

Exploration and Production  
Dallas, Texas

AUTHORITY FOR EXPENDITURE COMPARISON  
NEARBURG AFE FORMAT

LEASE: Arroyo 16 State Com #1 / Boyd X State Com #9      PROPOSED TOTAL DEPTH: 8,200' / 8,300'  
LOCATION: Section 16, T19S, R25E, Eddy County, New Mexico  
DESCRIPTION OF WORK: Drill and complete as a pumping Cisco/Canyon oil producer.  
DATE PREPARED: 6/8/95

	NPC BCP	YATES BCP	NPC ACP	YATES ACP	NPC TOTAL	YATES TOTAL	DIFF
INTANGIBLE COSTS:							
Drilling Footage	129,600	140,700			129,600	140,700	(11,100)
Drilling Daywork	13,200	13,500	8,800		22,000	13,500	8,500
Drilling Turnkey					0	0	0
Rig Mobilization and Demobilization					0	0	0
Road & Location Expense	17,000	11,300	1,000	3,300	18,000	14,600	3,400
Damages	5,000				5,000	0	5,000
Directional Drilling - Tools and Service					0	0	0
Drilling Fluids	15,000	10,000		600	15,000	10,600	4,400
Fuel, Power, and Water	10,000	18,000	1,500	1,100	11,500	19,100	(7,600)
Supplies - Bits			750	2,300	750	2,300	(1,550)
Supplies - Casing Equipment	2,000		3,500		5,500	0	5,500
Supplies - Liner Equipment					0	0	0
Supplies - Miscellaneous	500	300	500		1,000	300	700
Cement and Cmt. Services - Surface Csg	17,000	12,500			17,000	12,500	4,500
Cement and Cmt. Services - Int. Csg					0	0	0
Cement and Cmt. Services - Prod. Csg			30,000	30,000	30,000	30,000	0
Cement and Cmt. Services - Other					0	0	0
Rental - Drilling Tools and Equipment	3,000	6,300	1,000	8,000	4,000	14,300	(10,300)
Rental - Miscellaneous	500		1,000		1,500	0	1,500
Testing - Drill Stem / Production	6,000				6,000	0	6,000
Open Hole Logging	20,000	11,000			20,000	11,000	9,000
Mudlogging Services	7,500	3,600			7,500	3,600	3,900
Special Services					0	0	0
Plug and Abandon	10,000		(10,000)		0	0	0
Pulling and/or Swabbing Unit			12,000	7,800	12,000	7,800	4,200
Reverse Equipment			1,200		1,200	0	1,200
Wireline Services			5,000	4,000	5,000	4,000	1,000
Stimulation			20,000	30,000	20,000	30,000	(10,000)
Pump / Vacuum Truck Services	500		500		1,000	0	1,000
Transportation	1,000		1,500		2,500	0	2,500
Tubular Goods - Inspection & Testing	500		6,000		6,500	0	6,500
Unclassified					0	0	0
Telephone and Radio Expense	500		500		1,000	0	1,000
Engineer / Geologist	3,150		1,350		4,500	0	4,500
Company Labor - Field Supervision	12,600	7,500	4,500	5,400	17,100	12,900	4,200
Contract Labor / Roustabout	1,000		2,500		3,500	0	3,500
Legal and Professional Services	2,500		500		3,000	0	3,000
Insurance	10,300				10,300	0	10,300
Overhead	4,600		2,000		6,600	0	6,600
SUBTOTAL	292,950	234,700	95,600	92,500	388,550	327,200	61,350
Contingencies	29,295		9,560	4,500	38,855	4,500	34,355
ESTIMATED TOTAL INTANGIBLES	322,245	234,700	105,160	97,000	427,405	331,700	95,705

BEFORE THE  
OIL CONSERVATION DIVISION  
Case No. 11311 Exhibit No. 8  
Submitted By:  
Nearburg Exploration Company  
Hearing Date: August 10, 1995

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	NPC BCP	YATES BCP	NPC ACP	YATES ACP	NPC TOTAL	YATES TOTAL	DIFF
<b>TANGIBLE COSTS:</b>							
Conductor Casing					0	0	0
Surface Csg	20,150	16,800			20,150	16,800	3,350
Intermediate Csg					0	0	0
Protection Csg						0	0
Production Csg			101,250	80,000	101,250	80,000	21,250
Protection Liner						0	0
Production Liner						0	0
Tubing			24,180	21,500	24,180	21,500	2,680
Rods					0	0	0
Artificial Lift Equipment			80,000	75,000	80,000	75,000	5,000
Tank Battery			15,000		15,000	0	15,000
Separators/Heater Treater/Gas Units/FWKO			10,000	30,000	10,000	30,000	(20,000)
Well Head Equipment & Christmas Tree	1,500	2,200	10,500	13,500	12,000	15,700	(3,700)
Subsurface Well Equipment					0	0	0
Flow Lines			5,000		5,000	0	5,000
Saltwater Disposal Pump					0	0	0
Gas Meter			3,000		3,000	0	3,000
Lact Unit					0	0	0
Vapor Recovery Unit					0	0	0
Other Well Equipment						0	0
ROW and Damages						0	0
Surface Equipment Installation Costs			10,000	10,000	10,000	10,000	0
Elect. Installation			15,000	15,000	15,000	15,000	0
							0
<b>ESTIMATED TOTAL TANGIBLES</b>	21,650	19,000	273,930	245,000	295,580	264,000	31,580
							0
<b>ESTIMATED TOTAL WELL COSTS</b>	343,895	253,700	379,090	342,000	722,985	595,700	127,285

Likely Savings from NPC AFE:

Items Not Included in Yates' AFE:

<b>BCP Intangibles:</b>	Drilling Footage	10,700	Drill Stem Testing	\$6,000
	Road & Location	7,000	Engineer/Geologist	\$1,000
	Damages	2,500	Legal & Professional	\$2,500
	Drilling Fluids	7,500	Insurance	<u>\$5,580</u>
	Cement Surface Csg	2,000	SUBTOTAL	\$15,080
	Insurance	4,730		
	Contingencies	<u>29,295</u>		
	SUBTOTAL	\$63,725		
<b>ACP Intangibles:</b>	Pulling Unit	4,500	Drilling Daywork	\$6,750
	Contingencies	<u>9,560</u>	Engineer/Goelogist	500
	SUBTOTAL	\$14,060	SUBTOTAL	\$7,250
<b>ACP Tangibles:</b>	Submersible Pump	<u>5,000</u>	Tank Battery	<u>15,000</u>
	SUBTOTAL	\$5,000	SUBTOTAL	\$15,000
<b>GRAND TOTAL</b>		<b><u>\$82,785</u></b>	<b>GRAND TOTAL</b>	<b><u>\$37,330</u></b>

Total of NPC Savings and Yates Excluded Items      \$120,115

## **SPOT / ELAN Log Analysis**

**SPOT -**

**Computes the spots (vugs) that appear on a Formation Micro Imager (FMI) as a percent of the areal size of the wellbore surface. From this computation, the apparent producibility of the formation can be inferred from actual production histories and analogous formations.**

**SPOT / ELAN -**

**Uses SPOT computed porosity (very high resolution) in the ELAN program to calculate volumetric reserves.**

**The FMI is also used to identify natural fractures and determine fracture azimuth, which will aid in determining preferential drainage orientation.**

**BEFORE THE**

**OIL CONSERVATION DIVISION**

**Case No. 11311 Exhibit No. 9**

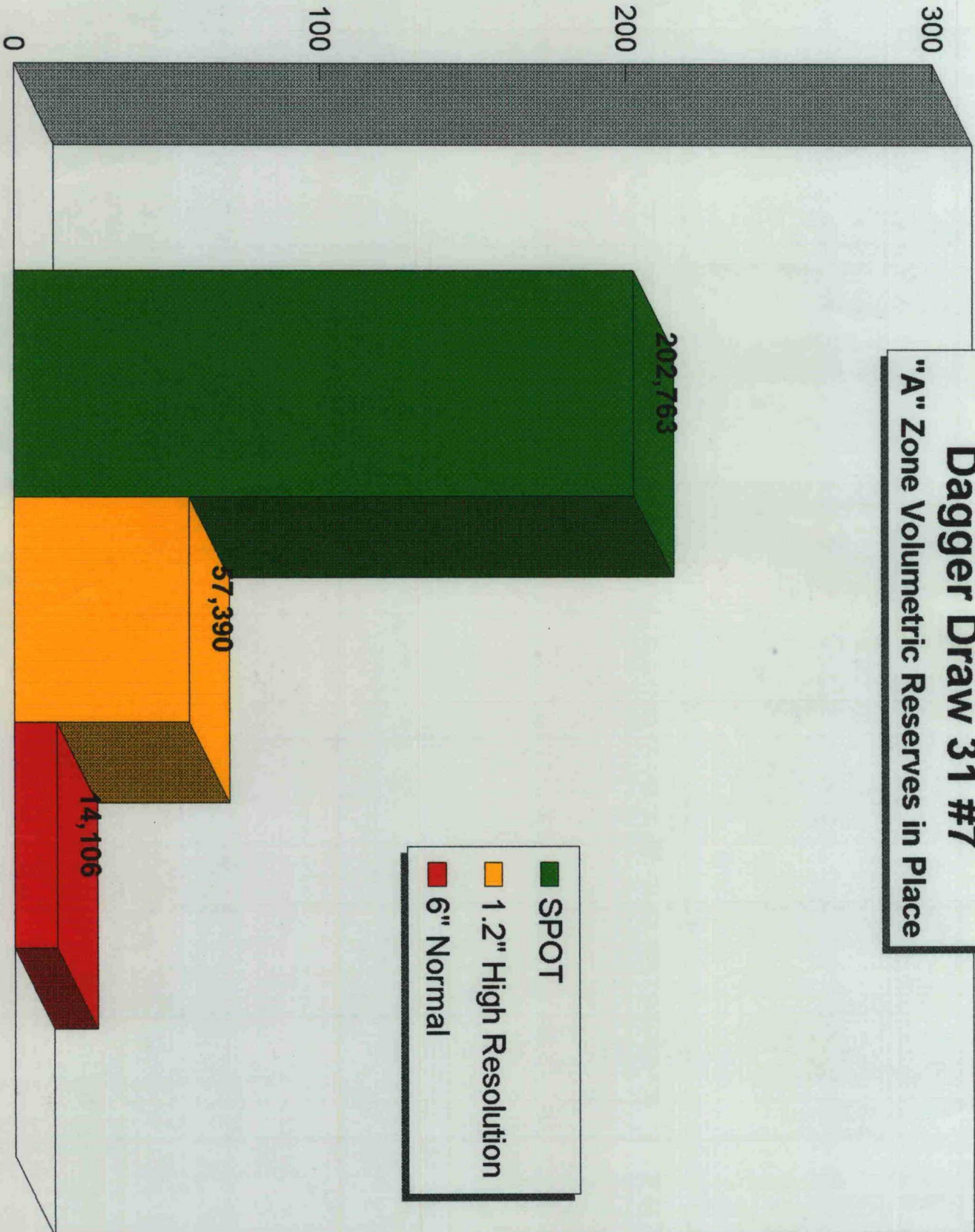
**Submitted By:**

**Nearburg Exploration Company**

**Hearing Date: August 10, 1995**

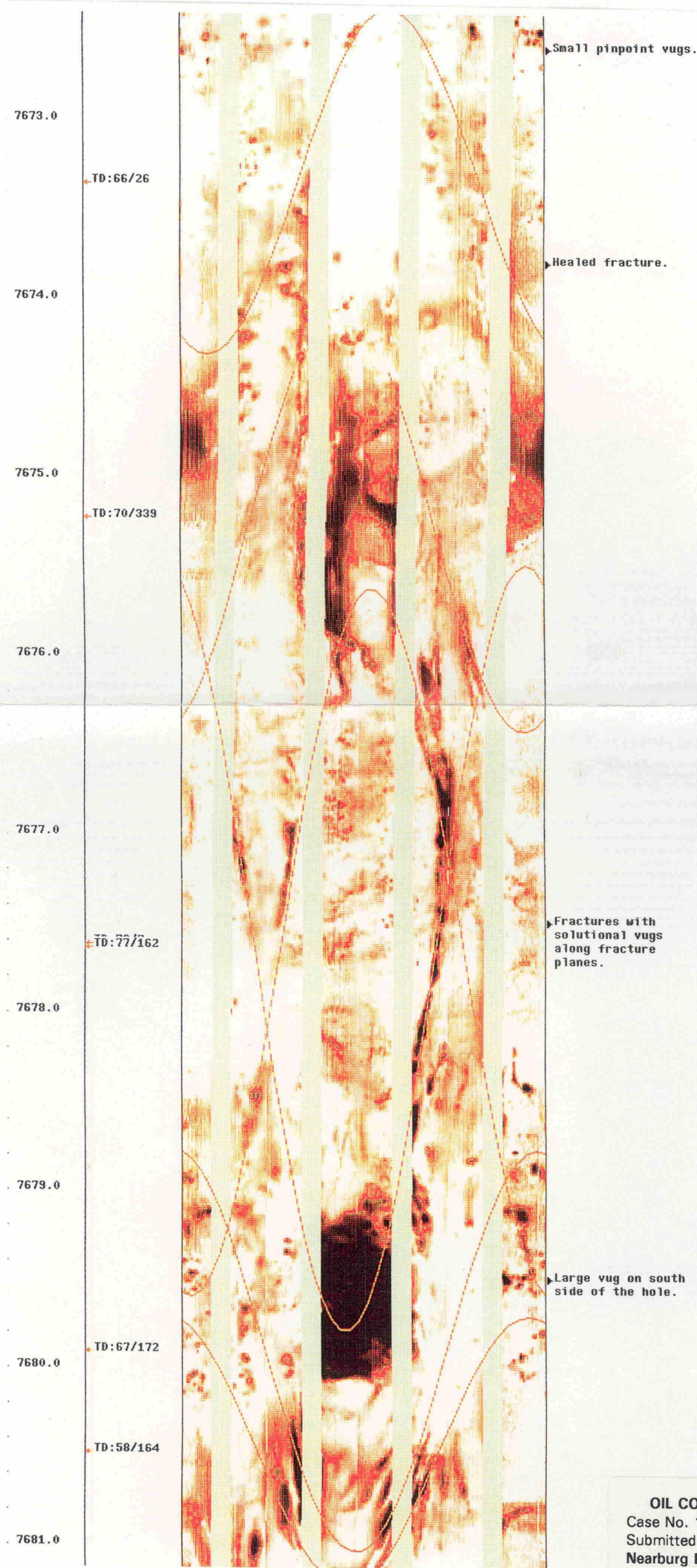
Barrels of Oil in Place  
Thousands

**Dagger Draw 31 #7**  
**"A" Zone Volumetric Reserves in Place**





Cisco/Canyon Formation Micro Imager Example



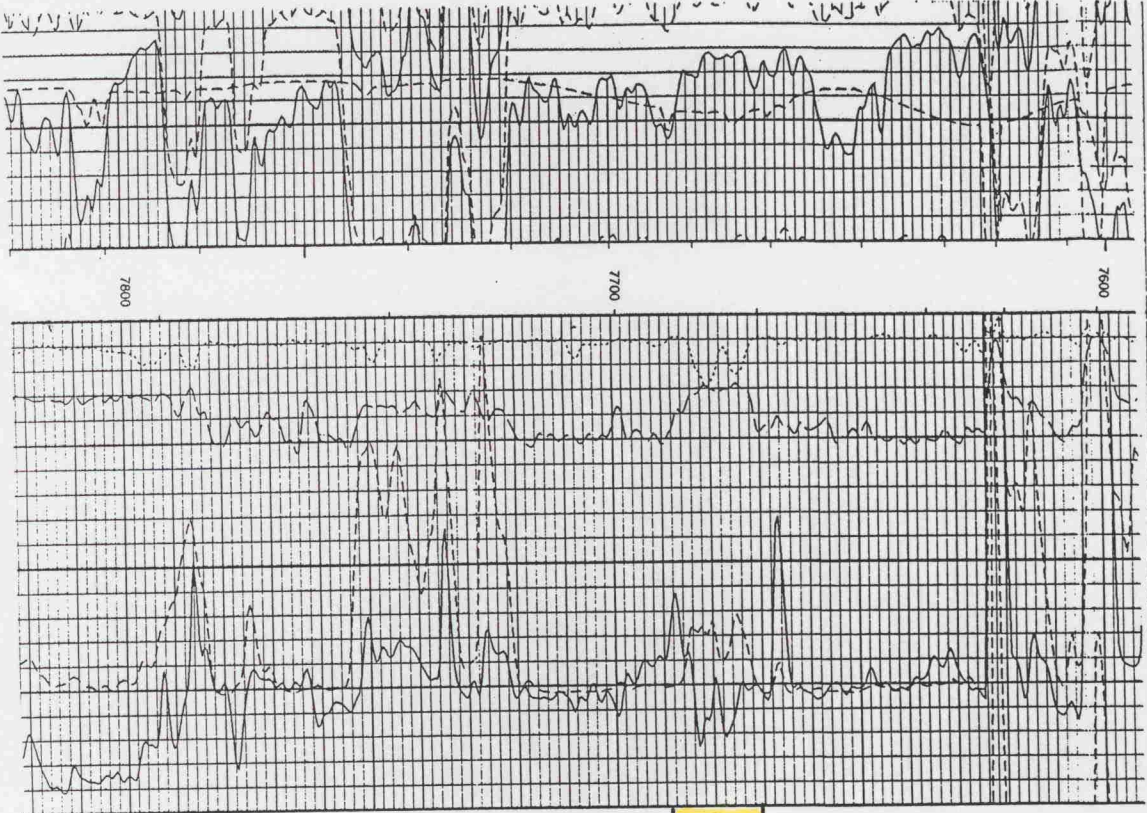


Calculated Porosity vs. Data Acquisition Technique

BEFORE THE  
OIL CONSERVATION DIVISION  
Case No. 11311 Exhibit No. 77  
Submitted By:  
Nearburg Exploration Company  
Hearing Date: August 10, 1995

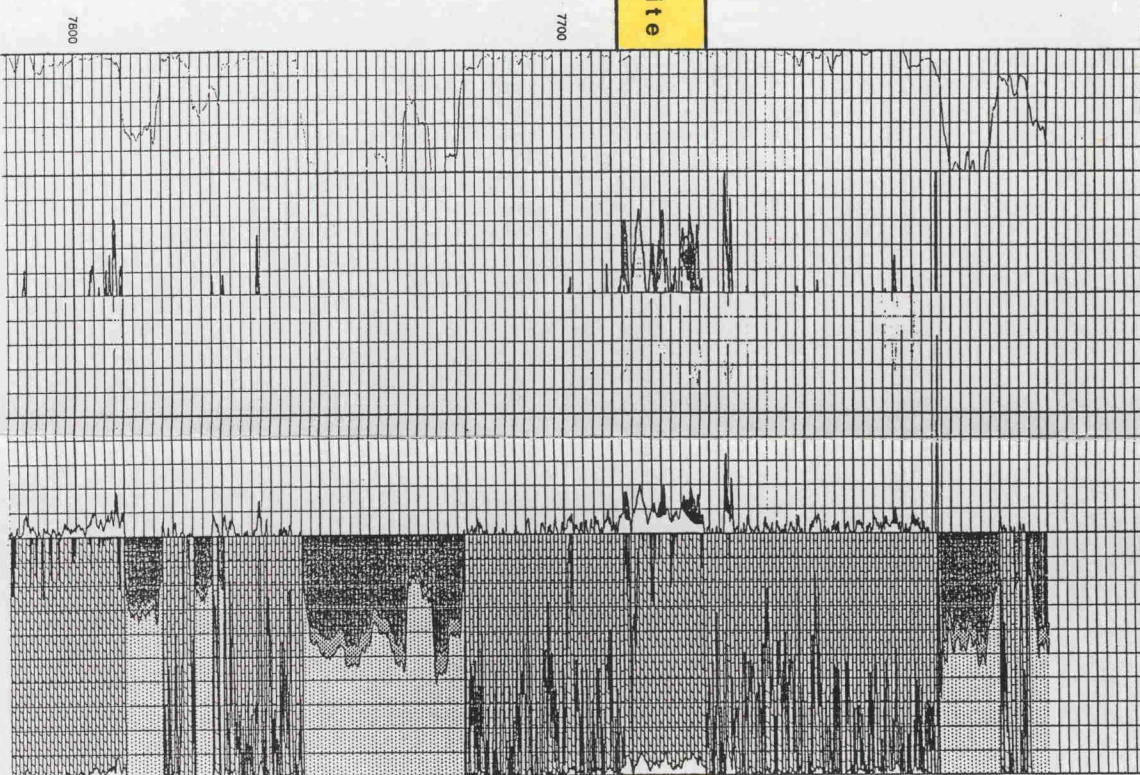
3.6%

Uranium Indicator From CGR to SCR	
Spectroscopy Gamma Ray (SCR)	100
0 (GAP)	100
Computed Gamma Ray (CGR)	100
0 (GAP)	100
Caliper (CAL)	16
0 (IN)	16
Tension (TKES)	0
0 (LBF)	0
MAIN LOG	
Photoelectric Factor (PEF)	10
0 (---)	10
Neutron Porosity (NPH)	0.1
0.3 (N/A)	0.1
Density Porosity (DPH)	0.1
0.3 (N/A)	0.1
Bulk Density Correction (DRC)	0.45
0.05 (G/CC)	0.45



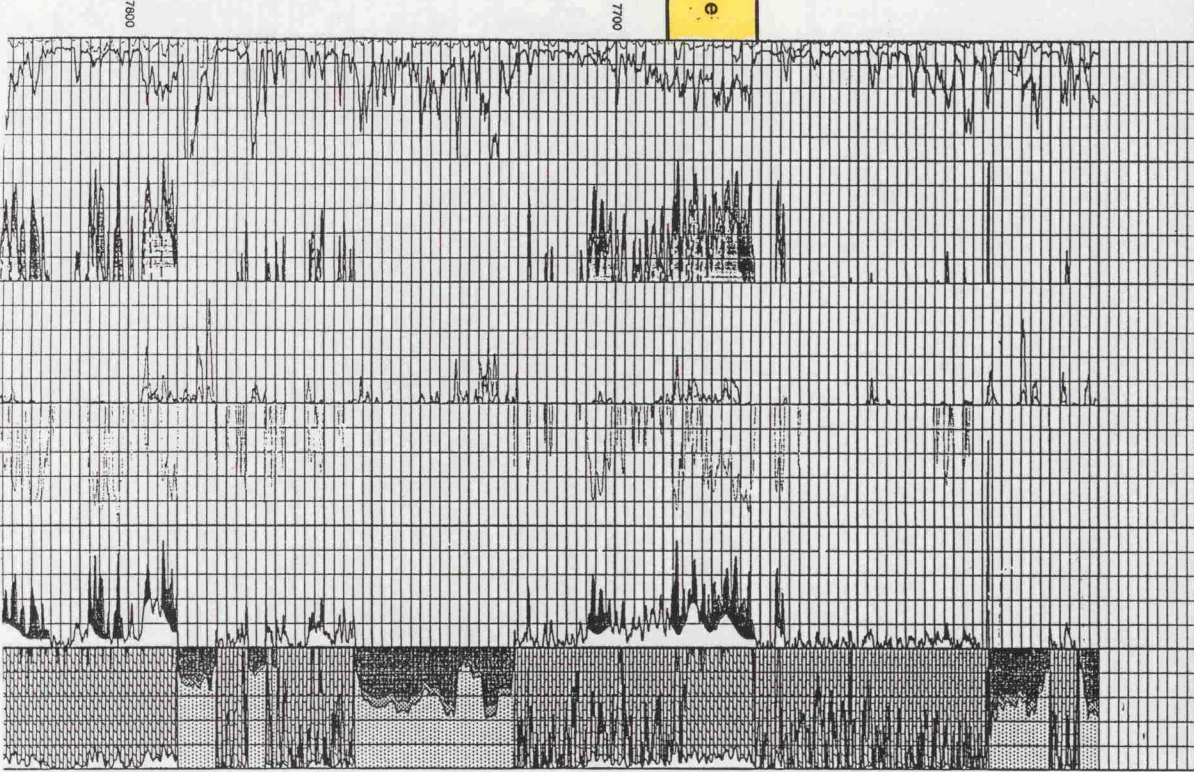
5.6%

water perm gas perm oil perm	
KNTFR	10000.0 0.0100
0 (MD)	10000.0 0.0100
KOIL	10000.0 0.0100
0 (MD)	10000.0 0.0100
SW	100.0 0.0
effective porosity	0.0
DCAL	20.000
0 (IN)	20.000
CGR (API units)	100.0
0 (GAP)	100.0
KINT	10000.0 0.0100
0 (MD)	10000.0 0.0100
40 Ft	40 Ft



10.3%

water perm gas perm oil perm	
KNTFR	10000.0 0.0100
0 (MD)	10000.0 0.0100
KOIL	10000.0 0.0100
0 (MD)	10000.0 0.0100
SW	100.0 0.0
SPOT Connectivity	0
Secondary Porosity Connected	0
DCAL	10.0
effective porosity	0.0
DCAL	50.0
0 (IN)	50.0
VUG DENSITY	25
0 (spots/ft)	25
VUG SIZE	25
0 (sq-in)	25
10 Ft	10 Ft



Conventional Log

High Resolution Sampling

SPOT Technique