

CORE LABORATORIES - CANADA, LTD.

Petroleum Reservoir Engineering

9211-P28-1-6

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DEC 17 1985

PERMEABILITY VALUES REPRESENT MEASUREMENTS ON
AIR-DRIED, NON-EXTRACTED SAMPLES ONLY. POROSITY
DERIVED FROM SUMMATION OF FLUIDS METHOD.

CORE ANALYSIS

Canada Oil and Gas Lands
Administration
Administration du pétrole et du gaz
des terres du Canada

DEC 27 1985

To: Eng.

File #:

PETRO-CANADA EXPLORATION INC.
PCI CANTERRA TWEED LAKE A-67
TWEED LAKE, NORTHWEST TERRITORIES
66 56'11" N LAT. 126 56'18" W LONG.
85-12-12

CANADA OIL AND GAS LANDS
ADMINISTRATION
ADMINISTRATION DU PÉTROLE ET DU
GAZ DES TERRES DU CANADA

JAN 28 1986

ENGINEERING BRANCH
GÉNIE

MICROFILMED
SUR MICROFILM:

CORE LABORATORIES - CANADA, LTD.

COMPANY	PETRO-CANADA EXPLORATION INC.
WELL	PCI CANTERRA TWEED LAKE A-67
FIELD	TWEED LAKE, NORTHWEST TERRITORIES
LOCATION	66 56'11" NLat. 126 56'18" WLong.

FORMATION	MOUNT CLARK
CURING EQUIPMENT	DIAMOND
CORE DIAMETER, (mm)	89
CORING FLUID	WATER BASE MUD

PAGE 1
FILE 70175-85-1593c
DATE 85-12-12
ANALYSTS CL

DEC 17 1985

FULL DIAMETER ANALYSIS

PERMEABILITY VALUES REPRESENT MEASUREMENTS ON AIR-DRIED, NON-EXTRACTED SAMPLES ONLY. POROSITY DERIVED FROM SUMMATION OF FLUIDS METHOD.

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CORE LABORATORIES - CANADA, LTD.

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WELL PCI CANTERRA TWEED LAKE A-67

FORMATION
CORING EQUIPMENT DIAMOND

PAGE 2
FILE 70175-85-1593c

DEC 17 1985

FULL DIAMETER ANALYSIS

PERMEABILITY VALUES REPRESENT MEASUREMENTS ON
AIR-DRIED, NON-EXTRACTED SAMPLES ONLY. POROSITY
DERIVED FROM SUMMATION OF FLUIDS METHOD.

Sample Number	Depth Metres (m)	m	Sample Rep.	Length	Permeability to Air Millidarcys			Perm. X m	Porosity		Residual Saturation (Frac of Pore Vol)				VISUAL EXAMINATION	
					mD Max.	mD 90 deg.	mD V		X	Porosity m	X	Bulk	Grain	Oil		Water

CORE NO. 2		1287.60 m - 1302.10 (core received 14.50 m) (10 Boxes)														
-	1287.60-88.74	1.14	-	-	-	-	-	-	-	-	-	-	-	-	sh shg	
15	1288.74-88.90	0.16	-	2.64	-	-	0.423	0.099	0.016	-	-	0.000	0.468			
16	1288.90-89.16	0.26	-	9.14	-	-	2.376	0.039	0.010	-	-	0.000	0.570			
SF 17	1289.16-89.28	0.12	-	0.14	-	-	0.017	0.094	0.011	-	-	0.051	0.369			
18	1289.28-89.83	0.55	-	0.80	-	-	0.440	0.134	0.074	-	-	trace	0.474			
SF 19	1289.83-90.15	0.32	-	-	-	-	-	0.167	0.053	-	-	0.000	0.664	frac		
20	1290.15-90.54	0.39	-	-	-	-	-	0.139	0.054	-	-	0.000	0.630	frac		
21	1290.54-90.97	0.43	-	0.74	-	-	0.318	0.096	0.041	-	-	0.000	0.279			
SF 22	1290.97-91.21	0.24	-	0.28	-	-	0.067	0.058	0.014	-	-	0.000	0.277			
23	1291.21-91.46	0.25	-	2.31	-	-	0.577	0.126	0.031	-	-	0.000	0.373			
24	1291.46-91.75	0.29	-	0.97	-	-	0.281	0.071	0.021	-	-	0.000	0.626			
SF 25	1291.75-91.94	0.19	-	0.37	-	-	0.070	0.074	0.014	-	-	0.000	0.713			
SF 26	1291.94-92.13	0.19	-	0.12	-	-	0.023	0.078	0.015	-	-	0.000	0.736			
27	1292.13-92.51	0.38	-	8.28	-	-	3.146	0.132	0.050	-	-	0.000	0.551			
28	1292.51-93.14	0.63	-	23.9	-	-	15.057	0.109	0.069	-	-	0.000	0.347			
SF 29	1293.14-93.59	0.45	-	0.21	-	-	0.095	0.094	0.042	-	-	0.073	0.368			
30	1293.59-93.81	0.22	-	2.21	-	-	0.486	0.054	0.012	-	-	0.131	0.366			
SF 31	1293.81-94.53	0.72	-	-	-	-	-	0.103	0.074	-	-	0.067	0.298	frac		
SF 32	1294.53-94.68	0.15	-	0.03	-	-	0.005	0.102	0.015	-	-	0.068	0.380			
SF 33	1294.68-95.08	0.40	-	0.06	-	-	0.024	0.068	0.027	-	-	0.134	0.200			
SF 34	1295.08-95.71	0.63	-	0.27	-	-	0.170	0.111	0.070	-	-	0.157	0.239			
SF 35	1295.71-95.92	0.21	-	0.58	-	-	0.122	0.134	0.028	-	-	0.173	0.206			
AST 34	1295.92-96.28	0.36	-	0.27	-	-	0.097	0.111	0.040	-	-	0.157	0.239			
AST 32	1296.28-96.35	0.07	-	0.03	-	-	0.002	0.102	0.007	-	-	0.068	0.380			
36	1296.35-96.65	0.30	-	0.36	-	-	0.108	0.091	0.027	-	-	0.170	0.209			

THESE ANALYSES, OPINIONS OR INTERPRETATIONS ARE BASED ON OBSERVATIONS AND MATERIALS SUPPLIED BY THE CLIENT TO WHOM; AND FOR WHOSE EXCLUSIVE AND CONFIDENTIAL USE; THIS REPORT IS MADE. THE INTERPRETATIONS OR OPINIONS EXPRESSED REPRESENT THE BEST JUDGMENT OF CORE LABORATORIES - CANADA LTD. (ALL ERRORS AND OMISSIONS EXCEPTED); BUT CORE LABORATORIES - CANADA LTD. AND ITS OFFICERS AND EMPLOYEES, ASSUME NO RESPONSIBILITY AND MAKE NO WARRANTY OR REPRESENTATIONS, AS TO THE PRODUCTIVITY, PROPER OPERATIONS, OR PROFITABLENESS OF ANY OIL, GAS OR OTHER MINERAL WELL OR SAND IN CONNECTION WITH WHICH SUCH REPORT IS USED OR RELIED UPON.

CORE LABORATORIES - CANADA, LTD.

COMPANY PETRO-CANADA EXPLORATION INC.
WELL PCI CANTERRA TWEED LAKE A-67

FORMATION
CORING EQUIPMENT DIAMOND

PAGE 3
FILE 70175-85-1593c

DEC 17 1985

FULL DIAMETER ANALYSIS

PERMEABILITY VALUES REPRESENT MEASUREMENTS ON
AIR-DRIED, NON-EXTRACTED SAMPLES ONLY. POROSITY
DERIVED FROM SUMMATION OF FLUIDS METHOD.

Sample	Depth	m	Sample	Permeability to Air			Perm.	Porosity	Density (kg/m3)	Residual Saturation			
Number	Metres (m)	Rep.	Length	Millidarcys			X	Porosity	X	(Frac of Pore Vol)			
				mD Max.	mD 90 des.	mD V	m	m	Bulk	Grain	Oil	Water	VISUAL EXAMINATION

CORE NO. 2 CONTINUED

SP 37	1296.65-97.15	0.50	-	0.60	-	-	0.300	0.100	0.050	-	-	0.197	0.268
SP 38	1297.15-97.90	0.75	-	0.52	-	-	0.390	0.081	0.061	-	-	0.141	0.316
AST 36	1297.90-97.98	0.08	-	0.36	-	-	0.029	0.091	0.007	-	-	0.170	0.209
SP 39	1297.98-98.38	0.40	-	0.25	-	-	0.100	0.076	0.030	-	-	0.179	0.384
SP 40	1298.38-98.59	0.21	-	0.06	-	-	0.013	0.058	0.012	-	-	0.000	0.771
41	1298.59-98.88	0.29	-	-	-	-	-	0.070	0.020	-	-	0.000	0.806
-	1298.88- 2.10	3.22	-	-	-	-	-	-	-	-	-	-	sh shw

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CORE LABORATORIES - CANADA, LTD.

CODE KEY - DESCRIPTIONS

anhg	= Anhydrite	hal	= Halite (Salt)	SCAL	= removed for special core analysis
AST	= Appears similar to	i	= Intergranular	sdg	= Sandy
bk	= Break	lam	= Laminar (Laminated)	SEM	= Scanning electron microscope analysis
bldr	= Boulder	lmg	= Lims	sh	= Shale
c	= Coarse	ls	= Limestone	sltst	= Siltstone
calc	= Calcite (areous)	lv	= Large vug	slty	= Silty
carb	= Carbonaceous	m	= Medium	ss	= Sandstone
cbl	= Cobble	mi	= Mud invaded	sshy	= Slightly Shaly (<20%)
CEC	= Cation exchange capacity	mic	= Micaceous	sty	= Stylolite (ic)
egl	= Conglomerate	mshg or shg	= Moderately shaly (20-40%)	sulf	= Sulphur
cht	= Chert	mv	= Medium vug	sv	= small vug
coal	= Coal/Coal Inclusion	NA	= Not analysed by request	tr	= Trace
dol	= Dolomite	NP	= No permeability measurement	TS	= Thin section
f	= Fine	ool	= Oolitic	uncons	= Unconsolidated
fest	= Ironstone	OB	= Overburden	vfrac	= Vertical fracture
foss	= Fossil (iferous)	P	= Preserved for future studies	vf	= Very fine
frac	= Fracture	pbl	= Pebble	VOB	= Vertical overburden sample
fri	= Friable	POA	= Portion removed for oil analysis	vshg	= Very shaly (>40%)
glauc	= Glauconite (ic)	ppv	= Pinpoint Vug	vug	= Vuggy (ular)
grnl	= Granule	PSA	= Particle size analysis	*	= broken core
gyp	= Gypsum	pyr	= Pyrite (ic)	**	= Permeability > 10240 mD
h frac	= Horizontal fracture	pyrbit	= Pyrobitumen	SA	= Sieve Analysis

CLEANING

Solvent	TOLUENE
Extraction Equipment	CO2/VAPOR PHASE
Extraction Time	36 HOURS/18 HOURS
Drying Equipment	FRICTION AIR
Drying Time	1 HOUR/2 HOURS
Drying Temperature	90 DEGREES C

ANALYSIS

Pore volume measured by Boyle's Law in a Hassler holder using He
 Grain vol msrd by Boyle's Law in a modified U.S.B.M. porosimeter using He
 Grain volume measured by Boyle's Law in a matrix cup using He
 Bulk volume measured by caliper
 Bulk Volume by Archimedes Principle
 X Porosity determined by summation of fluids (retort)
 Fluid saturations by retort on end pieces of full diameter samples
 X Fluid saturation by retort
 Water saturations by Dean-Stark
 Oil saturations by weight difference in Dean-Stark
 Permeabilities measured on 20mm cubes
 X Permeabilities measured on 25.4 mm diameter drilled plugs
 X Core Gamma Composite
 Core Gamma Spectral

REMARKS:

PERMEABILITY VALUES REPRESENT MEASUREMENTS ON
 AIR DRIED, NON-EXTRACTED SAMPLES ONLY. POROSITY
 DETERMINED FROM SUMMATION OF FLUIDS METHOD.

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COMPANYPETRO-CANADA EXPLORATION INC.

FILE NO.70175-85-1593C

WELLPCI CANTERRA TWEED LAKE A-67

DATE

FIELDTWEED LAKE

FORMATIONMOUNT CLARK

ELEV.

PROVINCENORTHWEST TERRITORIES

DRLG. FLD.WATER BASE MUD

CORES1,2

LOCATION66° 56'11" NLAT. 126° 56'18" WLONG.

CORRELATION COREGRAPH

DEC 17 1983

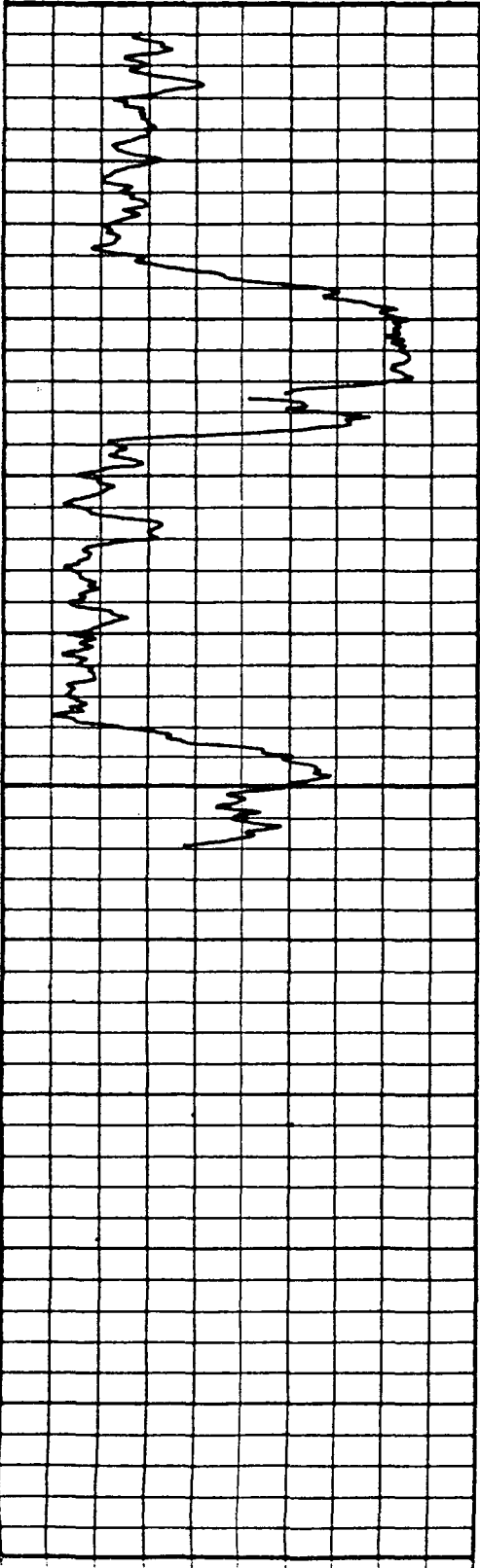
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VERTICAL SCALE: 10 cm = 24m

Gamma Ray

API UNITS

0200



Depth
meters

1275

1285

1295

1305

1315

1325

Grain Density (Kg/m³) — — —

25502650275028502950

Porosity (FRACTION) — — —

.60.45.30.150

