EPOCH WELL LOGGING, INC.

COMPANY	ARCO OIL AND GAS CO.
WELL	CC # 12-19-65
FIELD	Mist
LOCATION	1844'S and 1210'E from the NW corner of section 19, T6N-R5W.
COUNTY, STATE	Columbia, Oregon
API WELL INDEX NO.	
ELEVATION	939'G.L. 947'K.B.
DATES	FROM 9-18-88 TO 9-25-88
DEPTHS	FROM 40'K.B. TO 3209'K.B.
SPUD DATE	9-18-88
DRILLING CONTRACTOR	Paul Graham, Rig #4
MUD COMPANY	Baroid
LOGGING GEOLOGISTS	John Day Jim Eastes

ABBREVIATIONS

NB	BIT	MW	MUD WEIGHT
RRB	RERUN BIT	VIS	FUNNEL VISCOSITY
RTB	RE-TIP BIT	PV	PLASTIC VISCOSITY
CB	CORE BIT	YP	YIELD POINT
T.G.	TRIP GAS	FL	FLUID LOSS (cc/30 min)
S.G.	SURVEY GAS	CL	PPM CHLORIDE ION
W.G.	WIPER GAS	RM	MUD RESISTIVITY
C.G.	CONNECTION GAS	RMF	FILTRATE RESISTIVITY
WOB	WEIGHT ON BIT	LAT	LOGGED AFTER TRIP
RPM	ROTARY REV/MIN	NR	NO RETURNS
PP	PUMP PRESSURE	PR	POOR RETURNS
SPM	STROKES/MIN	MUD TYPE	E-Z Mud

CASING RECORD

9 5/8" AT 789'K.B.

HOLE SIZE

12 1/4" AT 789'K.B.

6 1/4" AT 3209'K.B.

SAND/SANDSTONE — CLAY — LIMESTONE — TUFF — LIGNITE
SHALE — DIATOMITE — DOLOMITE — FOSSIL — GLAUCONITE
SILTSTONE — CONGLOMERATE — BASALT — MICA — PYRITE

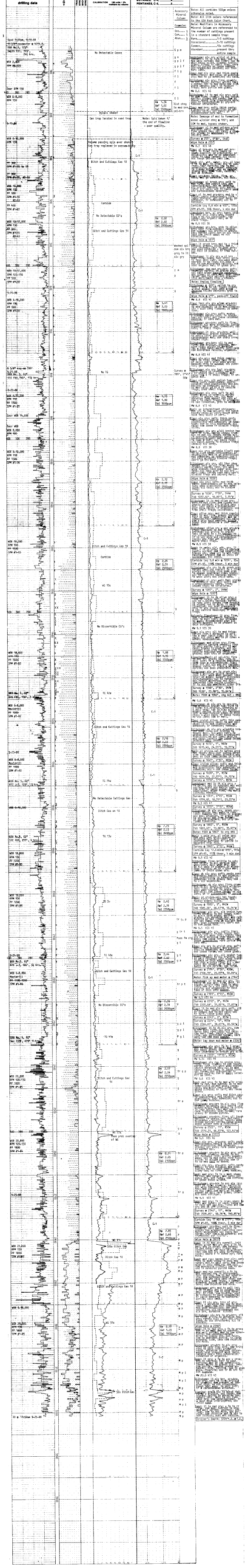
OIL: BASED ON LIVE OIL IN UNWASHED CUTTINGS AND PERCENT STAINING AND FLUORESCENCE OF WASHED SAMPLES.

PENETRATION — DRILL RATE (FT/HR) drilling data | DEPTH | LITHOLOGY | ANALYSIS OF RETURNS: OIL (TRACE, STRONG TRACE, SHOW, STRONG SHOW); GAS — UNITS (DITCH — TOTAL GAS; CUTTINGS GAS; CALIBRATION 100 units = 2% methane by volume); CHROMATOGRAPH — PPM (METHANE, C-1; ETHANE, C-2; PROPANE, C-3; BUTANES, C-4; PENTANES, C-5) | REMARKS (LITHOLOGIC DESCRIPTION, MUD PROPERTIES, SURVEYS, OTHER TEST DATA)

Accessory Mineral Column

Example: Occ.... g Com.... G Abun.... G

Note: All carbides 500gm unless otherwise noted.

Note: All lith colors referenced to the GSA Rock Color Chart.

Note: Modifiers in Accessory Mineral Column are referenced to the number of cuttings present in a standard sample tray:
Rare..............1-5 cuttings
Occasional........5-10 cuttings
Common............10+ cuttings
Abundant..........present thru entire sample