

WELL CARD

CANADA OIL AND GAS LANDS ADMINISTRATION
ENGINEERING BRANCH

WELL NAME: PCI et al Tweed Lake M-47			D.A. # 1213			STATUS: Suspended Gas			AAPG CLASS:			COGLA CLASS:		
PROJECT NUMBER:			U.W.I.: 300M476700125450			TD: 1420 m KB			ELEVATIONS: KB /KB: 435.22 m			KB /GL: 429.1 m		
OPERATOR: Petro-Canada Inc.						PERMIT OR LEASE NO. (STATE IF INTERIM):								
AREA: Mainland N.W.T.			FIELD/POOL: N/A			REPORT REC'D:			COMPLETE:			RELEASED:		
SPUD DATE: 85-01-11			DRLG COMPLETE: 85-02-14			RIG RELEASED: 85-02-24								
LOCATION-LATITUDE: 66° 56' 47.11" N						LONGITUDE: 125° 54' 09.42" W						SIDE TRACK: None		
												WELL KICK: None		
CONTRACTOR: Atco Drilling Ltd			RIG: Atco/Equatak #76			LOST CIRCULATION: 273 - 350 m								
RIG TYPE: Triple diesel mechanical			REGISTRY: N/A			FISHING JOBS: one - 10 hrs to fish twist-off with an overshot								
STATION KEEPING: N/A						DEVIATED HOLE: N/A (Maximum hole angle was 2°)								
						MUD TYPE: Salt saturated Gel/chem (760 m to 1420 m)						TD/WT: 1270 kg/m ³		
DAYS-TOTAL: 44			ROB: 356.25 hrs.			WOW: N/A			AVG. PROPERTIES -- VIS: 34 - 64 s/l			WL: 17.6 cm ³ pH: 10		
WELL COST:			RIG COST:											
WELL COST/DAY:			RIG COST/DAY:											
REMARKS (e.g. Casing, Cementing, Deviation, Hole Problems, Equipment left in hole, Accidents) - Surface hole drilled with Visgel/Kelzan XC Polymer mud to 321 m. Stable foam used to drill from 321 - 760 m of the surface hole. Salt saturated Gel/chem mud used for the main hole. - Surface casing cemented in two stages with an ECP at 48.5 m KB and a D.V. tool above it. Cement bond log indicated that the top of the cement from first stage was 350 m KB. ✓ - All DST's done in open hole. Production casing was then run and it is not perforated or drilled out. - Best DST (DST #4) flowed gas at a final rate of 2.5 mm cf/d (72041 $\frac{m^3}{d}$) from the Mount Clarke formation (sandstone).						CASING	SIZE (mm)	DEPTH (RT) (m KB)	CASING AND CEMENTING DETAILS			ABANDONMENT PLUGS		
												TYPE	INTERVAL	
						Cond. Pipe	508	24	140 Kg/m, K-55, BT & C					
									10.8 t of Arctic Set Cement, 3m ³ CEMENT TO SURFACE					
						Cond. Casing	340	64	101 Kg/m, K-55, BT & C					
									18 t of Arctic set cement, 2m ³ CEMENT TO SURFACE					
						Surf.	245	760	60 Kg/m L-80 & 65 Kg/m S00-95, LT&C			1 st STAGE CMT. @ 370-350		
									64 t G & 4 t G (2 stage cement job)			2 nd ✓ ✓ @ SURFACE		
						Main.	178	1418	43 Kg/m N-80 & S00 - 95, LT & C					
									46 t G & 7 t G (tail), 2m ³ CEMENT TO SURFACE.					
						EQUIPMENT LEFT ON SEA FLOOR: N/A								

Geological Province _____

LOGS		FLOW TESTS (Test type & no., interval, flow times, produced fluids and rates, stimulation)	CORES								
TYPE	INTERVAL		NO	INTERVAL	REC.	LITHOLOGY					
DIL-GR	760 - 64	D.S.T. #1: 1212 - 1227 m (Mr. Clarke formation) - PF: 5 min. / ISI: 90 min/ VO: 20 min./FSI:120 min - bottom hole conventional DST - 65 m of slightly gas cut mud recovered.	1	1217-1224	7 m	Sandstone, siltstone, shale, sandstone					
LDT/GR/CAL	760 - 64		2	1400-1409	8.57 m	Shale					
BHSC	760 - 64										
LSS-GR	760 - 64										
DLL - MSFL	1420 - 760										
BHCS	1420 - 760	D.S.T. #2: 1188 - 1199 m (Mt. Cap formation) - flow times: 5/86/212/600 - inflate straddle DST - 35 m of gas cut mud recovered.									
CNL - LDT	1420 - 760										
NGT - AMS	1420 - 760										
SHDT	1420 - 760										
Velocity survey at T.D.											
		D.S.T. #3: 1155 - 1170 m (Mt. Cap formation) - flow times: 5/10/60/180 - inflate straddle DST - 10 m of mud recovered.									
		D.S.T. #4: 1221 - 1236 m (Mt. Clarke formation - Sandstone) - flow times: 5/120/420/960 - inflate straddle DST - strong blow, gas to surface in 4 minutes. - well flowed gas at rates up to 84229 m ³ /day - final gas flow rate was 72041 m ³ /day (2.5 mmcf/d) - 170 m of condensate recovered.									
FORMATION INTERVAL TESTS*		D.S.T. #5: 1209 - 1216.5m (Mt. Clarke) - flow times: 5/120/240/480 - weak blow building to strong. Estimated flow rates were low (ranging from 500 to 800 m ³ /d). - 35 m of gas cut mud recovered.	MUD DATA								
TOTAL NO.	INTERVAL		DEPTH	2	4	6	8	10	12	14	16
34	892.9-1284 m		WEIGHT (PPG)								
			STIMULATION				FRACTURE TESTS				
			TYPE	INTERVAL	AMOUNT USED PROPPING AGENT		DEPTH	EQUIPMENT MUD WEIGHT			
* IF NO OTHER TESTS, EXPAND RES UNDER "FLOW TESTS"		HCL				760 m KB	3762 $\frac{\text{Kg}}{\text{m}^3}$				
		HF									
		FRACTURE									
						INITIALS <i>KS</i>					
						DATE 85 06 12					