

Charlie



BJ SERVICES
Farmington District Lab
Water Analysis Report

30-045-21782

Test # FW03-0055

Customer/Well Information

Company: Burlington Resources
Well Name: Grambling 3A
Location:
State: San Juan County, NM
Formation: Bradenhead
Depth: ft
Date: 4/2/03
Prepared for: Ms. Kelly Sutton
Submitted by: Gary Osborne
Prepared by: Dave Shepherd
Water Type: Produced

Background Information

Reason for Testing: Routine Water Analysis
Completion type:
Well History:
Comments: Sample from Bradenhead

Sample Characteristics

Sample Temp: 76 (°F)
pH: 8.46
Specific Gravity: 1.006
S.G. (Corrected): 1.009 @ 60 °F
Resistivity (Calc): 0.51 Ω-m
Viscosity: 1 cp
Color: Clear
Odor: None
Turbidity: None
Filtrates: None

Sample Composition

CATIONS

	mg/l	me/l	ppm
Sodium (calc.)	3133	136.3	3114
Calcium	393	19.6	391
Magnesium	53	4.4	53
Barium	0	0.0	0
Potassium	9	0.2	9
Iron	0.00	0.0	0.00

ANIONS

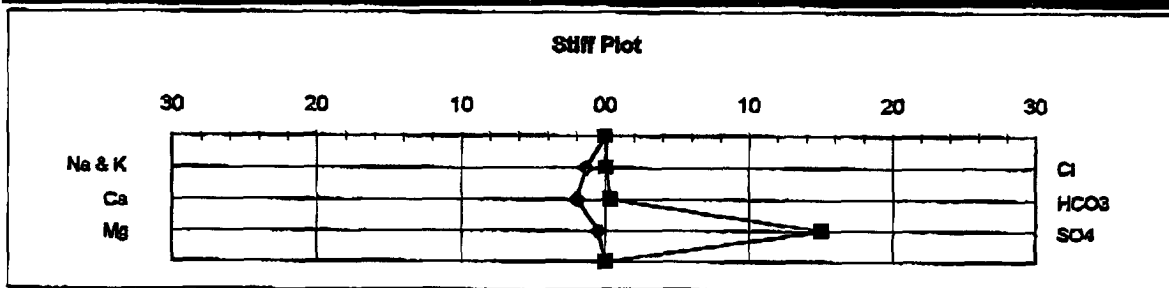
Chloride	200	5.6	199
Sulfate	7300	152.0	7256
Hydroxide	0	0.0	0
Carbonate	< 1	—	—
Bicarbonate	207	3.4	206

SUMMARY

Total Dissolved Solids(calc.)	11286		11219
Total Hardness as CaCO3	1201	24.0	1194

Scaling Tendencies

CaCO3 Factor 81504.05 **Calcium Carbonate Scale Probability** → REMOTE
CaSO4 Factor 2868754 **Calcium Sulfate Scale Probability** → REMOTE



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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	Burlington Resources	Project #:	92115-001
Sample ID:	Grambling 3A	Date Reported:	10-25-02
Laboratory Number:	24093	Date Sampled:	10-24-02
Chain of Custody:	10376	Date Received:	10-24-02
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	10-24-02
Condition:	Cool & Intact		

Parameter	Analytical Result	Units	Units
pH	9.12	s.u.	
Conductivity @ 25° C	20,480	umhos/cm	
Total Dissolved Solids @ 180C	10,230	mg/L	
Total Dissolved Solids (Calc)	10,190	mg/L	
SAR	39.7	ratio	
Total Alkalinity as CaCO3	71.2	mg/L	
Total Hardness as CaCO3	996	mg/L	
Bicarbonate as HCO3	71.2	mg/L	1.17 meq/L
Carbonate as CO3	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	0.1	mg/L	0.00 meq/L
Nitrite Nitrogen	0.004	mg/L	0.00 meq/L
Chloride	53.6	mg/L	1.51 meq/L
Fluoride	8.40	mg/L	0.44 meq/L
Phosphate	0.5	mg/L	0.02 meq/L
Sulfate	6,820	mg/L	141.99 meq/L
Iron	0.017	mg/L	0.00 meq/L
Calcium	346	mg/L	17.25 meq/L
Magnesium	32.2	mg/L	2.65 meq/L
Potassium	7.7	mg/L	0.20 meq/L
Sodium	2,880	mg/L	125.28 meq/L
Cations			145.38 meq/L
Anions			145.13 meq/L
Cation/Anion Difference			0.17%

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Water And Waste Water", 18th ed., 1992.

Comments:

Analyst

Review

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

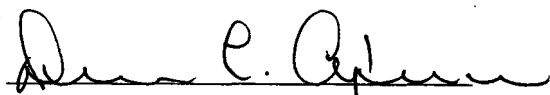
Client:	Burlington Resources	Project #:	92115-001
Sample ID:	Grambling 3A	Date Reported:	10-25-02
Laboratory Number:	24093	Date Sampled:	10-24-02
Chain of Custody No:	10376	Date Received:	10-24-02
Sample Matrix:	Water	Date Extracted:	10-25-02
Preservative:	Cool	Date Analyzed:	10-25-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

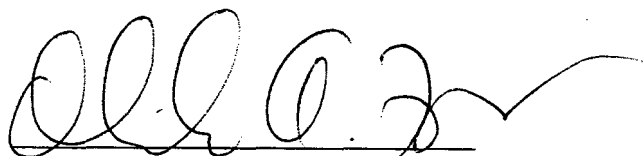
Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	1.3	0.2
Diesel Range (C10 - C28)	4.5	0.1
Total Petroleum Hydrocarbons	5.8	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments:


Analyst


Review