

**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

<b>INTANGIBLE COSTS:</b>	NPC BCP	YATES BCP	NPC ACP	YATES ACP	NPC TOTAL	YATES TOTAL	DIFF
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
<b>SUBTOTAL</b>	<b>292,950</b>	<b>234,700</b>	<b>95,600</b>	<b>92,500</b>	<b>388,550</b>	<b>327,200</b>	<b>61,350</b>
Contingencies	29,295		9,560	4,500	38,855	4,500	34,355
<b>ESTIMATED TOTAL INTANGIBLES</b>	<b>322,245</b>	<b>234,700</b>	<b>105,160</b>	<b>97,000</b>	<b>427,405</b>	<b>331,700</b>	<b>95,705</b>

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

**AUTHORITY FOR EXPENDITURE COMPARISON**

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PROPOSED TOTAL DEPTH: 8,200' / 8,300'

LOCATION: Section 16, T19S, R25E, Eddy County, New Mexico

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DATE PREPARED: 6/8/95

	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
	Road & Location	7,000
	Damages	2,500
	Drilling Fluids	7,500
	Cement Surface Csg	2,000
	Insurance	4,730
	Contingencies	29,295
	<b>SUBTOTAL</b>	<b>\$63,725</b>

Drill Stem Testing	\$6,000
Engineer/Geologist	\$1,000
Legal & Professional	\$2,500
Insurance	\$5,580
<b>SUBTOTAL</b>	<b>\$15,080</b>

<b>ACP Intangibles:</b>	Pulling Unit	4,500
	Contingencies	9,560
	<b>SUBTOTAL</b>	<b>\$14,060</b>

Drilling Daywork	\$6,750
Engineer/Geologist	500
<b>SUBTOTAL</b>	<b>\$7,250</b>

<b>ACP Tangibles:</b>	Submersible Pump	5,000
	<b>SUBTOTAL</b>	<b>\$5,000</b>

Tank Battery	15,000
<b>SUBTOTAL</b>	<b>\$15,000</b>

**GRAND TOTAL \$82,785**

**GRAND TOTAL \$37,330**

**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

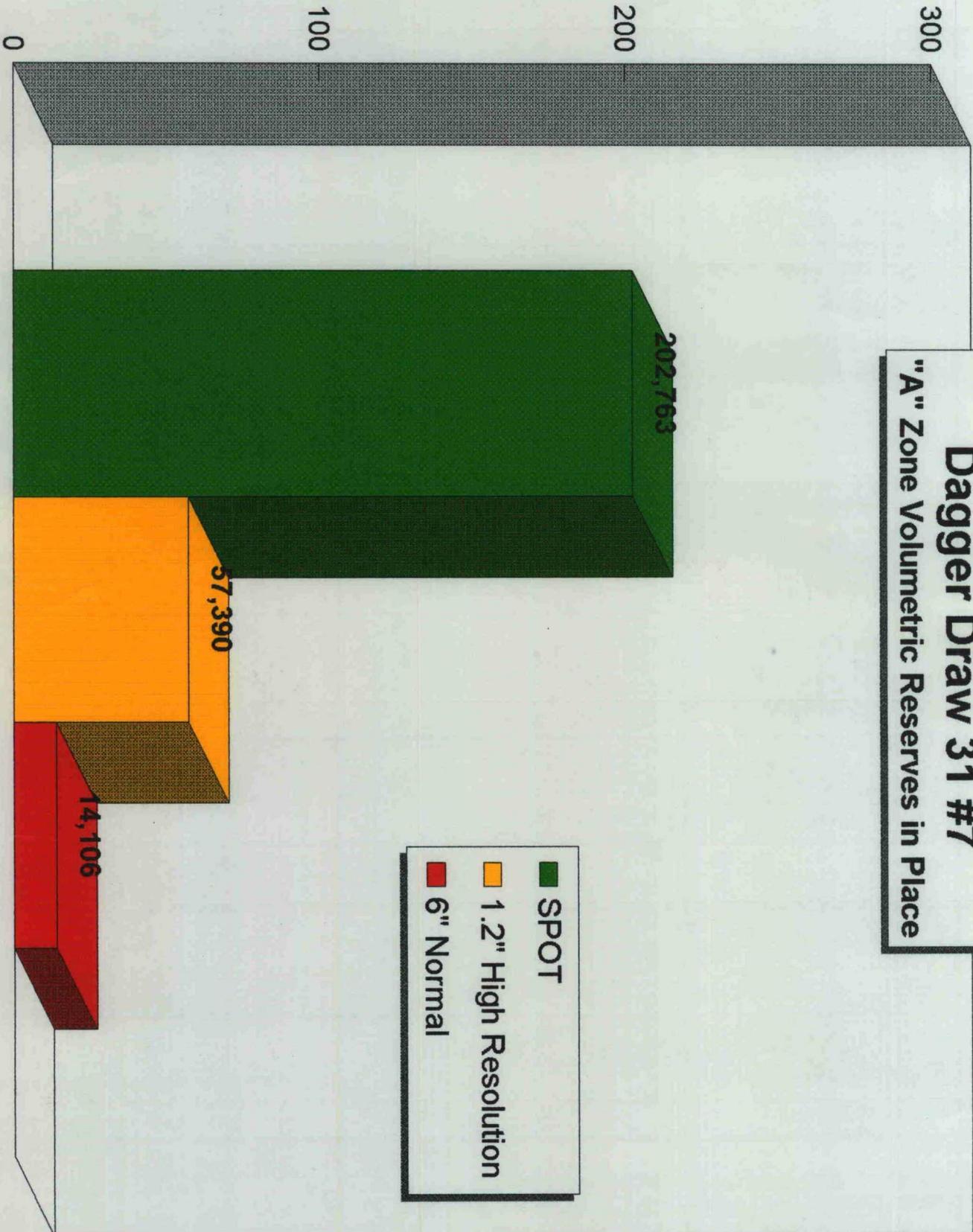
Case No. 11311 Exhibit No. 9

Submitted By:

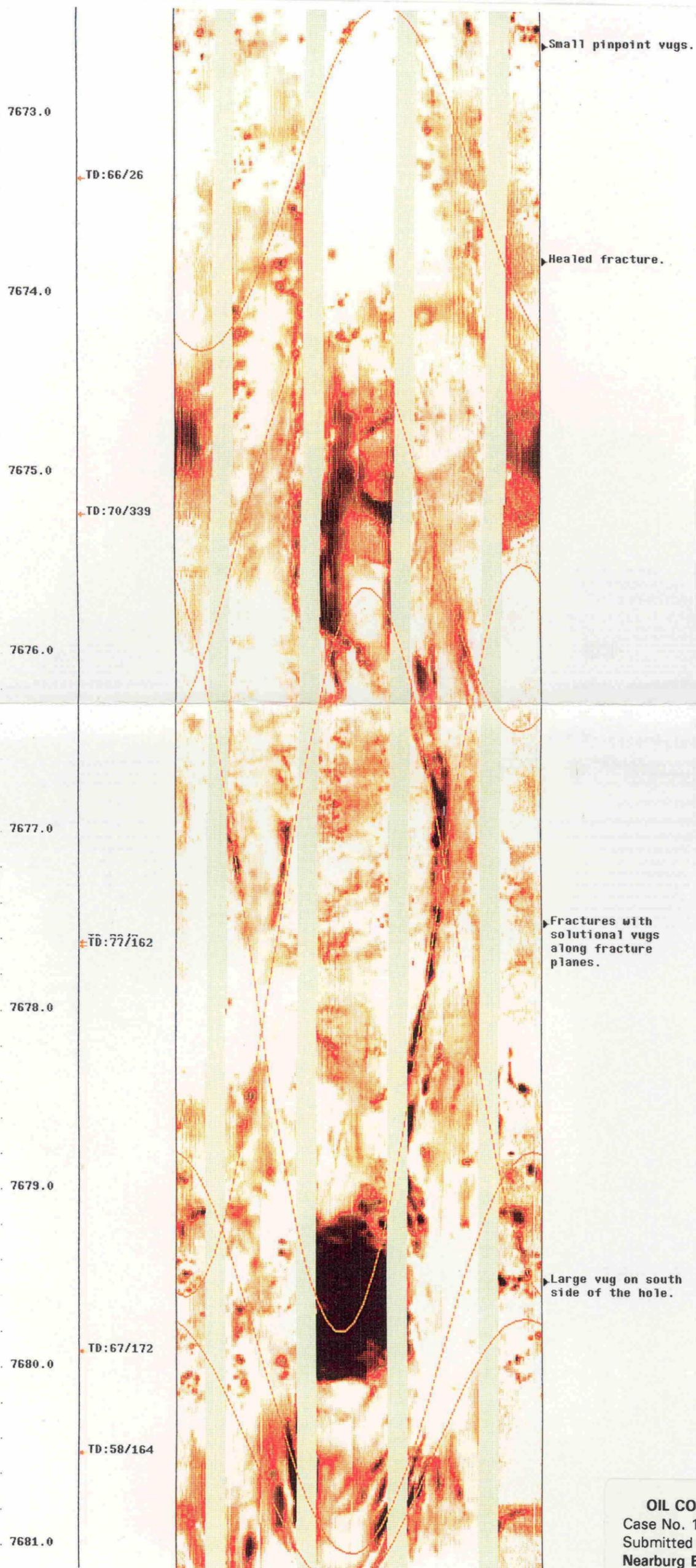
Nearburg Exploration Company

Hearing Date: August 10, 1995

Barrels of Oil in Place  
Thousands



## Cisco/Canyon Formation Micro Imager Example



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

**Calculated Porosity vs. Data Acquisition Technique**

5.6%

10.3%

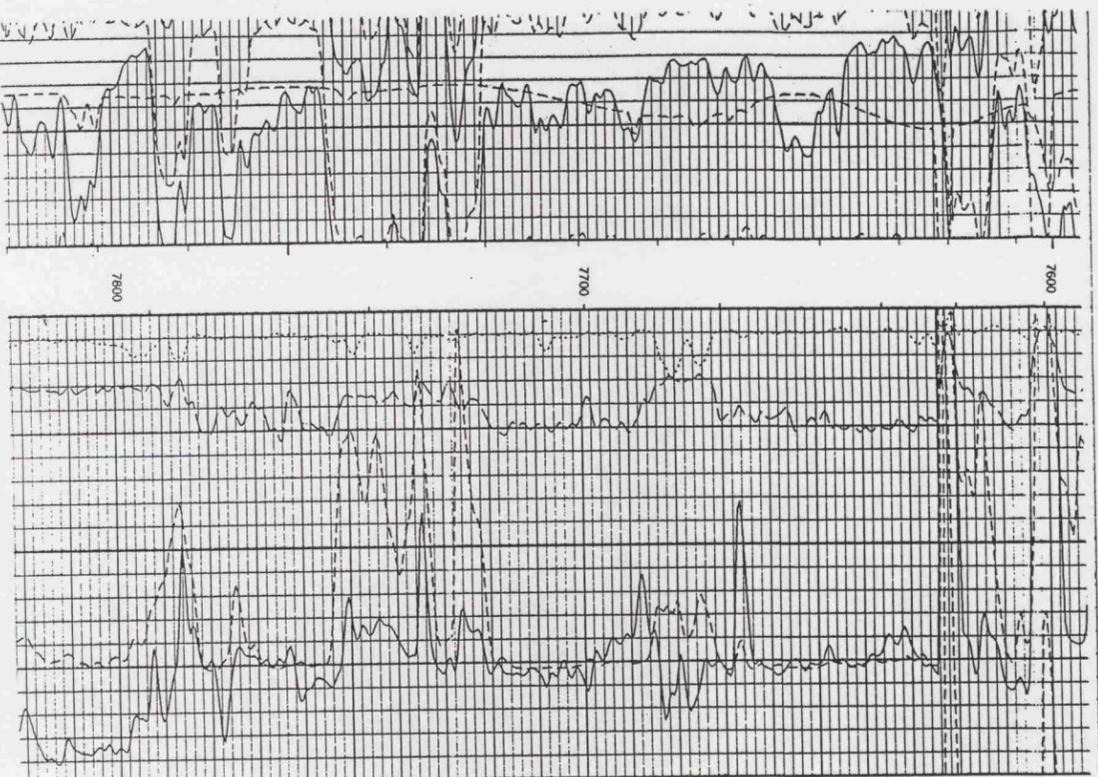
Uranium Indicator  
 From CGR to SGR

Spectroscopy Gamma Ray (SGR)	100	MAIN LOG
Computed Gamma Ray (CGR)	100	
Caliper (CAL)	16	
Tension (TRES)	0	

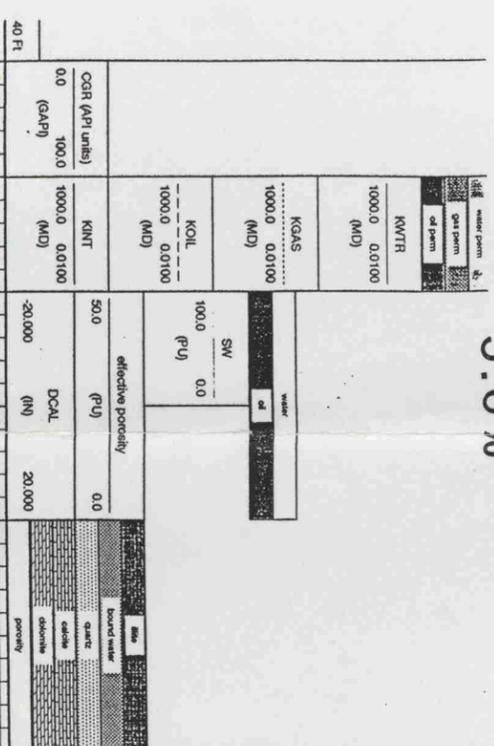
Photoelectric Factor (PEF) 10

Neutron Porosity (NPHI) -4.1  
 Density Porosity (DPHI) -4.1  
 Bulk Density Correction (DBUC) 0.45

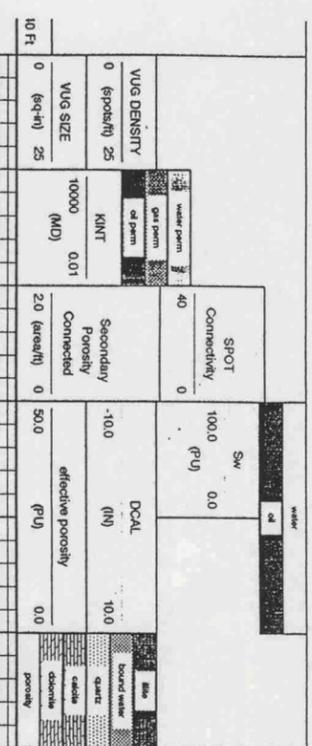
3.6%



A' Dolomite



A' Dolomite



Conventional Log

High Resolution Sampling

SPOT Technique