

SWD

764



**WALSH**

ENGINEERING & PRODUCTION CORP.

Petroleum Engineering Consulting  
Lease Management  
Contract Pumping

7415 East Main  
Farmington, New Mexico 87402  
(505) 327-4892 • Fax: (505) 327-9834

FEB - 9 2000

~~NEW MEXICO OIL CONSERVATION DIVISION~~  
**New Mexico Oil Conservation Division**  
**Attn. D. Catanach**  
**2040 Pacheco St.**  
**Santa Fe, NM 87505**

**January 13, 2000**

Dear Mr. Catanach,

Enclosed is the application for authorization to inject into the Cowsaround SWD #1 (Sec 16/T26N/12W) which is operated by Pendragon Energy Partners. The following application and information is arranged in the order specified by form C-108.

If you have any questions or concerns, regarding the following information please feel free to contact me anytime.

Sincerely,

**John C. Thompson**  
Engineer

### APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance  Disposal Storage  
Application qualifies for administrative approval? Yes No
- II. OPERATOR: PENDRAGON ENERGY PARTNERS  
ADDRESS: c/o Walsh Engr. & Prod. Corp.  
7415 E. Main Farmington, N.M. 87402
- CONTACT PARTY: John C. Thompson PHONE: 505 327-4892
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. NOTE (505) 320-1748  
Additional sheets may be attached if necessary. SEE APPENDIX A
- 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. SEE APPENDIX C
- 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 geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any. SEE APPENDIX A
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). SEE APPENDIX E
- \*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. SEE APPENDIX D
- 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 sources of drinking water. SEE APPENDIX F
- 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: John C. Thompson TITLE: Engineer/Agent  
SIGNATURE: [Signature] DATE: 1/13/2000

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



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Farmington, New Mexico 87402  
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## **Pendragon Energy Partners Cowsaround SWD #1**

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### **APPLICATION FOR AUTHORIZATION TO INJECT**

#### **LIST OF APPENDIXES**

<b>INJECTION WELL DATA</b>	<b>APPENDIX A</b>
<b>WELL LOCATION MAP</b>	<b>APPENDIX B</b>
<b>OFFSET WELL LOCATIONS &amp; MAP</b>	<b>APPENDIX C</b>
<b>WATER ANALYSIS</b>	<b>APPENDIX D</b>
<b>WELL LOGS</b>	<b>APPENDIX E</b>
<b>PROOF OF NOTIFICATION</b>	<b>APPENDIX F</b>

**APPLICATION FOR AUTHORIZATION TO INJECT  
FORM C-108 SUPPLEMENTAL DATA**

**Cowsaround SWD #1**

**16K-26N-12W  
2220' FSL & 1680' FWL**

- I. Water Disposal
- II. Pendragon Energy Partners  
ICO Walsh Engineering & Production Corp.  
7415 E. Main Street  
Farmington, New Mexico 87401  
  
Contact person: John Thompson
- III. Well data sheet is attached.
- IV. This not an expansion of an existing project.
- V. See attached map showing area of review and attached list of wells.
- VI. There are no wells within the area of review that penetrate the proposed Mesaverde Injection Zone.  
There are also no P&A wells within the area of review that penetrate the proposed Mesaverde Injection Zone.
- VII. Data on proposed injection operations are as follows:
  1. Average Injection Rate - 500 bwpd (.347 bbl/min)  
Maximum Injection Rate - 1500 bwpd (1.04 bbl/min)
  2. Closed system. Water would be trucked or piped into tanks on location.
  3. Average injection pressure - 745 psi  
Maximum injection pressure - 1490 psi
  4. Produced Fruitland Coal water with TDS of 30,000 to 55,000 ppm will be injected into the Mesaverde in the Cowsaround SWD #1 well. A representative analysis of the Fruitland Coal water that is to be injected is attached.
  5. Chemical analysis of the water in the Mesaverde zone will be submitted after the well has been completed.

VIII. Geologic & Lithologic data on injection zone.

1. The proposed zone of injection is in the Mesaverde Formation. The Mesa Verde Formation is from 2402' - 3939' (based on the nearest offset – Frontier #1A). See attached copy of open hole logs showing the Mesaverde Formation in the Frontier #1A (sec8/T26N/R12W).
2. Lithology – Mesaverde Formation which contains the Point Lookout, Menefee & Cliff House formations are primarily a sandstone/shale sequence w/ porosity's ranging from 8% - 16%. The permeability values range from 0.5 to 2.0 millidarcy.
3. Other than the aquifers that are contained in the surface alluvium there are no known drinking water aquifers in the area of review. There are no known water wells within the area of review.

IX. No stimulation procedures have been planned. At time of completion a step rate test will be performed to determine if the desired injection rates and pressures can be achieved without need for stimulation.

X. Open hole logs that cover the Morrison have been previously submitted to the NMOCD when the well was originally drilled.

XI. According to the *Hydrologic Report #6* published by the New Mexico Bureau of Mines & Mineral Resources, there are no known sources of potable water exist in the immediate area of the well.

XII. At the present time, geologic studies of the area do not indicate fault communication between the proposed injection zone and any underground potential sources of drinking water.

XIII. Proof of notice is attached.

XIV. Certification is signed.

**INJECTION WELL DATA SHEET**

OPERATOR: PENDRAGON ENERGY PARTNERS

WELL NAME & NUMBER: Cowsaround SWD #1 30-095-30096

WELL LOCATION: 2220' FSL & 1680' FWL K 16 26N 12W

FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

**WELLBORE SCHEMATIC**

**WELL CONSTRUCTION DATA**

Surface Casing

SEE ATTACHMENT OF WELLBORE SCHEMATIC IN APPENDIX A

Hole Size: 12-1/4" Casing Size: 8-5/8"

Cemented with: 140 sx. or 106 ft<sup>3</sup>

Top of Cement: Surface Method Determined: Circulation

**Intermediate Casing**

NONE

Hole Size: \_\_\_\_\_ Casing Size: \_\_\_\_\_

Cemented with: \_\_\_\_\_ sx. or \_\_\_\_\_ ft<sup>3</sup>

Top of Cement: \_\_\_\_\_ Method Determined: \_\_\_\_\_

**Production Casing**

Hole Size: 7-7/8" Casing Size: 5-1/2"

Cemented with: 500 sx. or 1045 ft<sup>3</sup>

Top of Cement: Surface Method Determined: Circulated

Total Depth: 4030'

**Injection Interval**

Perf. 3729 feet to 3873

(Perforated or Open Hole; indicate which)

**INJECTION WELL DATA SHEET**

Tubing Size: 2-7/8" Lining Material: Plastic

Type of Packer: Loc - Set

Packer Setting Depth: 3620'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

**Additional Data**

1. Is this a new well drilled for injection?  Yes  No

If no, for what purpose was the well originally drilled? \_\_\_\_\_

2. Name of the Injection Formation: Mesaverde

3. Name of Field or Pool (if applicable): Blanco Mesaverde

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. NO

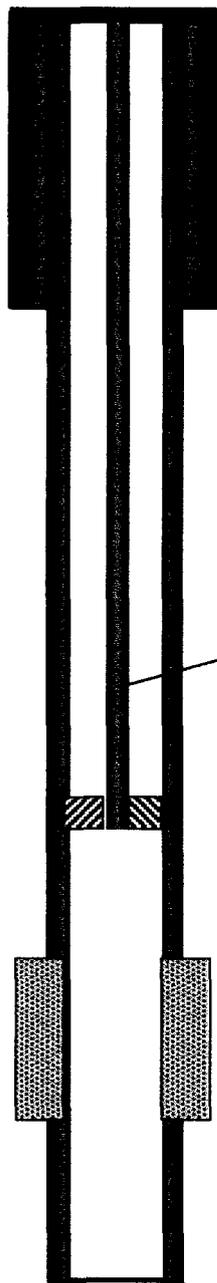
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_

Fruitland Coal (gas), Pictured Cliffs (gas)

Gallup (oil) Dakota (gas/oil)

**Cowsaround SWD #1**  
2220' FSL & 1680' FWL  
Sec 16 T26N R12W

Formation Top	
Fruitland:	934'
Pictured Cliffs:	1227'
Lewis:	1477'
Cliff House:	2042'
Menefee:	2675'
Point Lookout:	3725'
Mancos:	3939'



Surface Casing: 8-5/8" @ 200'  
Hole Size: 12-1/4"  
Cement: 140 sx circulated to surface.

Tubing: 2-7/8"

Packer set @ 3530'

Point Lookout  
Perforated Injection Zone:  
3729' - 3873'

Casing:  
Hole Size: 7-7/8"  
5-1/2", #15.5 casing @ 4030'



ENGINEERING & PRODUCTION CORP.  
Wellhead Equipment Consulting  
Lease Management  
Contract Pumping

7415 East Main  
Farmington, New Mexico 87402  
(505) 327-4892

**COMPLETION PROGNOSIS FOR  
PENDRAGON ENERGY PARTNERS  
COWSAROUND SWD #1**

Location: SE/4 Section 16 T26N R12W  
San Juan County, New Mexico

Date: January 12, 2000

Field: Mesa Verde

Surface: State  
Minerals: State

Elev: GL 6016'  
5-1/2" @ 4030'

Procedure:

**Prior to Rig (log, perforate & fracture)**

1. Install 5-1/2" frac flange.
2. RU wireline truck and run gamma ray/neutron/cement bond log. Run neutron from PBTD to top of Mesaverde. Run GR/BL to surface.
3. If bond looks OK proceed to step 4. If not, shoot 2 squeeze holes above cement top & squeeze as necessary.
4. Perforate Point Lookout sands in Mesaverde Formation 4 spf. Actual depths to be determined from Neutron log.
5. RU Stimulation Company. Pressure test pumps & lines. Fracture the Point Lookout w/ 120,000# of 12/20 sand in slickwater.

**Move in Rig (clean out, run injection string)**

6. MOL and RU completion rig. Hold safety meeting. NU well head & BOP.
7. PU 2-3/8" work string & TIH w/ notched collar on bottom.
8. Clean out to PBTD w/ "Bull Dog" type bailer & produced water.
9. TOH. PU 2-3/8"x5-1/2" packer & TIH. Set packer @ approximately 3600'. Swab sample of Mesaverde water to surface.
10. Release packer & TOH (laying down 2-3/8" workstring). PU 5-1/2"x2-7/8" plastic lined loc-set packer & RIH on 2-7/8" plastic lined tbg. Set packer @ approximately 3600'. Circulate corrosion inhibitor into casing annulus before setting packer. (note: pressure up on casing annulus to make sure packer is properly set.)



**COMPLETION PROGNOSIS FOR  
Pendragon Energy Partners  
Cowsaround SWD #1  
(continued)**

11. Rig down and release rig. Install injection pump and facilities.
15. Run step rate injection test and casing integrity test (as per NMOCD regulations).

John C. Thompson

A handwritten signature in black ink, appearing to read 'J.C. Thompson', written in a cursive style.

Engineer

Pendragon Energy  
 Cowsaround SWD #1  
 Basin Mesaverde  
 Sec. 16, T26N, R12W  
 San Juan, New Mexico  
 Slick Water Frac

Fluid & Proppant Pumping Schedule

TANKS REQUIRED USING 360 BBL/TANK USABLE =

6.06

Fluid Type	Fluid Volume (gals)	Conc. (lb/gal)	Totals (lbs)	Proppant		Clean Fluid (bbls)	Volume		Cum Slurry (bbls)
				Mesh Size	Pad		Slurry Fluid (bbls)	Slurry Volume (bbls)	
Slick Water Frac	22000	0.00	0			524	524	524	524
Slick Water Frac	15000	1.00	15000	20-40 Mesh Brady Sand		357	373	897	897
Slick Water Frac	30000	1.50	45000	20-40 Mesh Brady Sand		714	763	1660	1660
Slick Water Frac	20000	2.00	40000	20-40 Mesh Brady Sand		476	520	2180	2180
Slick Water Frac	4578	0.00	0	Flush		109	109	2289	2289
<b>Totals</b>	<b>91578</b>		<b>100000</b>			<b>2180</b>	<b>2289</b>	<b>2289</b>	<b>2289</b>

Rate Schedule

Percent Pad= 25%

Fluid Type	Fluid Volume (gals)	Proppant Conc. (lb/gal)	Slurry Rate (bpm)	Clean Fluid Rate (bpm)	Proppant Rate (lbs/min)	Slurry Volume (bbls)	Pump Time (min)	Total Pump Time (min)		
								Slurry Rate (bpm)	Clean Fluid Rate (bpm)	Slurry Volume (bbls)
Slick Water Frac	22000	0.00	50	50.0	0	524	10.48			
Slick Water Frac	15000	1.00	50	47.8	2024	373	7.47			
Slick Water Frac	30000	1.50	50	46.8	2971	763	15.26			
Slick Water Frac	20000	2.00	50	45.8	3879	520	10.39			
Slick Water Frac	4578	0.00	50	50.0	0	109	2.18			
								<b>Total Pump Time (min)</b>	<b>46</b>	

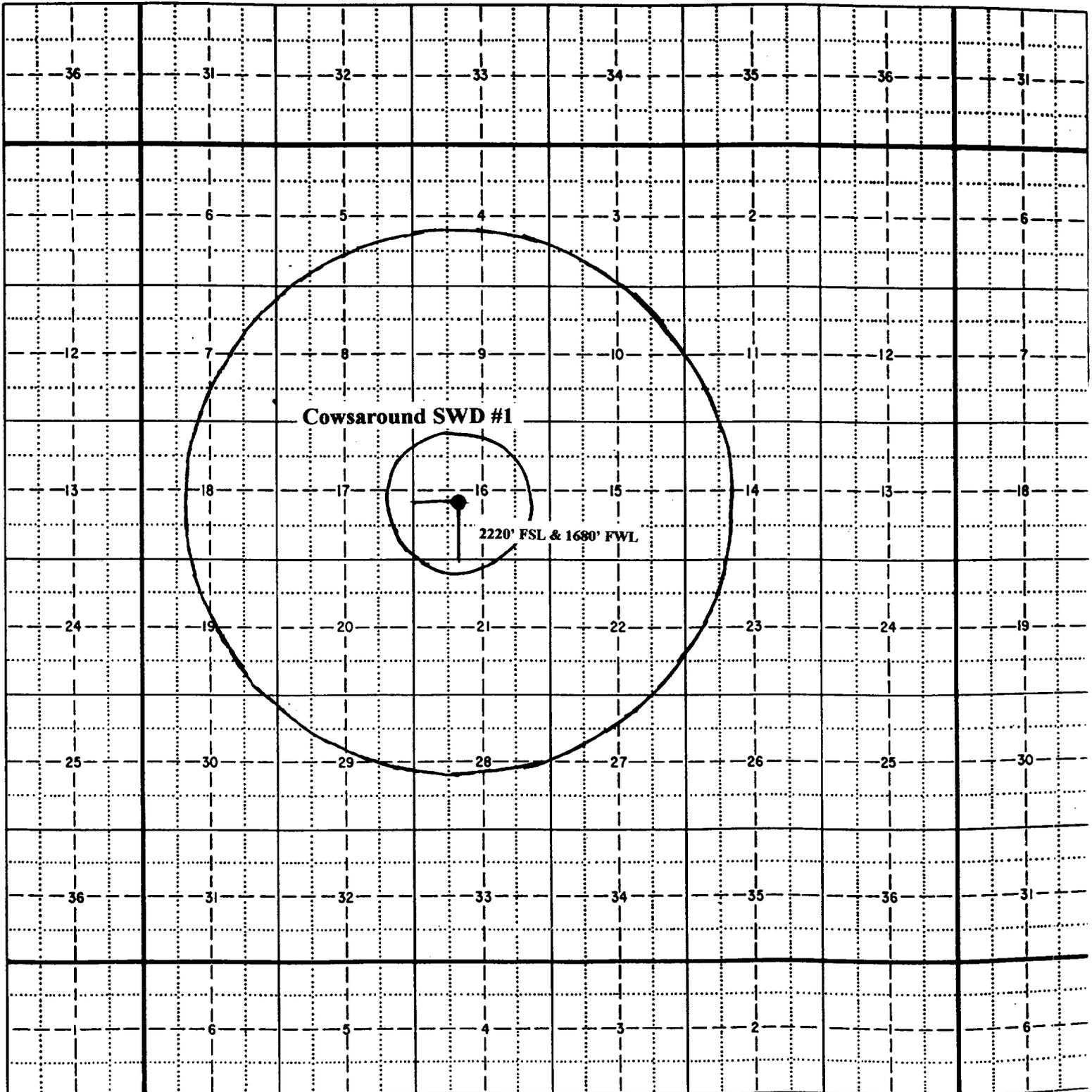
Township 26N

Range 12W

County San Juan

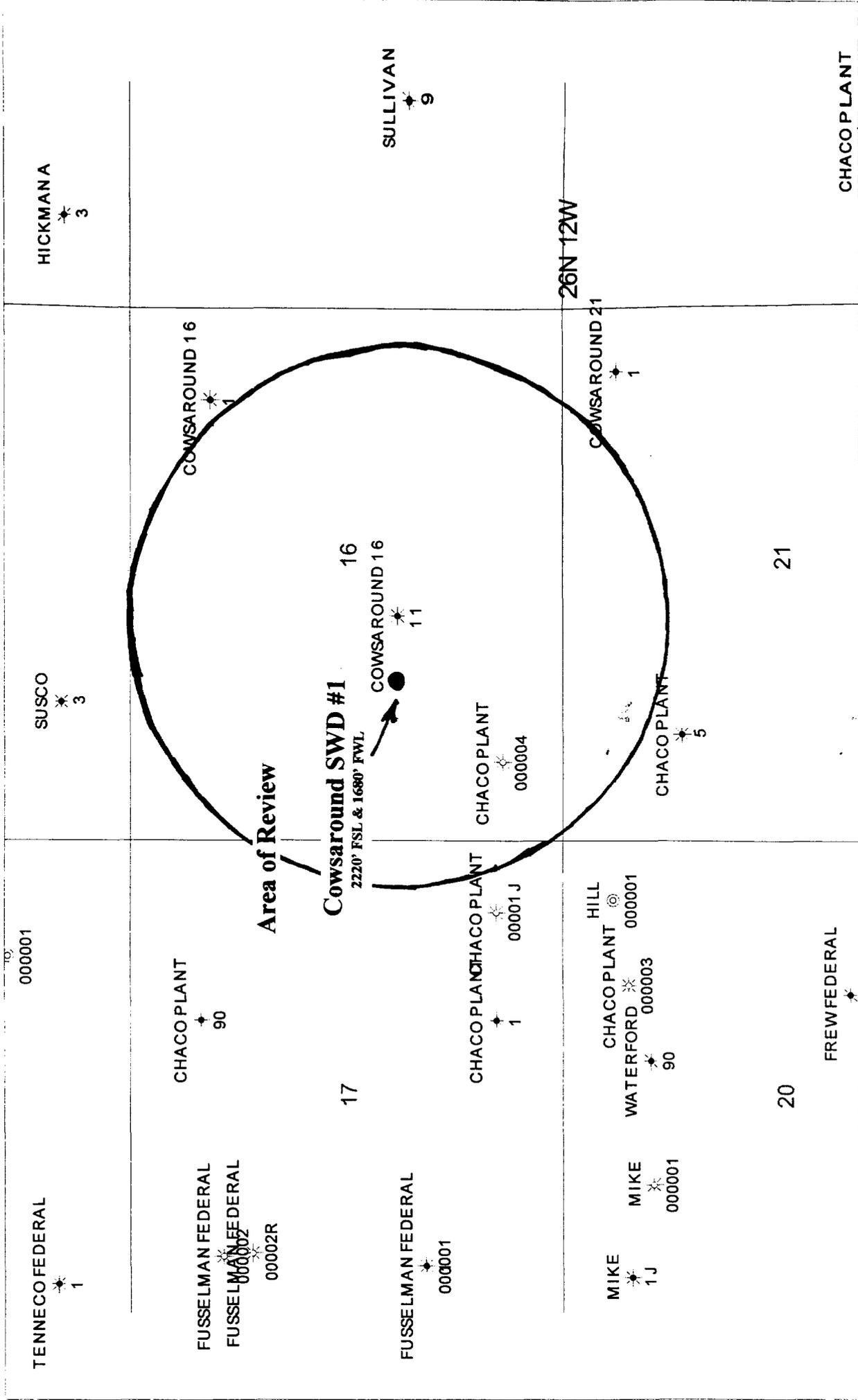
State New Mexico

## Cowsaround SWD #1





**There are no wells that penetrate or have penetrated the proposed injection zone within the area of review.**







## **Water Analysis**

The following water analysis is intended to be a representative sample of the Fruitland formation water that will be disposed.

**Pendragon**

County: San Juan

State: NM

Lab #: 1

Date: 12/20/99

Field:

Location: Texaco # 11-1

Formation: Coal

Depth: 0

# H & M Precision Water Analysis Report

Sum +	mg/L	meq/L		Sum -	mg/L	meq/L
Potassium	0.0	0.00		Sulfate	3.0	0.06
Sodium	13,711.1	596.40		Chloride	21,000.0	592.33
Calcium	100.0	4.99		Carbonate	0.0	0.00
Magnesium	24.0	1.97		Bicarbonate	720.0	11.80
Iron	3.2	0.17		Hydroxide	0.0	0.00
Barium	0.0	0.00	<input type="checkbox"/> Analysis Balanced	-	0.0	0.00
Strontium	0.0	0.00		-	0.0	0.00
<b>CATIONS</b>	<b>13,838.3</b>	<b>603.53</b>		<b>ANIONS</b>	<b>21,723.0</b>	<b>604.19</b>

Total Dissolved Solids @180C	35,561 mg/L
Sample Temperature, 'F	70 F
Sample pH, standard units	7 Units
Dissolved Oxygen	0.0 ppm
Carbon Dioxide	0.0 mg/L
Total Sulfide, (TS)	0.0 mg/L
Sulfide Ion, (S)	0 mg/L
Dissolved Hydrogen Sulfide, (TS-S)	0 mg/L

Specific Gravity	1.0253
Resistivity, measured	0 ohm/m <sup>4</sup>
Ionic strength	0.607
Sulfate Reducing Bacteria	nd
Aerobic Bacteria	nd

CACO <sub>3</sub>			CASO <sub>4</sub>				
Temp F	Stiff Davis Index	A index	Temp F	SOLUBILITY		S Index	A Index
				Actual	Calculated		
32	-1.16	-493					
50	-1.03	-393	50	0.06	67.40	-67.34	-1605
68	-0.88	-296	68	0.06	67.66	-67.60	-1611
77	-0.79	-251	86	0.06	67.92	-67.86	-1617
86	-0.68	-197	104	0.06	68.05	-67.99	-1621
104	-0.46	-111	122	0.06	68.05	-67.99	-1620
122	-0.20	-38	140	0.06	67.09	-67.03	-1598
140	0.11	17	158	0.06	66.12	-66.06	-1575
158	0.43	50	176	0.06	65.14	-65.08	-1551
176	0.77	69					

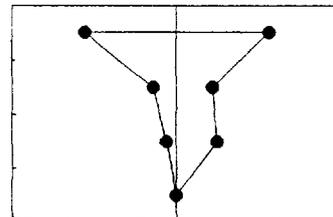
**BASO<sub>4</sub> SCALE POSSIBLE**  NO

**NOTE: Stiff Davis Index**  
 - indicates undersaturation. Scale formation negative.  
 0 indicates the water is at saturation point. Scale unlikely.  
 + indicates supersaturation. A positive scaling condition exists.

**NOTE: Skillman Method Calcium Sulfate 'S Index'**  
 - indicates undersaturation. Scale formation negative.  
 0 indicates the water is at saturation point. Scale unlikely.  
 + indicates supersaturation. A positive scaling condition exists.

**NOTE: A Index; worst possible case. Assumes 100% precipitation.**  
 - Units = pounds of scale produced / 1000 bbls. of water.  
 - A Index =< 0 Scale formation negative.  
 - A Index > 0 Scale formation positive.

Water Analysis Patern



Approved: Albert Rich  
 12/25/99 v4.01

# Pendragon

County: San Juan  
 State: NM  
 Lab #: 1  
 Date: 12/20/99

Field: *Benzal*  
 Location: *Benzal A 4 R*  
 Formation: Coal  
 Depth: 0

## H & M Precision Water Analysis Report

Sum +	mg/L	meq/L	Sum -	mg/L	meq/L
Potassium	0.0	0.00	Sulfate	10.0	0.21
Sodium	20,581.6	895.25	Chloride	32,000.0	902.60
Calcium	203.0	10.13	Carbonate	0.0	0.00
Magnesium	62.5	5.14	Bicarbonate	610.0	10.00
Iron	24.6	1.32	Hydroxide	0.0	0.00
Barium	20.0	0.29	-	0.0	0.00
Strontium	0.0	0.00	-	0.0	0.00
<b>CATIONS</b>	<b>20,891.7</b>	<b>912.13</b>	<b>ANIONS</b>	<b>32,620.0</b>	<b>912.81</b>

**Analysis  
Balanced**

Total Dissolved Solids @180C	53,512 mg/L
Sample Temperature, 'F	70 F
Sample pH, standard units	6.1 Units
Dissolved Oxygen	0.0 ppm
Carbon Dioxide	0.0 mg/L
Total Sulfide, (TS)	0.0 mg/L
Sulfide Ion, (S)	0 mg/L
Dissolved Hydrogen Sulfide, (TS-S)	0 mg/L

Specific Gravity	1.0375
Resistivity, measured	0 ohm/m <sup>3</sup>
Ionic strength	0.921
Sulfate Reducing Bacteria	nd
Aerobic Bacteria	nd

### Scaling Tendency

CACO3			CASO4				
Temp F	Stiff Davis Index	A index	Temp F	SOLUBILITY		S Index	A Index
				Actual	Calculated		
32	-1.95	-2079					
50	-1.82	-1753	50	0.21	77.36	-77.15	-1839
68	-1.69	-1470	68	0.21	77.58	-77.38	-1844
77	-1.61	-1311	86	0.21	77.81	-77.60	-1850
86	-1.49	-1123	104	0.21	77.81	-77.61	-1850
104	-1.28	-820	122	0.21	77.60	-77.39	-1845
122	-1.01	-535	140	0.21	76.63	-76.42	-1821
140	-0.68	-283	158	0.21	75.64	-75.43	-1798
158	-0.35	-117	176	0.21	74.65	-74.44	-1774
176	0.00	1					

**BASO4 SCALE POSSIBLE**

**YES**

NOTE: Stiff Davis Index

- indicates undersaturation. Scale formation negative.
- 0 indicates the water is at saturation point. Scale unlikely.
- + indicates supersaturation. A positive scaling condition exists.

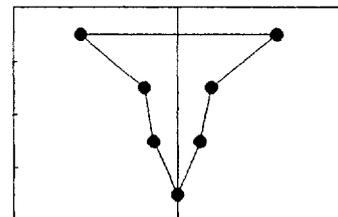
NOTE: Skillman Method Calcium Sulfate 'S Index'

- indicates undersaturation. Scale formation negative.
- 0 indicates the water is at saturation point. Scale unlikely.
- + indicates supersaturation. A positive scaling condition exists.

NOTE: A Index; worst possible case. Assumes 100% precipitation.

- Units = pounds of scale produced / 1000 bbis. of water.
- A Index =< 0 Scale formation negative.
- A Index > 0 Scale formation positive.

Water Analysis Patern



Approved: Albert Rich  
 12/25/99 v4.01



## **Logs**

The following logs are from the Frontier No. 1-A (API no. 30-045-05919), which is the closest offset well that penetrates the proposed injection zone. The Frontier No. 1-A is located 1750' FSL & 790' FEL in Section 8, T26N, R12W (approximately 1-1/2 miles to the northwest of the Cowsround SWD #1 location). After the Cowsaround SWD #1 is drilled a cased hole Gamma Ray/Neutron log will be run to identify the Point Lookout sands in the Mesaverde Formation.



ELECTRICAL LOG  
GAMMA RAY & INDUCTION LOG

WELL FRONTIER #2

COMPANY EL PASO NATURAL GAS COMPANY

COMPANY EL PASO NATURAL GAS COMPANY

WELL FRONTIER #2 A #1

FIELD GALLUP

LOCATION SEC. 8-26N-12W

COUNTY SAN JUAN

STATE NEW MEXICO

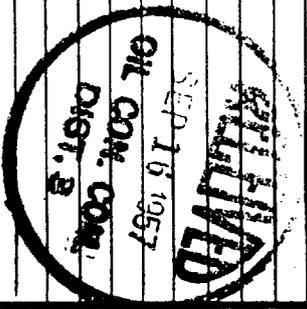
Location of Well  
790' FR E/L  
1750' FR S/L  
SEC. 8-26N-12W

(TEMP)

Elevation: D.F.: 5995'  
K.B.: 5996'  
or G.L.: 5986'

FILING No. \_\_\_\_\_

1 No.	ONE ES	ONE GRL	ONE IND
8-15-57	8-18-57	8-18-57	
3924	5103	5105	
174	3500	3943	
3750	1803	1162	
174	3943	--	
173	3940	3940	
3925	5109	5109	
3925	5110	5110	
KB	KB	KB	
	GEL CHEM GAS	GAS	
9.8			
51			
2.0 @ 65°F	@	%F	
1.2 @ 10°F	@	%F	
8.0 @ .L.°F	@	%F	
3.8 C 30 min.	CC 30 min.		
110	161	161	
8 3/4"	6 3/4"	6 3/4"	
16"	SEN. 600	27"	
6.4"	T.C. 1		
18' 8"			
1 HR	2 HRS	2 HRS	
1559 FARM	1746 FARM	1746 FARM	
MATTHEWS	HANDLEY	HANDLEY	
TUNNAC	TUNNAC	TUNNAC	



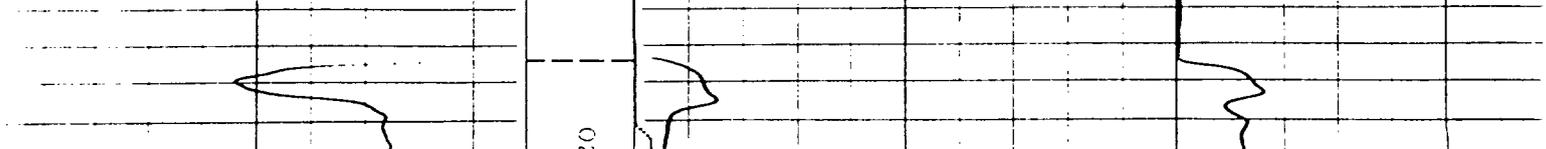
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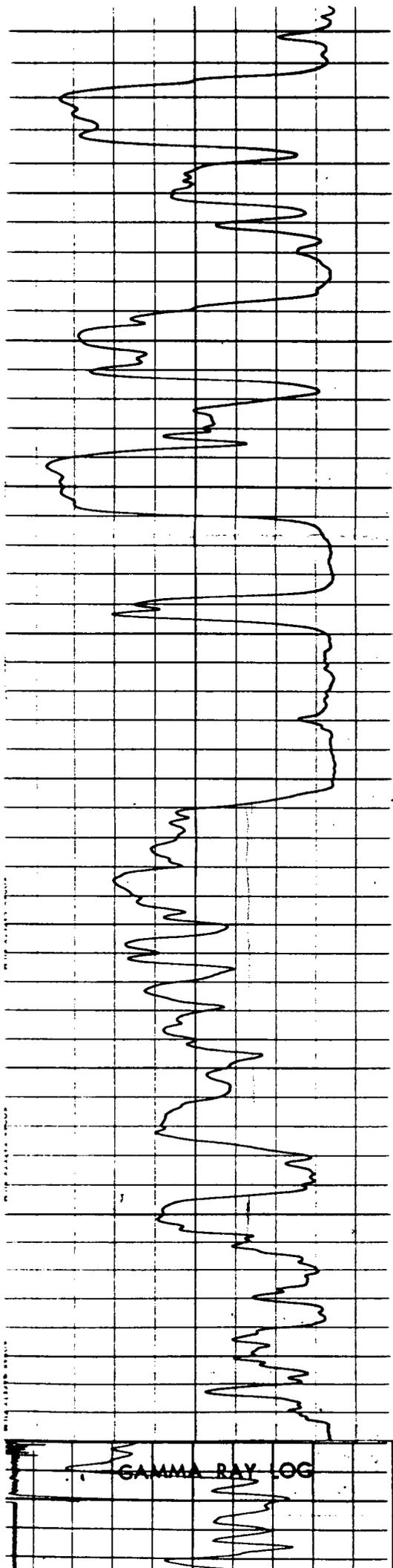
REMARKS MUD SAMPLE FROM FLOW LINE

GAMMA RAY: RECORDING SPEED IS 4000' / HR  
ZERO EMISSION IS 2 DIV. LEFT  
CALIBRATION: B-110-400-100(400)

INDUCTION:

SPONTANEOUS POTENTIAL millivolts	DEPTH	RESISTIVITY	RESISTIVIT
-10+	2" = 100'	NORMAL	100 0
			1000 0
	L. R. 174'	LATERAL	100
			1000





3500

3600

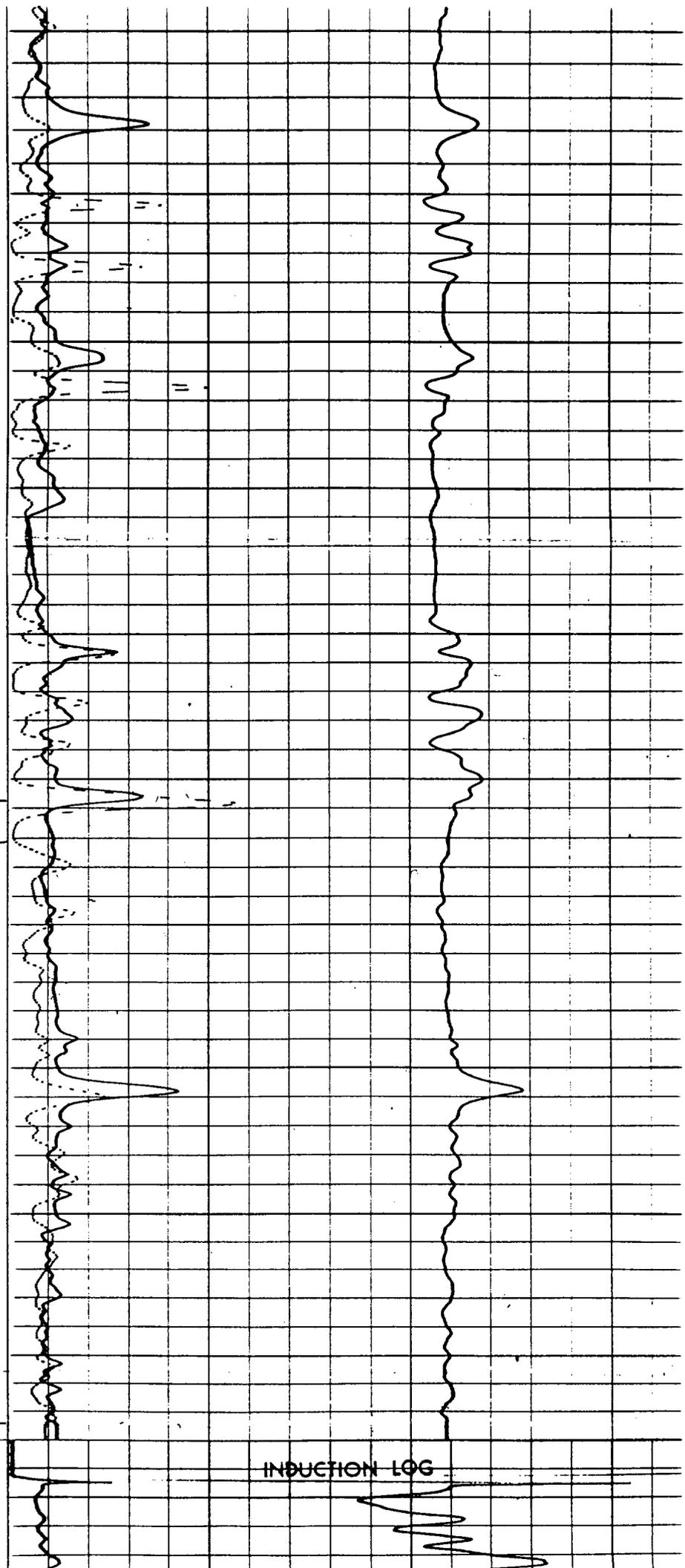
3700  
POINT  
LOOKOUT

3800

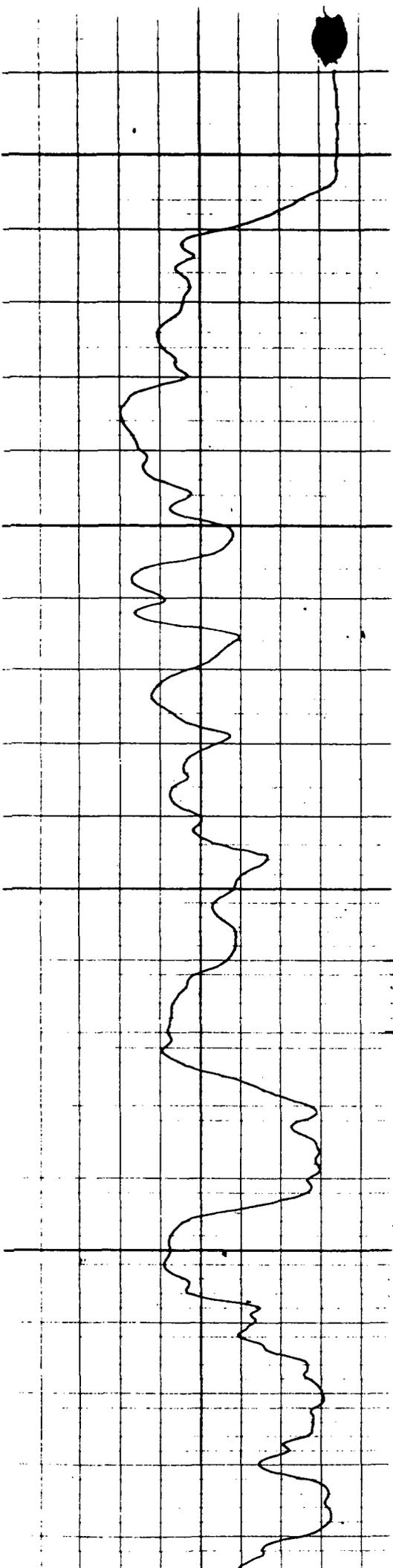
3900

3922  
MANEX

GAMMA RAY LOG



INDUCTION LOG



3700

▼ 3712

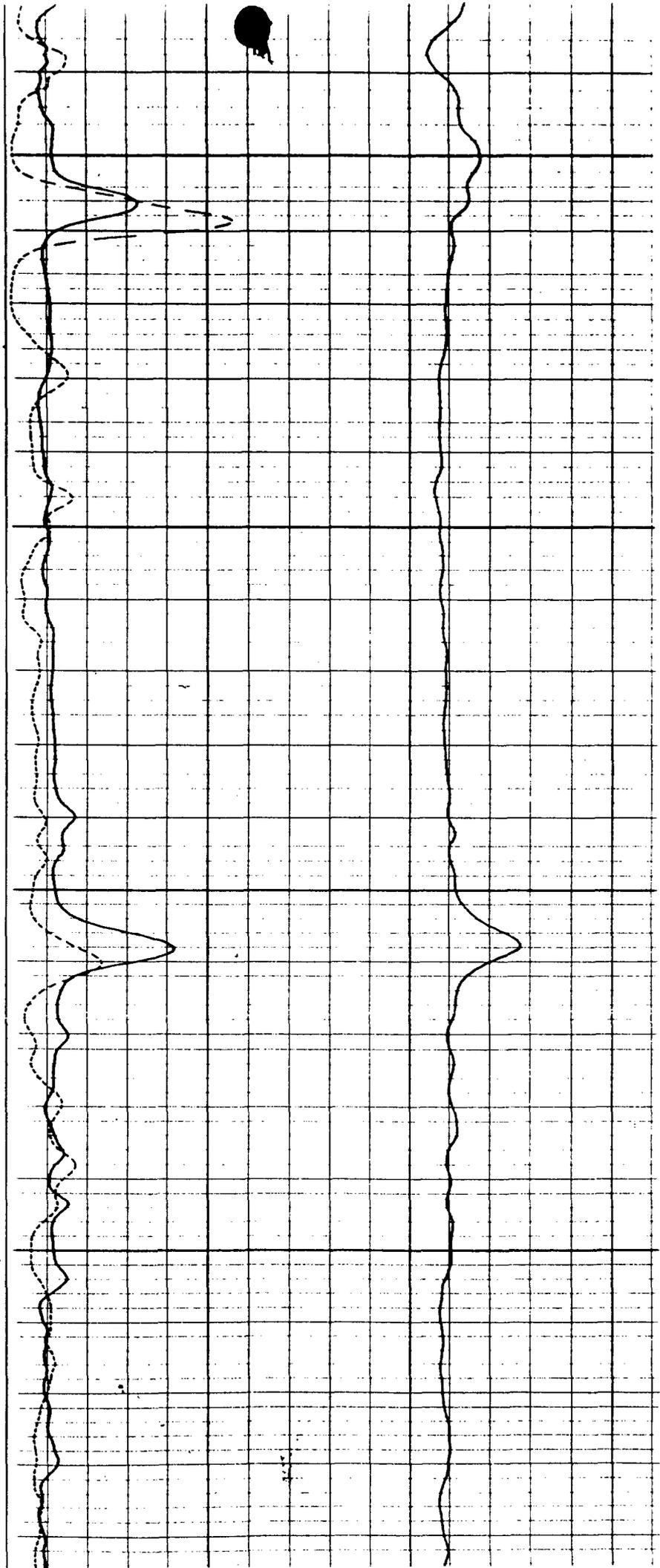
113x4  
= 452  
holes

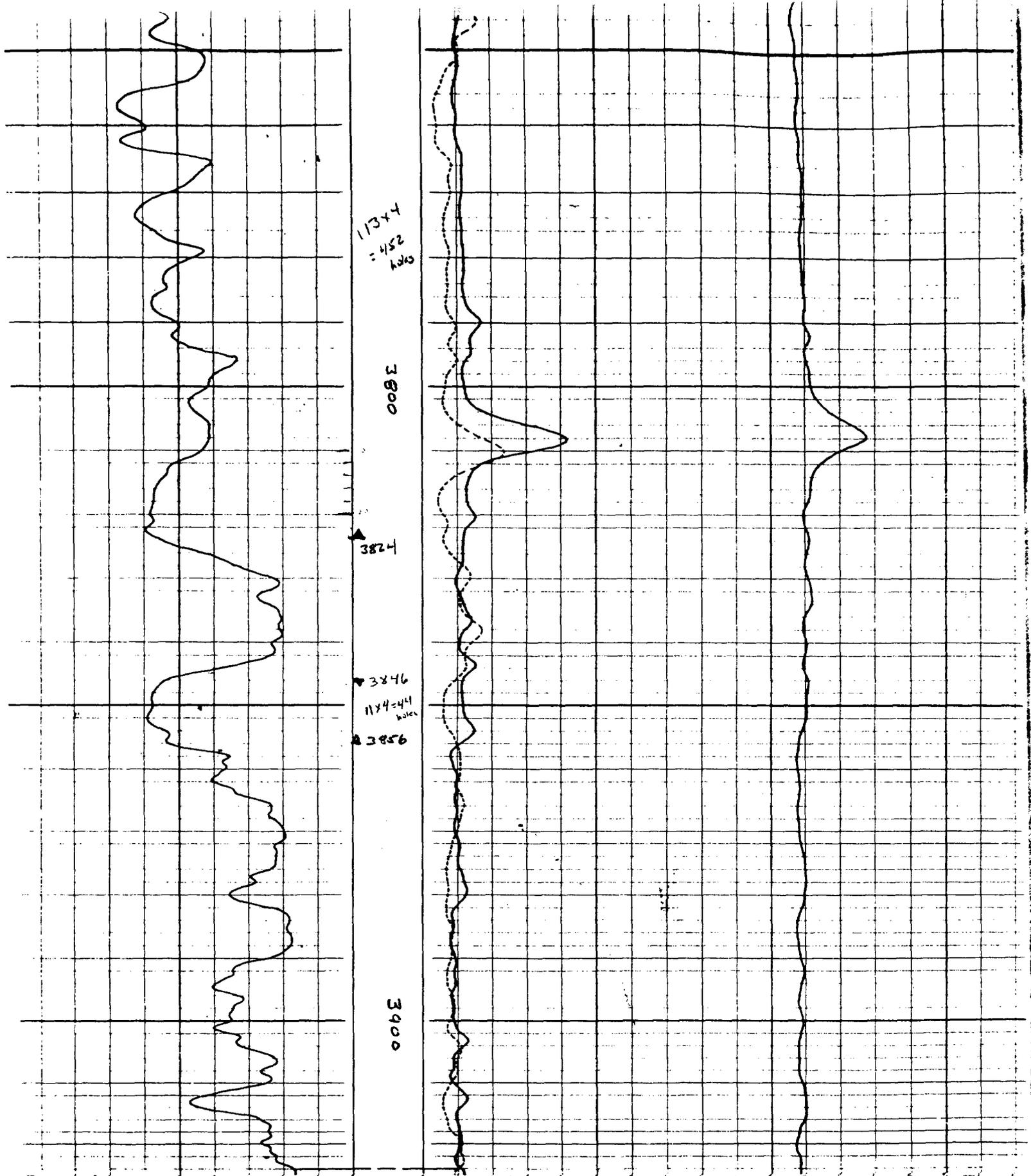
3800

▼ 3824

▼ 3846  
11x4=44  
holes

▼ 3856





1.5 9.0  
Micrograms Ra-eq/ton  
GAMMA RAY ZERO 2 DIV.  
LEFT

0 100 160  
RESISTIVITY  
ohms.m<sup>2</sup>/m  
conductivity

GAMMA RAY F.R. 5103'  
DEPTH REACHED 5109'

INDUCTION F.R. 5105'  
DEPTH REACHED 5109'

# AFFIDAVIT OF PUBLICATION

Ad No. 42258

STATE OF NEW MEXICO  
County of San Juan:

ALETHIA ROTH LISBERGER, being duly sworn says: That she is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meeting of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Wednesdays, January 26, 2000

And the cost of the publication is: \$20.01



On 1/31/00 ALETHIA ROTH LISBERGER appeared before me, whom I know personally to be the person who signed the above document.

  
My Commission Expires May 3, 2003

COPY OF PUBLICATION

318 Legals  
**LEGAL NOTICE**

Pendragon Energy Partners, proposes to drill and complete the Cowsaround SWD #1, to be used for a water disposal well. The well will be located in Section 16K, Township 26N, Range 12W. Produced Fruitland coal water is to be disposed into the Mesaverde formation at a maximum rate of 1500 bwpd at 1,490 psi.

Questions concerning this proposal can be sent to John C. Thompson, Walsh Engineering and Production Corp., 7415 East Main Street, Farmington, New Mexico 87402 (505) 327-4892.

Interested parties should file comments or objections and requests for hearing with the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87504-2088 within 15 days.

Legal No. 42258, published in the Daily Times, Farmington, New Mexico, Wednesday, January 26, 2000.

**ILLEGIBLE**