,999			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	3.33			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Carbonate, as CO <sub>3</sub>	53			
Nitrate, as N	0.7			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

### RESULT OF WATER ANALYSES

LABORATORY NO. 1090249  
 To: Mr. Stan Chapman SAMPLE RECEIVED 10-25-90  
P. O. Box 1150, Midland, TX 79702 RESULTS REPORTED 11-1-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "O"  
FIELD OR POOL Arrowhead

SECTION 17 BLOCK        SURVEY T-22S & R-37E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from water well.

NO. 2

NO. 3 \_\_\_\_\_

NO. 4

## REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0024			
pH When Sampled				
pH When Received	7.82			
Bicarbonate as HCO <sub>3</sub>	259			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	520			
Calcium as Ca	118			
Magnesium as Mg	54			
Sodium and/or Potassium	269			
Sulfate as SO <sub>4</sub>	155			
Chloride as Cl	518			
Iron as Fe	0.14			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	1,373			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	4.55			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	1.6			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

### RESULT OF WATER ANALYSES

TO: <u>Mr. Stan Chapman</u>	LABORATORY NO. <u>1090248</u>
<u>P. O. Box 1150, Midland, TX 79702</u>	SAMPLE RECEIVED <u>10-25-90</u>
	RESULTS REPORTED <u>11-1-90</u>

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "N"  
FIELD OR POOL Arrowhead  
SECTION 5 BLOCK        SURVEY T-22S & R-37E COUNTY Lea STATE NM  
SOURCE OF SAMPLE AND DATE TAKEN: \_\_\_\_\_

NO. 1 Raw water - taken from windmill.

NO. 2 \_\_\_\_\_

NO. 3 \_\_\_\_\_

NO. 4 \_\_\_\_\_

## REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0015			
pH When Sampled				
pH When Received	7.82			
Bicarbonate as HCO <sub>3</sub>	305			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	254			
Calcium as Ca	54			
Magnesium as Mg	29			
Sodium and/or Potassium	115			
Sulfate as SO <sub>4</sub>	98			
Chloride as Cl	108			
Iron as Fe	0.32			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	709			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	11.11			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	3.0			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

P O BOX 1468  
MONAHAN, TEXAS 79756  
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. Stan Chapman  
P. O. Box 1150, Midland, TX 79702

LABORATORY NO. 1090247  
SAMPLE RECEIVED 10-25-90  
RESULTS REPORTED 11-1-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "p"  
FIELD OR POOL Arrowhead  
SECTION 2 BLOCK SURVEY T-22S & R-36E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from Cobb windmill.

NO. 2

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0034			
pH When Sampled				
pH When Received	7.35			
Bicarbonate as HCO <sub>3</sub>	239			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	775			
Calcium as Ca	172			
Magnesium as Mg	84			
Sodium and/or Potassium	459			
Sulfate as SO <sub>4</sub>	303			
Chloride as Cl	895			
Iron as Fe	1.7			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	2,153			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	2.76			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	1.8			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

## RESULT OF WATER ANALYSES

TO: Mr. Stan Chapman  
P. O. Box 1150, Midland, TX 79702

LABORATORY NO. 119029  
SAMPLE RECEIVED 11-1-90  
RESULTS REPORTED 11-9-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "E"  
FIELD OR POOL Arrowhead  
SECTION 31 BLOCK        SURVEY T21S-A37E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from water well by stock pond by Matter "B" #14.

NO. 2 \_\_\_\_\_

NO. 3

NO. 4 \_\_\_\_\_

## REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0018			
pH When Sampled				
pH When Received	7.51			
Bicarbonate as HCO <sub>3</sub>	293			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	148			
Calcium as Ca	38			
Magnesium as Mg	13			
Sodium and/or Potassium	97			
Sulfate as SO <sub>4</sub>	45			
Chloride as Cl	51			
Iron as Fe	1.5			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	536			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	16.10			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	0.2			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

P O BOX 1468  
MONAHANS, TEXAS 79756  
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. Stan Chapman  
P. O. Box 1150, Midland, TX 79702

LABORATORY NO. 1090245  
SAMPLE RECEIVED 10-25-90  
RESULTS REPORTED 11-1-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "D"  
FIELD OR POOL Arrowhead  
SECTION 30 BLOCK        SURVEY T-21S & R-37E COUNTY Lea STATE NM  
SOURCE OF SAMPLE AND DATE TAKEN:  
NO. 1 Raw water - taken from windmill.  
NO. 2         
NO. 3         
NO. 4       

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0016			
pH When Sampled				
pH When Received	7.29			
Bicarbonate as HCO <sub>3</sub>	239			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	232			
Calcium as Ca	52			
Magnesium as Mg	19			
Sodium and/or Potassium	92			
Sulfate as SO <sub>4</sub>	107			
Chloride as Cl	88			
Iron as Fe	26.2			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	607			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	12.65			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	2.3			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

By Waylan C. Martin  
Waylan C. Martin, M.A.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

### RESULT OF WATER ANALYSES

TO: Mr. Stan Chapman  
P. O. Box 1150, Midland, TX 79702

LABORATORY NO. 1090246  
SAMPLE RECEIVED 10-25-90  
RESULTS REPORTED 11-1-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "M"  
FIELD OR POOL Arrowhead  
SECTION 34 BLOCK \_\_\_\_\_ SURVEY T-21S & R-36E COUNTY Lea STATE NM  
SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from windmill.

NO. 2 \_\_\_\_\_

NO. 3

NO. 4 \_\_\_\_\_

## REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0020			
pH When Sampled				
pH When Received	8.75			
Bicarbonate as HCO <sub>3</sub>	378			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	14			
Calcium as Ca	3			
Magnesium as Mg	1			
Sodium and/or Potassium	256			
Sulfate as SO <sub>4</sub>	115			
Chloride as Cl	21			
Iron as Fe	0.58			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	842			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	9.58			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Carbonate, as CO <sub>3</sub>	67			
Nitrate, as N	0.2			

### Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

P. O. BOX 1468  
MONAHAN, TEXAS 79756  
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. Stan Chapman  
P. O. Box 1150, Midland, TX 79702

LABORATORY NO. 1090244  
SAMPLE RECEIVED 10-25-90  
RESULTS REPORTED 11-1-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "G"  
FIELD OR POOL Arrowhead  
SECTION 25 BLOCK SURVEY T-21S & R-36E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from Northern Natural Gas Water Well.  
NO. 2  
NO. 3  
NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0018			
pH When Sampled				
pH When Received	6.71			
Bicarbonate as HCO <sub>3</sub>	307			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	310			
Calcium as Ca	79			
Magnesium as Mg	27			
Sodium and/or Potassium	114			
Sulfate as SO <sub>4</sub>	99			
Chloride as Cl	143			
Iron as Fe	0.29			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	771			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	9.70			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	0.3			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

709 W INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

## RESULT OF WATER ANALYSES

TO: Mr. Stan Chapman  
P. O. Box 1150, Midland, TX 79702

LABORATORY NO. 1090251  
SAMPLE RECEIVED 10-25-90  
RESULTS REPORTED 11-1-90

COMPANY Chevron U.S.A., Inc. LEASE Arrowhead Grayburg Unit "H"  
FIELD OR POOL Arrowhead  
SECTION 23 BLOCK \_\_\_\_\_ SURVEY T-21S & R-36E COUNTY Lea STATE NM  
SOURCE OF SAMPLE AND DATE TAKEN:

- |       |   |
|-------|---|
| NO. 1 | <u>Raw water - taken from City of Eunice water well (middle).</u> |
| NO. 2 | <u>Raw water - taken from City of Eunice water well (North).</u>  |
| NO. 3 | <u>Raw water - taken from City of Eunice water well (South).</u>  |
| NO. 4 | <u>_____</u>  |

## REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0015	1.0016	1.0014	
pH When Sampled				
pH When Received	7.35	7.50	7.42	
Bicarbonate as HCO <sub>3</sub>	268	268	342	
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	212	200	220	
Calcium as Ca	52	50	67	
Magnesium as Mg	20	18	13	
Sodium and/or Potassium	93	86	96	
Sulfate as SO <sub>4</sub>	90	83	41	
Chloride as Cl	70	57	75	
Iron as Fe	0.11	0.11	0.11	
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	594	562	635	
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.				
Hydrogen Sulfide	0.0	0.0	0.0	
Resistivity, ohms/m at 77° F.	13.50	14.86	13.30	
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	2.1	2.8	0.7	

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.