

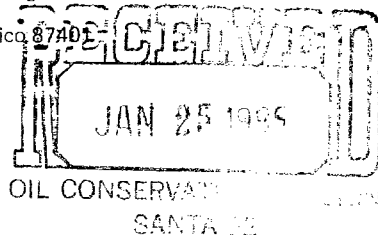


W. J. Holcomb
District Manager

January 23, 1985

Amoco Production Company

Petroleum Center Building
501 Airport Drive
Farmington, New Mexico 87401
505-325-8841



Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

File: TKA-6-400.1

Case 8506

Gentlemen:

Conversion of Johnson Gas Com E No. 1
to a Water Disposal Well

Amoco Production Company requests approval to convert the Johnson Gas Com E No. 1 to a water disposal well. This well was originally drilled as a gas well, but proved to be uneconomical after nine days of on line production.

The proposed injection interval, 3904-4565', is the original perforated zone in the Flora Vista Mesaverde formation. The perforated zone is a sandstone which is permeable enough to readily accept fluids. Expected injection rates will average 100 BWPD to a maximum of 250 - 500 BWPD. Proposed average injection pressures are 1100 psi to a maximum of 2000 psi. The system is closed.

The Ojo Alamo formation is an underground source of drinking water. The depth of the zone is 0' to 320'. There is a large distance between the Ojo Alamo and the Flora Vista Mesaverde formation. Based on available geological evidence no faults or breaks are evident within the area of review.

After a door to door survey, it was discovered that residents close to the Johnson Gas Com E No. 1 are connected to city water for domestic use. Analysis for fresh water wells in the area of review are attached. A water analysis comparison between the injection fluid (So. Ute B-3) and receiving formation water (Osborn 1-22) reveals no significant scaling tendencies when the waters are mixed.

In compliance with the Form C-108, find attached an original and one copy with each of the following:

Attachment No:

1. "Well Location and Dedication Plat" (NMOCD Form C-102)

Page 2
January 23, 1985
File: TKA-6-400.1

2. Location map showing all wells and leases within two miles of the proposed injection well
3. List of names and addresses of outside operated wells and lease owners within the one-half mile area of review
4. A copy of the letter sent to all offset operators and surface land owners notifying them of our intent to convert to a disposal well
5. Newspaper copy in Public Notice Section
6. Water Analysis for Montoya water well
7. Water Analysis for Curry water well
8. Water Analysis for Southern Ute B No. 3, sample of injection fluid
9. Water Analysis for Osborn 1-22, receiving formation
10. Computer analysis of compatibility of Southern Ute B No. 3 and Osborn 1-22
11. Injection well Data Sheet for Johnson Gas Com E No. 1
12. "Well Completion or Recompletion Report and Log" (Form C-105)
13. Tabulation of data for Johnson Gas com E No. 1
14. Tabulation of data for Hancock Gas Com No. 1
15. Tabulation of data for Johnson Gas Com D No. 1
16. Tabulation of data for the Johnson Gas Com D No. 1E
17. Tabulation of data for State Gas Unit C No. 1
18. Schematic of Plugging Detail of State Gas Unit C No. 1
19. Certified mail receipt sent to those listed in Attachment No. 3. Packets contained copy of application.

WJ. Holcomb
VAC/ct *TRH*

AM7

APPLICATION FOR AUTHORIZATION TO INJECT

Case 8506

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no

II. Operator: AMOCO PRODUCTION COMPANY

Address: 501 AIRPORT DRIVE FARMINGTON, NEW MEXICO 87417

Contact party: RANDY RICKFORD Phone: 325-8841

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: W. J. HOLCOMB Title: DISTRICT MANAGER

Signature: W. J. Holcomb TRA Date: 1-14-85

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-72

All distances must be from the outer boundaries of the Section.

Operator AMOCO PRODUCTION COMPANY			Lease JOHNSON GAS COM "E"		Well No. 1
Unit Letter D	Section 15	Township 30N	Range 12W	County San Juan	
Actual Postage Location of Well: 1100 feet from the North line and 990 feet from the West line					
Ground Level Elev. 5701'	Producing Formation Mesaverde		Pool Flora Vista Mesaverde		Dedicated Acreage: 320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.

RECEIVED
AUG 25 1981
FARMINGTON
DISTRICT

been consolidated

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Original Signed By
W. L. Peterson

Name

W. L. PETERSON

Position

DISTRICT ENGINEER

Company

AMOCO PRODUCTION COMPANY

Date

AUGUST 17, 1981

I hereby certify that the well location shown on this plot was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

May 16, 1979

Registered Professional Engineer
in Oil Field Surveying

Original Signed By:

Fred B. Kerr Jr.

Certificate No.

3950

ACCEPTED FOR RECORD

AUG 21 1981

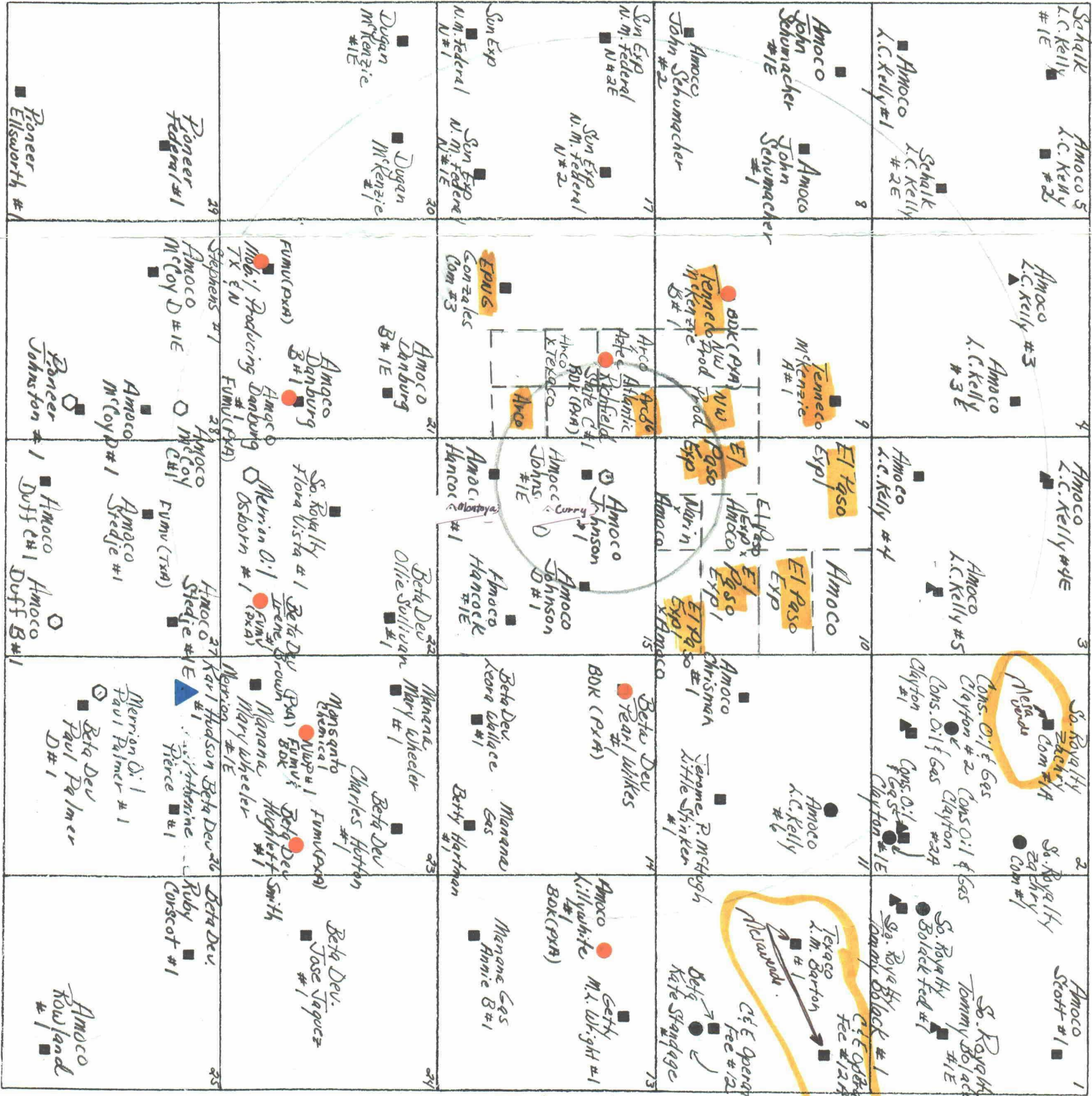
FARMINGTON DISTRICT

BY

RB

OPERATOR

R12W



T
30
N

- DOMESTIC WATER WELL
- PLUGGED AND ABANDONED WELL
- BASIN DAKOTA
- BLANCO MESAVERDE
- FLORA VISTA GALLUP
- FLORA VISTA MESAVERDE
- SALT WATER DISPOSAL

NOTE: SECTION 10
SESW AMOCO OWNS 100 FT > MESAVERDE
C 1/2 SE 1/4 AMOCO OWNS 100 FT >
MESAVERDE
NE, SW AMOCO OWNS 100 FT > MESAVERDE

Addressee List

El Paso Exploration
P. O. Box 1492
El Paso, TX 79999

Tenneco
Attn: Lee Freeman
P. O. Box 3249
Englewood, CO 80155

Arco
P. O. Box 5540
Denver, CO 80217

El Paso Natural Gas
P. O. Box 4289
Farmington, NM 87401

Texaco
P. O. Box 2100
Denver, CO 80201
January 11, 1985

Northwest Pipeline
Attn: Wendell Carrothers
P. O. Box 8900
Salt Lake City, UT 84108-0900

Southland Royalty
1000 Fort Worth Club Tower
Fort Worth, TX 76102

Minerals Management Service
Branch of Oil & Gas Operation
Attn: Arlen Hiner
Petroleum Club Plaza
Farmington, NM 87401

January 11, 1985

(See Attached Addressee List)

File: TKA-7-400.1

Proposed Conversion of Johnson Gas Com E No. 1
to a Water Disposal Well, San Juan County, New Mexico

Dear Sir:

This is to advise you that the Farmington District Office of Amoco Production Company is requesting administrative approval from the Division Director of the New Mexico Oil Conservation Division to convert to a disposal well the:

Johnson Gas Com E No. 1
1100' FNL x 990' FWL
Section 15, T30N, R10W,
San Juan County, New Mexico

This well is completed in the Flora Vista Mesaverde pool. Intended injection rates will average between 250 and 500 barrels per day at pressures of 1100 to 2000 pounds per square inch.

Find attached a copy of the Application C-108, that is being submitted. Please note that you have 15 days from the date this application was mailed to file any objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, NM 87501.

Sincerely,

BJW/ct

AM7

Addressee List

El Paso Exploration
P. O. Box 1492
El Paso, TX 79999

Tenneco
Attn: Lee Freeman
P. O. Box 3249
Englewood, CO 80155

Arco
P. O. Box 5540
Denver, CO 80217

El Paso Natural Gas
P. O. Box 4289
Farmington, NM 87401

Texaco
P. O. Box 2100
Denver, CO 80201
January 11, 1985

Northwest Pipeline
Attn: Wendell Carrothers
P. O. Box 8900
Salt Lake City, UT 84108-0900

Southland Royalty
1000 Fort Worth Club Tower
Fort Worth, TX 76102

Minerals Management Service
Branch of Oil & Gas Operation
Attn: Arlen Hiner
Petroleum Club Plaza
Farmington, NM 87401

201 LEGALS

NOTICE

Notice is hereby given that Amoco Production Company, 501 Airport Drive, Farmington, New Mexico 87401, 505-325-8841, Attn: Randy Rickford, intends to convert the Johnson Gas Com E No. 1 to a water disposal well. Application will be filed with the New Mexico Oil Conservation Division.

The Johnson Gas Com E No. 1 is located in the NW/4 NW/4 of Section 15, Township 30 North, Range 12 West, NMPM. The well is drilled to a total depth of 4750 feet in to the Mesaverde formation. Five hundred barrels per day at 2000 pounds per square inch are the maximum calculated injection rates.

Any person, firm, association, or corporation, of the State of New Mexico or the United States of America, deeming that the granting of the above application will impair or be detrimental to their water rights, may protest in writing the proposal set forth in said application. The protest shall set forth in writing all protestant's reasons why the application should not be approved and must be filed with the Oil and Gas Conservation Division, P.O. Box 2068, Santa Fe, New Mexico 87501 within 15 days after the date of last publication of this notice.

Legal No. 16295 published in the Farmington Daily Times, Farmington, New Mexico on Sundays, December 23 and 30, 1984 and January 6, 1985.

Water Analysis Report

DATE December 21, 1984

PAGE 1 of 1

LABORATORY No. 4-437

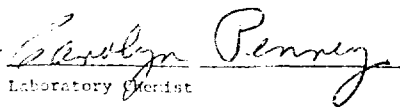
Service to: AMOCO PRODUCTION COMPANY
 Address: 501 Airport Drive
Farmington, NM 87401
 Attention: Virginia Cresswell
 Sample from: Well water for stock
use - Montoya
 Type of Sample: ☒ Grab ☐ Composite Preserved: ☐ Yes ☒ No
 Date Collected: 12/3/84 Time: _____

Collected by: J. R. Gonzales 12-03-84
 Date Received: 12/19/84 Time: 4:00 p.m.
 Delivered by: _____
 Received by: _____
 Comments: Iron appeared to be present.

55 feet deep
30.12.15.343

Parameter	Conc. ¹	lbs per day	Date Begun	Date Completed	Analyst	Q ₂	R ₂
Acidity (CaCO ₃)							
Alk. (CaCO ₃)	180		12/2012/20	CP		1	
Chloride							
Chlorine (Free)							
Chloride	4.9		12/2012/20	CP		1	
Conductivity	650 μ S		12/2012/20	CP		1	
Fluoride							
Hardness (CaCO ₃)							
Nitrogen, Total							
Nitrate (N)	0.650		12/2012/20	CP		1	
Ammonia							
Oil and Grease							
Oxygen, Diss.							
pH	7.54 units		12/2012/20	CP		-	
Phenols							
Phosphate, Ortho							
Solids, Total	478		12/2012/20	CP		1	
Dissolved							
Suspended							
Settleable	ml/l						
Sulfur, Sulfate	185		12/2012/20	CP		1	
Sulfide							
Temperature	20 °C						
TSS							
Turbidity	FTU						

Parameter	Conc. ¹	lbs per day	Date Begun	Date Completed	Analyst	Q ₂	R ₂
Arsenic							
Barium							
Cadmium							
Calcium	110		12/2012/20	CP		1	
Chromium, Hex							
Total							
Iron, Dissolved							
Total							
Lead							
Magnesium	11.3		12/2012/20	CP		1	
Manganese							
Mercury							
Molybdenum							
Potassium							
Selenium							
Silver							
Sodium	19.7		12/2012/20	CP		1	
Strontium							
Zinc							


 Laboratory Chemist

Senior Chemist

¹Unless otherwise stated, all data is reported in units of mg/l or ppm.

²Indicates if routine quality assurance check was performed on parameter. D=duplicate; S=spike.

³See attached list of methodology references.

⁴Indicates field measurements.

As a mutual protection to clients, the public, and ourselves, all reports are submitted as the confidential property of clients. Authorization for release of this information to third parties, without written consent from or regarding our reports is reserved.

333 East Main
Farmington
New Mexico
87401
505/327-3311



Water Analysis Report

DATE: December 7, 1984

PAGE:

LABORATORY No. 4-431 (2)

Service to: Amoco Production Company
Address: 501 Airport Drive
Farmington, NM 87401
Attention: Virginia Cresswell
Sample from: Domestic water well used for animals
(San Juan County) Curry
Type of Sample: XXGrab ()Composite Preserved: ()Yes XXNo
Date Collected: _____ Time: _____

Collected by: J.R. Gonzales 12-03-84
Date Received: 12/5/84 Time: 2:00 P.M.
Delivered by: _____
Received by: C. Penney
Comments: Iron appeared to be present.

183' feet deep
CR 3450 Bx 88 Aztec, NM

Parameter	Conc. 1	lbs per day	Date Begun	Date Completed	Ana-lyst	Q, A ²	R e f ³
Acidity (CaCO ₃)							
Alk. (CaCO ₃)	1,860		12/6	12/6	CP		1
Bicarbonate	(454)						
Carbonate							
Hydronide							
BOD ₅							
Chloride	88.1		12/6	12/6	CP		1
Chlorine (Free)							
COD							
Conductivity	3,470 $\mu\Omega$		12/6	12/6	CP		1
Cyanide (Free)							
Fluor	MGD						
Fluoride							
Hardness (CaCO ₃)							
Nitrogen, Total							
Nitrate (N)	0.10		12/6	12/6	CP		1
Ammonia							
Oil and Grease							
Oxygen, Diss.							
pH	7.47 ^{mits}		12/6	12/6	CP		-
Phenols							
Phosphate, Ortho							
Solids, Total	3,554		12/6	12/7	CP		1
Dissolved							
Suspended							
Settleable	ml/l						
Sulfur, Sulfate	2,000		12/6	12/6	CP		1
Sulfide							
Temperature	°C						
TSS							
Turbidity	FTU						

Parameter	Conc. 1	lbs per day	Date Begun	Date Completed	Ana-lyst	Q, A ²	R e f ³
Arsenic							
Barium							
Cadmium							
Calcium	515		12/6	12/6	CP		1
Chromium, Hex							
Total							
Iron, Dissolved							
Total							
Lead							
Magnesium	55.2		12/7	12/7	CP		1
Manganese							
Mercury							
Molybdenum							
Potassium							
Selenium							
Silver							
Sodium	440		12/6	12/6	CP		1
Strontium							
Zinc							

C. Penney
Laboratory Chemist

Senior Chemist

Unless otherwise stated, all data is reported in units of mg/l or ppm.
Indicates if routine quality assurance check was performed on parameter. P-duplicate; S-spike.
See attached list of methodology references.
Indicates field measurements.

In a mutual protection to clients, the public, and ourselves, all reports are submitted as the confidential property of clients. Some restriction on publication of information, or extracts, from or reuse of our reports is required pending.



TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

TECH

ATTACHMENT NO. 8

OIL-FIELD WATER ANALYSIS REPORT

REPORTED TO: Amoco Production Company

DATE: February 7, 1984

FURNISHED BY: Tim Clawson

COPIES TO:

LABORATORY No. 4-262 (3)

PAGE 1/1

Company Amoco Production Company		Sample No. 2		Date Sampled 1/25/84	
Field Wildcat	Legal Description NW/4, Sec 21, T33N, R7W		County or Parish La Plata		State Colorado
Lease or Unit Souther Ute Gas Co B	Well 3	Depth 2423'	Formation Fruitland	Water, B/D 140	
Type of Water (Produced, Supply, etc.) Produced		Sampling Point Separator		Sampled By Mark Nester Ted's Field Service	

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na	1760	77
Calcium, Ca	21	1
Magnesium, Mg	8	1
Barium, Ba		
Potassium, K	10	<1

ANIONS

Chloride, Cl	2	<1
Sulfate, SO ₄	17	<1
Carbonate, CO ₃	none	none
Bicarbonate, HCO ₃	2286	37

Total Dissolved Solids
4548

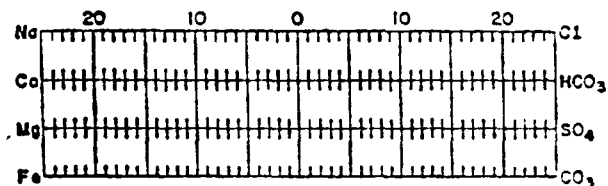
Iron, Fe (total)
Sulfide, as H₂S

OTHER PROPERTIES

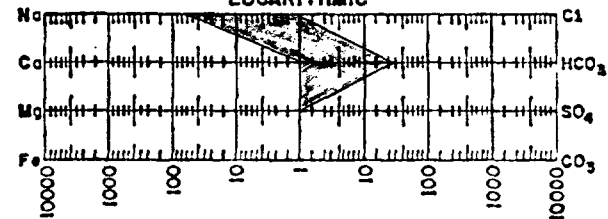
pH	8.28
Specific Gravity, 60/60 F.	1.007
Resistivity (ohm-meters) 70 F.	1.68

WATER PATTERNS — me/l

STANDARD



LOGARITHMIC



Date Received 1/27/84	Preserved	Date Analyzed 2/2/84 - 2/6/84	Analyzed By Carolyn Penney
--------------------------	-----------	----------------------------------	-------------------------------

REMARKS & RECOMMENDATIONS:

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

TECH, Inc.

By

[Signature]

STA OLIN OIL AND GAS COMPANY

RESEARCH DEPARTMENT

WATER ANALYSIS

ATTACHMENT NO. 9

Uver

APR 23 1962

J. Glenn Turner
 Lease Turner - Osborn Well No. 1-22 Lab. No. T-14,960
 Field Flora Vista Mesaverde County San Juan State New Mexico
 Quarter or Survey SW/4 Blk. 22 T. 30N R. 12W
 Exact Location _____ Sample Series No. HG-17
 Producing Stratum Cliffhouse PBTD _____ Total Depth 3396
 Stratum Yielding Sample Cliffhouse From 3332 To 3396
 Condition of Well _____
 Sample Collected From Separator Method Used _____
 Collected by Don S. Barnes Date Collected 4-3-62 Date Received 4-9-62
 Transmittal Letter by L. O. Speer, Jr. Date 4-3-62 File N-1124-535.11

Radicle	Per Cent by Analysis	(a) P. P. M.	(b)	(a) X (b)	Per Cent Reacting Value	Calculated Compound	P. P. M.
Na	37.53	12,446	.0435	540.83	48.80	Na ₂ SO ₄	646
Ca	.54	180	.0499	8.98	.81	NaCl	29,822
Mg	.16	52	.0822	4.27	.39	Na ₂ CO ₃	
Fe						NaHCO ₃	1,827
						CaSO ₄	611
						CaCl ₂	
SO ₄	3.24	1,073	.0208	22.32	2.01	CaCO ₃	
Cl	54.53	18,085	.0282	510.00	46.03	Ca(HCO ₃) ₂	
CO ₂		0	.0333			MgSO ₄	257
HCO ₃	4.00	1,327	.0164	21.76	1.96	MgCl ₂	
H ₂ S						MgCO ₃	
						Mg(HCO ₃) ₂	
Total solids as a summation of radicles						33,163	P.P.M.
Total solids by evaporation and ignition of residue at low red heat						32,530	P.P.M.
Sample as received: Resistivity: ohms/M ² M .196 at 77°F. pH Value 7.6 Specific Gravity 60°/60°F. 1.025							

PROPERTIES OF REACTION IN PER CENT

PRIMARY SALINITY: SO₄ + Cl = with equal value Na (K) = 96.08 %
 SECONDARY SALINITY: If SO₄ + Cl is greater than Na (K) = %
 Then SO₄ + Cl = with equal value of Ca + Mg = %
 PRIMARY ALKALINITY: Excess Na (K) over SO₄ + Cl = with equal value of CO₂ + S = 1.52 %
 SECONDARY ALKALINITY: Excess Ca + Mg over SO₄ + Cl = with equal value of CO₂ + = 2.40 %
 CHLORIDE SALINITY: Cl ÷ (SO₄ + Cl) = X 100% = 95.82
 SULPHATE SALINITY: SO₄ ÷ (SO₄ + Cl) = X 100% = 4.18

NOTE: Multiply Parts per Million by .0583 to obtain Grains per Gallon.

REMARKS: Resistivity ohms/M²M .114 at 140° F.

J. L. Hoyt, Jr.
 W. T. Smith
 T. M. Curtis
 L. O. Speer, Jr.
 G. R. Newton (2)

V m2

Analyst James S. Smith Date 4-18-62

SCALE PREDICTION, MIXTURE NO. 1: 50.0 PERCENT OSBORN 1-22
50.0 PERCENT SO. UTE GAS COM B 3

CALCULATED COMPOSITION OF MIXTURE NO. 1 IN MG/L:

NA)=	7103.	(CL)=	9044.
CA)=	101.	(SO4)=	545.
MG)=	30.	(HCO3)=	1807.
BA)=	0.	(CO3)=	0.
SR)=	0.	PH=	7.8

MOLAL IONIC STRENGTH= 0.317

SPECIFIC GRAVITY= 1.013

SCALING TENDENCIES(MG/L):

TEMP(F)	P(Psi)	CO2(Psi)	CALC PH	CASO4	SCALE INDEX(MG/L)		
					BASO4	SRSO4	CACO3
80.	14.7	0.000	9.8	-3095.	-0.	-156.	223.
110.	14.7	0.000	9.8	-2320.	-0.	-172.	227.
140.	14.7	0.000	9.7	-1767.	-0.	-140.	232.
170.	14.7	0.000	9.7	-1346.	-0.	-58.	236.
200.	14.7	0.000	9.7	-1014.	-0.	-33.	239.

SCALE INDEX = ANALYZED CONCENTRATION - EQUILIBRIUM SOLUBILITY

A POSITIVE SCALE INDEX INDICATES SCALE PRECIPITATION CAN OCCUR WITH
THE MAGNITUDE OF THE SCALE INDEX INDICATING THE MAXIMUM AMOUNT WHICH
COULD PRECIPITATE. A NEGATIVE SCALE INDEX INDICATES THE WATER IS
UNSATURATED AND NO SCALE PRECIPITATION WILL OCCUR.

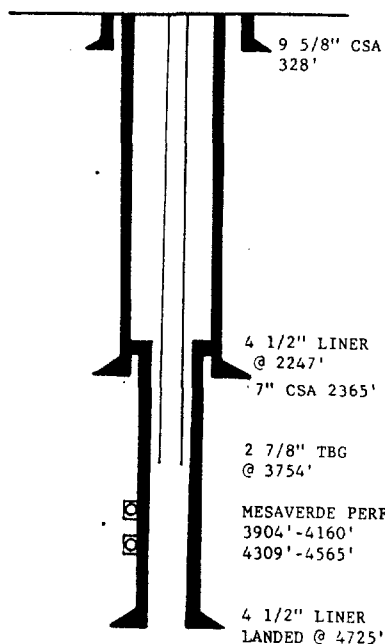
CALC PH = CALCULATED PH OF BRINE AT EQUILIBRIUM WITH CO2 AT GIVEN T, P, PCO2.

INJECTION WELL DATA SHEET

ATTACHMENT NO. 11

Amoco Production Company		Johnson Gas Com E	
Well No. 1	1100' PNL x 990' FWL	Section 15	T30N R12W
Well No.	FOOTAGE LOCATION	SECTION	TOWNSHIP RANGE

Schematic



Tabular Data

Surface Casing

Size 9 5/8 " Cemented with 300 sx.
 TOC Surface feet determined by return during cmt job
 Hole size 12 1/4"

Intermediate Casing

Size 7 " Cemented with 390 sx.
 TOC Surface feet determined by return during cmt job
 Hole size 8 3/4"

XXXXXXX liner

Size 4 1/2 " Cemented with 360 sx.
 TOC Surface feet determined by return during cmt job
 Hole size _____
 Total depth 4725'

Injection interval

3904' feet to 4565' feet
 (perforated or open-hole, indicate which)

MESAVERDE PERFS:
3904'-4160'
4309'-4565'

4 1/2" LINER
LANDED @ 4725'

Tubing size 2 7/8" lined with None (material) set in a
Baker Lockset retrievable packer at 3754' feet
 (brand and model)
 (or describe any other casing-tubing seal).

Other Data

- Name of the injection formation Mesaverde
- Name of Field or Pool (if applicable) Flora Vista Mesaverde
- Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? Natural Gas Well
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) None
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.
Pictured Cliffs top @ 1950'
Gallup top @ 6002'

SUBMIT IN DUPLICATE

Form approved.
Budget Bureau No. 42-R355.5.

RECEIVED

1a. TYPE OF WELL: ☐ OIL WELL ☒ GAS WELL ☐ DRY ☐ OTHER ☐

1b. TYPE OF COMPLETION: ☒ NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESER. ☐

2. NAME OF OPERATOR: Amoco Production Company

3. ADDRESS OF OPERATOR: 501 Airport Drive Farmington, NM 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements):
 At surface: 1100' FNL x 990' FWL, Section 15, T30N, R12W
 At top prod. interval reported below: Same
 At total depth: Same

14. PERMIT NO. _____ DATE ISSUED _____

15. DATE SPUDDED: 7-1-79

16. DATE T.D. REACHED: 7-13-79

17. DATE COMPL. (Ready to prod.): 2-11-80

18. ELEVATIONS (OF, AER, RT, OR, ETC.): 5701' GL, 5714' KB

19. ELEV. CASINGHEAD: _____

20. TOTAL DEPTH, MD & TVD: 4726'

21. PLUG, BACK T.D., MD & TVD: 4620'

22. IF MULTIPLE COMPL., HOW MANY: _____

23. INTERVALS DRILLED BY: _____

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 3904-4565', Mesaverde

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Induction Electric, Induction Ray, Acoustic Density & Neutron Borehole Compensated, Induction Electric, Cement Bong Log

27. WAS WELL CORRED: No

7. UNIT AGREEMENT NAME: _____

8. FARM OR LEASE NAME: Johnson Gas Com "E"

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Flora Vista Mesaverde

11. SEC., T., R. M., OR BLOCK AND SURVEY OR AREA: NW/4 NW/4 Section 15, T30N, R12W

12. COUNTY OR PARISH: San Juan

13. STATE: NM

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"	32.3#	327'	12-1/4"	300 SX	-----
7"	20.0#	2365'	8-3/4"	390 SX	-----

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
4-1/2"	2247'	4725'	360	

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	4561'	

31. PERFORATION RECORD (Interval, size and number)

3904-09', 3912-24', 3937-41', 3944-57', 3980-95', 4026-38', 4108-13', 4143-60' x 2 SPF, 166 holes.

4309-12', 4326-30', 4412-15', 4490-4500', 4505-07', 4510-13', 4516-19', 4541-44', 4333-37', 4341-44', 4350-52', 4355-72', 4561-65' x 2 SPF, 122 holes.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
3904-4160'	126,000# sand, 70,114 gal fra
4309-4565'	82,400# sand, 45,800 gal frac

33. PRODUCTION

DATE FIRST PRODUCTION: 2-11-80

PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump): Flowing

WELL STATUS (Producing or shut-in): SI

DATE OF TEST: 2-11-80

HOURS TESTED: 24

CHOKER SIZE: 17/64

PROD'N. FOR TEST PERIOD: _____

OIL—BBL.: _____

GAS—MCF.: 79

WATER—BBL.: _____

GAS-OIL RATIO: _____

FLOW. TUBING PRESS.: _____

CASING PRESSURE: _____

CALCULATED 24-HOUR RATE: _____

OIL—BBL.: _____

GAS—MCF.: 79

WATER—BBL.: _____

OIL GRAVITY-API (CORR.): _____

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): To be sold

35. LIST OF ATTACHMENTS: _____

86. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED E. E. SVOBODA TITLE Dist. Adm. Supvr.

DATE FEB 28 1980
2-20-80

*** (See Instructions and Spaces for Additional Data on Reverse Side)**

FARMINGTON DISTRICT
BY McKichers

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 83, below regarding separate reports for separate completions. If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be labeled on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF: CORED INTERVALS, AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES			38. GEOLOGIC MARKERS	
FORMATION	TOP	BOTTOM	NAME	STAGE, DEPTH TO TOOL-HEAD DEPTH
Point Lookout	4325			
Menefee	3728	4325		
Cliffhouse	3631	3728		
Lewis Shale	3196	3621		
Chacra	2773	3196		
Lewis Shale	2186	2773		
Pictured Cliffs	1960	2186		
Fruitland	1688	1960		

044 - USGS, Farmington
1 - G. J. Ross, Denver
1 - Open
1 - PL. Hunt, Denver

DATE January 2, 1985WELL COMPLETION AND WORKOVER DATA

WELL NAME: Johnson Gas Com E No. 1
 LOCATION: 1100' ENL x 990' FWL Sec. 15 T30N R12W
San Juan County, New Mexico

ELEVATION: _____ GL: 5701' KB: 5714'
 TD: 4750' PBD: 4461'

CASING & CEMENT: 12 1/4" hole 9 5/8" 32.3# CSA 327' x 300 sx. cmt.
8 3/4" hole 7" 20.0# CSA 2365' x 390 sx cmt.

COMPLETION DATE: 2-11-80 ~~FIRST DELIVERY~~

COMPLETION INTERVAL: Flora Vista Mesaverde

PERFORATIONS: 3904'-4160' 4309'-4565'

~~SPECIAL EQUIPMENT~~

~~INITIAL POTENTIAL~~

~~CORE INTERVAL~~

~~DST RESULTS~~

~~LOGS RUN~~

ORIGINAL COMPLETION: 3904'-4160' - 126,000 lb sn x 70,114 gal frac fluid
4309'-4565' - 82,400 lb sn x 45,800 gal frac fluid

~~WORKOVERS AND EQUIPMENT CHANGES~~

DATE 12-20-84WELL COMPLETION AND WORKOVER DATA

WELL NAME: Hancock Gas Unit No. 1
 LOCATION: 1850' FSL x 810' FWL Sec. 15 T30N R12 W
San Juan County, New Mexico

ELEVATION: GL: 5650' KB: 5662'
 TD: 6680' PBD: 6645'

CASING & CEMENT: 12-1/4" hole 8 5/8" CSA 315' x 250 sx cmt.
7-7/8" hole 4 1/2" CAS 6680' x 375 sx cmt.

COMPLETION DATE: 11-12-60 ~~FIRST DELIVERY~~: _____

COMPLETION INTERVAL: Basin Dakota

PERFORATIONS: 6488'-6495' 6517'-6520'

~~SPECIAL EQUIPMENT~~: _____

~~INITIAL POTENTIAL~~: _____

~~CORE INTERVAL~~: _____

~~DS RESULTS~~: _____

~~LOGS RUN~~: _____

ORIGINAL COMPLETION: 6488'-6520' 40,000 gals wt x 40,000 lbs sn. BDP 1300
ATP 2300 Air 38 BPM

~~WORKOVERS AND EQUIPMENT CHANGES~~: _____

DATE 12/20/84WELL COMPLETION AND WORKOVER DATA

WELL NAME: Johnson Gas Unit D No. 1
 LOCATION: 1650' FNL x 1650' FEL Sec. 15 T30N R12W
San Juan County, New Mexico

ELEVATION: _____ GL: 5673' KB: 5684'
 TD: 6661' PBD: 6630'

CASING & CEMENT: 12 1/4" hole 8 5/8" 22.7# CSA 360' x 250 sx cmt.
7 7/8" hole 4 1/2" 9.5# CSA 6683' x 925 sx cmt.

COMPLETION DATE: 9-19-61 ~~FIRST DELIVERY~~: _____

COMPLETION INTERVAL: Basin Dakota

PERFORATIONS: 6517'-6527'

~~SPECIAL EQUIPMENT~~: _____

~~INITIAL POTENTIAL~~: _____

~~CORE INTERVAL~~: _____

~~TEST RESULTS~~: _____

~~LOGS RUN~~: _____

ORIGINAL COMPLETION: 6517'-6527' 40,000 gals wt containing 1% CaCl x 7 lbs
J-2 additive per 1000 gals x 40,000 lbs. sn. BDP 1100 ATP 2600 Air 34 RPM

WORKOVERS AND EQUIPMENT CHANGES: _____

DATE 12/20/84WELL COMPLETION AND WORKOVER DATA

WELL NAME: Johnson Gas Com D No. 1E
LOCATION: 1670' FNL x 840' FWL Sec. 15 T30N R12W
San Juan County, New Mexico

ELEVATION: _____ GL: 5703' KB: _____
TD: 6715' PBD: 6669'

CASING & CEMENT: 12 1/2" hole 8 5/8" 24# CSA 326' x 300 sx cmt.
7 7/8" hole 5 1/2" 15.5# CSA 6709' x 305 sx cmt.
280 sx x 285 sx cmt.

COMPLETION DATE: 3-25-82 ~~FIRST DELIVERY~~: _____

COMPLETION INTERVAL: Basin Dakota

PERFORATIONS: 6528'-6555' 6592'-6626' 6580'-6584'

~~SPECIAL EQUIPMENT~~: _____

~~INITIAL POTENTIAL~~: _____

~~CORE INTERVAL~~: _____

~~DST RESULTS~~: _____

~~LOGS RUN~~: _____

ORIGINAL COMPLETION: 6580'-6626' 21,000 gals 30 lb. GDX-7 5% Con x 35,000
1b 20-40 sn. 6528'-6555' 48,000 gals 40 lb GDX-7 5% Con x 128,250 1b
20-40 sn.

WORKOVERS AND EQUIPMENT CHANGES: _____

DATE 12-20-84

WELL COMPLETION AND WORKOVER DATA

WELL NAME: State Gas Unit C No. 1
 LOCATION: 1190' FNL x 1850' FEL Sec. 16 T30N R12W
 San Juan County, New Mexico

ELEVATION: GL: 5661' KB: 5671'
 TD: 6719' PBD: 6647'

CASING & CEMENT: 12 1/4" hole 8 5/8" 24# CSA 322' x 225ft³ cmt.
 7 7/8" hole 4 1/2" 9.5 & 11.6# CSA 6691' x 690 ft³
 x 685 ft³ cmt.

COMPLETION DATE: 10-26-61 ~~WYSX DELIVERY~~

COMPLETION INTERVAL: Basin Dakota

PERFORATIONS: 6450'-6464' 6564'-6580'

~~WYSX EQUIPMENT~~

~~INDIVIDUAL POTENTIAL~~

~~CORE INTERVAL~~

~~DSTX RESULTS~~

~~LOGS RUN~~

ORIGINAL COMPLETION: 6564'-6580- 400 gals SSS acid. 50,000 lb 20-40 sn in
 53,000 gals water plus 1% Air 27 BPM
 6450'-6464' 50,000 lb 20-40 sn in 56,700 gals water plus 1% CaCl x 1100 lb
 J-98 FBDP 2400/2000 Max TP 3500 Air 29 BPM

~~WORKOVERS AND EQUIPMENT CHANGES~~

GL TO 100' X 10 FT³ CMT

325' TO 525' X 20 FT³ CMT

3375' TO 3575' X 20 FT³ CMT

PERFORATIONS:

6450'-6464'

6564'-6580'

6300' TO 6600' X 30 FT³ CMT

TD 6719'

PBD 6647

8 5/8" 24# CSG IN 12 1/4" HOLE. CSG SET AT 322' X 225 SX CMT.

4 1/2" 9.5# & 11.5# CSG IN 7 7/8" HOLE. CSG SET AT 6691' X 1375 FT³ CMT. CMT THRU STAGE TOOL AT 2163' X 686 FT³ CMT.

Amoco Production Company

SCALE:

STATE GAS UNIT C NO. 1

DRG.
NO.

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.

2. ☐ Restricted Delivery.

3. Article Addressed to: *HR CO
P.O. Box 5540
Denver, CO 80217*

4. Type of Service: ☐ Registered ☐ Insured ☐ Certified ☐ COD ☐ Express Mail *P553 443 466*

Article Number

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee *[Signature]*

6. Signature - Agent *[Signature]*

7. Date of Delivery *[Signature]*

8. Addressee's Address (ONLY if requested and fee paid)

1983-5

1983-5

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.

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1. ☒ Show to whom, date and address of delivery.

2. ☐ Restricted Delivery.

3. Article Addressed to: *1cmeco
Mr. Lee Freeman
P.O. Box 3245
Englewood, CO 80155*

4. Type of Service: ☐ Registered ☐ Insured ☐ Certified ☐ COD ☐ Express Mail *P553 443 465*

Article Number

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee *[Signature]*

6. Signature - Agent *[Signature]*

7. Date of Delivery *[Signature]*

8. Addressee's Address (ONLY if requested and fee paid)

614250 w/bw dr

Englewood Colo 80111

1983-5

1983-5

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
*Southland Royalty Club Tower
1000 Fort Worth Club Tower
Fort Worth, TX 76102*

4. Type of Service: Registered ☐ Insured ☐ COD ☐ Certified ☐ Express Mail ☒
Article Number *7553443404*

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee *[Signature]*
6. Signature - Agent *[Signature]*
7. Date of Delivery *18 JAN 1985*

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
*Texaco
P.O. Box 2100
Denver, CO 80201*

4. Type of Service: Registered ☐ Insured ☐ COD ☐ Certified ☐ Express Mail ☒
Article Number *7553443408*

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee *[Signature]*
6. Signature - Agent *[Signature]*
7. Date of Delivery *JAN 21 1985*

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested. 1. ☒ Show to whom, date and address of delivery. 2. ☐ Restricted Delivery.	
3. Article Addressed to: <i>Minerals Management Service</i> <i>Branch of Oil & Gas Operation</i> <i>P.O. Box 443</i> <i>Attn: Helen Hiner</i> <i>Farmington NM 87401</i>	
4. Type of Service: ☐ Registered ☐ Insured ☐ Certified ☐ COD ☐ Express Mail	Article Number <i>P 553 443 410</i>
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature - Addressee X <i>Mike Minkler</i>	
6. Signature - Agent X	
7. Date of Delivery <i>JAN 16 1985</i>	
8. Addressee's Address (ONLY if requested and fee paid)	

SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested. 1. ☒ Show to whom, date and address of delivery. 2. ☐ Restricted Delivery.	
3. Article Addressed to: <i>El Paso Exploration</i> <i>P.O. Box 442</i> <i>El Paso, TX 79999</i>	
4. Type of Service: ☐ Registered ☐ Insured ☐ Certified ☐ COD ☐ Express Mail	Article Number <i>P 553 443 412</i>
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature - Addressee X <i>[Signature]</i>	
6. Signature - Agent X <i>[Signature]</i>	
7. Date of Delivery <i>JAN 16 1985</i>	
8. Addressee's Address (ONLY if requested and fee paid)	

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

Article addressed to:
Northwest Pipeline
P.O. Box 8900
Hwy. Wendell Paroquets
Salt Lake City, Utah 84108-0900

4. Type of Service: Article Number
☐ Registered ☐ Insured
☒ Certified ☐ COD *P 553 443 409*
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X
6. Signature - Agent
X *Raymond*
7. Date of Delivery
X *JAN 16 1985*
8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

Article addressed to:
El Paso Natural Gas
P.O. Box 4489
Farmington, NM 87401

4. Type of Service: Article Number
☐ Registered ☐ Insured
☒ Certified ☐ COD *P 553 443 407*
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X
6. Signature - Agent
X *Raymond*
7. Date of Delivery
X *JAN 16 1985*
8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

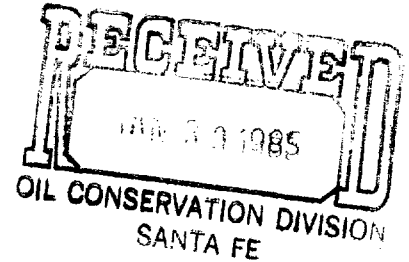


Amoco Production Company

Petroleum Center Building
501 Airport Drive
Farmington, New Mexico 87401
505-325-8841

W. J. Holcomb
District Manager

January 28, 1985



Oil Conservation Division
Attn: David Catanach
P. O. Box 2088
Santa, Fe, NM 87501

Case 8506

File: TKA-20-400.1

Gentlemen:

Conversion of Johnson Gas Com E No. 1
to a Water Disposal Well

Amoco Production Company is revising the water disposal application for the Johnson Gas Com E No. 1 dated January 23, 1985, File: TKA-6-400.1.

The proposed injection interval (3904'-4565'), included the Menefee and Point Lookout in the Flora Vista Formation. The revision would change the injection interval to only the Menefee (3904'-4106'). Log calculations show that the Menefee is 100% water saturated. To isolate the Point Lookout from injection, a permanent cast iron bridge plug would be set at 4300'. Fifty feet of Class B Neat Cement would be pumped on top of the plug. The bridge plug will be pressure tested to 3000 PSI.

If there are any questions regarding the revision, please contact Randy Rickford at 325-8841, Ext. 246.

W. J. Holcomb
VAC/ct

Enclosure

AM11

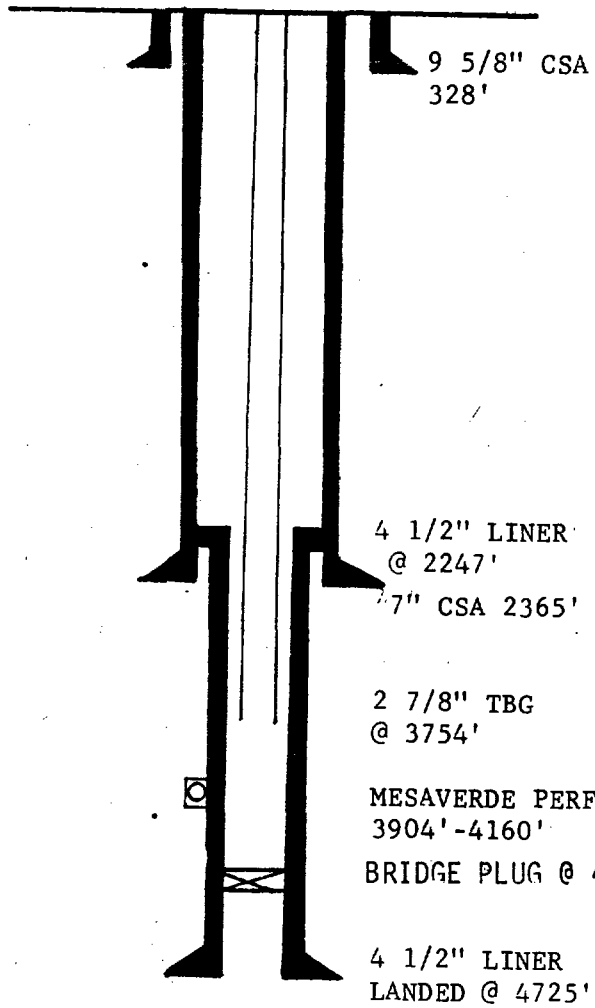
Frank Chavez has recommended
that this go to hearing because
of a questionable PA'd well.

Also, some questions about
the proposed injection zone.

INJECTION WELL DATA SHEET

Amoco Production Company		Johnson Gas Com E	
No. 1	1100 ⁺ PNL x 990 ⁺ PNL	Section 15	T30N
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP
			R12W
			RANGE

Schematic



Tabular Data

Surface Casing

Size 9 5/8 " Cemented with 300 sx.
 TOC Surface feet determined by return during cmt
 Hole size 12 1/4"

Intermediate Casing

Size 7 " Cemented with 390 sx.
 TOC Surface feet determined by return during cmt
 Hole size 8 3/4"

XXXXXXX Long string liner

Size 4 1/2 " Cemented with 360 sx.
 TOC Surface feet determined by return during cmt
 Hole size _____
 Total depth 4725'

Injection interval

3904' feet to 4160' feet
 (perforated or open-hole, indicate which)

MESAVERDE PERFS:
 3904'-4160'

BRIDGE PLUG @ 4300'

4 1/2" LINER
 LANDED @ 4725'

Tubing size 2 7/8" lined with None set in a
 (material)
Baker Lockset retrievable packer at 3754' feet.
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation Mesaverde
- Name of Field or Pool (if applicable) Flora Vista Mesaverde
- Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? Natural Gas Well
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) None
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.
Pictured Cliffs top @ 1950'
Gallup top @ 6002'