

**APPENDIX 4**  
**BOREHOLE LOGS**

SANDWELL EPC INC	DATE OF BOREHOLE: 19 - 10 - 05	BOREHOLE NO: BH-1
PHASE 1 - CACOUNA ENERGY	DATE OF WATER LEVEL: 22 - 10 - 05	PROJECT NO: S-05-1743
GROS CACOUNA, QUEBEC		ELEVATION: 4.00 m
SAMPLE TYPE	<input checked="" type="checkbox"/> SPLIT SPOON <input checked="" type="checkbox"/> NQ CORE	
BACKFILL TYPE	<input checked="" type="checkbox"/> SAND	

DEPTH(m)	ELEVATION DEPTH	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT(N)	TESTS	SLOTTED STANDPIPE	PENETRATION IND. N				DEPTH(m)
									20	40	60	80	
0	0.23		QUARRY FINES Fractured SANDSTONE bedrock	X	1	66/ 9"						0	
1	2.73		Solid grey SANDSTONE bedrock 200 to 300 mm long pieces becoming laminated with fine interbeds towards bottom. Weathered fractures dipping at 30° and 60° and thin 1 to 3 mm cemented veining.  Solid except for the first metre of blast zone.		2		Recovery: 91% RQD: 65%					1	
2	1.27			3		Recovery: 97% RQD: 80%					2		
3				4		Recovery: 97% RQD: 82%					3		
4				5		Recovery: 100% RQD: 87%					4		
6	-1.82 5.82		Solid MICROCONGLOMERATE 2 mm - 10 mm quartz and feldspar grains and one (1) 70° tight fracture at 6.7m depth.		6		Recovery: 100% RQD: 88%					6	
8	-3.64 7.64		Solid grey SANDSTONE Becoming laminated with fine interbeds with quartz and feldspar grains between 0 - 5 mm becoming more frequent and coarser grained (20 mm) with depth. Steeply dipping 50° to 60° tight fracure planes. 700 to 1300mm long pieces.		7		Recovery: 100% RQD: 100%					8	
10	-6.39 10.39		Solid MICROCONGLOMERATE quartz and feldpar grains (2mm - 20 mm) 50° fracture at 11m.		8		Recovery: 93% RQD: 92%					10	
11	-7.30 11.30			SANDSTONE grey, quartz and feldspar grains between 0 - 5 mm. One (1) weathered 50° fracture at 13 metres.		9		Recovery: 100% RQD: 100%					11
13	-9.23 13.23		Silty SANDSTONE dark grey with 60° and 80° weathered thin (1mm) fracture planes throughout.		10		Recovery: 100% RQD: 100%					13	
15	-10.96 14.96		End of borehole		11		Recovery: 63% RQD: 17%					15	

BOREHOLE-TEST 1743-1.GPJ JBAI.GDT 14-11-05

SANDWELL EPC INC	DATE OF BOREHOLE: 20 - 10 - 05	BOREHOLE NO: BH-2
PHASE 1 - CACOUNA ENERGY	DATE OF WATER LEVEL: 22 - 10 - 05	PROJECT NO: S-05-1743
GROS CACOUNA, QUEBEC		ELEVATION: 3.50 m

SAMPLE TYPE  NQ CORE

BACKFILL TYPE  SAND

DEPTH(m)	ELEVATION DEPTH	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT(N)	TESTS	SLOTTED STANDPIPE	RQD %				DEPTH(m)
									20	40	60	80	
0	0.05		ORGANIC MATTER QUARRY FINES										0
1	2.53		Fractured grey SANDSTONE bedrock Water lost at 1.7metres. Broken core. 20°, 50°, and 80° weathered fractures from 1 to 2.5 metres.		1		Recovery: 60% RQD: 12%						1
2	0.97				2		Recovery: 75% RQD: 0						2
3	0.73		Solid grey SANDSTONE bedrock  15° and 20° fractures from 2.5 to 8.5 metres.  Minor number of 60° to 70° fractures.  5° and 70° fractures between 8.5 to 9 metres.		3		Recovery: 97% RQD: 75%						3
4	2.77				4		Recovery: 100% RQD: 80%						4
5			Thin (10mm) seam of grey silt and sand at 9 metres.  Four (4) 500mm long pieces. Remaining pieces 20 to 250mm long.		5		Recovery: 97% RQD: 73%						5
6					6		Recovery: 100% RQD: 63%						6
7			Laminated SANDSTONE fine interbeds of grey and dark grey sandstone  20mm seam of grey silt and sand at 10.4 metres.  5° and 50° fractures from 9 to 10.39 metres (200 to 300mm pieces). Fracture along large calcite vein at 12.5 metres dipping at 60° . 40°, 60°, and 80° cemented calcite veins throughout. 12° fractures from 13 to 14.5 metres. Three (3) core pieces 600 to 1400mm long below 10 metres		7		Recovery: 100% RQD: 62%						7
8					8		Recovery: 100% RQD: 92%						8
9	-5.49		MICROCONGLOMERATE Thin layer between 14.5 and 14.52 metres with grains from 2mm to 20mm. Laminated SANDSTONE fine interbeds of grey and dark grey sandstone  One (1) 12° tight fracture and , 40°, and 60° cemented calcite veins. End of borehole		9		Recovery: 98% RQD: 87%						9
10	8.99				10		Recovery: 100% RQD: 100%						10
11	-11.00												11
12	-11.46												12
13	14.96												13
14													14
15													15
16													16
17													17
18													18

BOREHOLE-TEST 1743-1.GPJ JBAI.GDT 14-11-05

SANDWELL EPC INC	DATE OF BOREHOLE: 20 - 10 - 05	BOREHOLE NO: BH-3
PHASE 1 - CACOUNA ENERGY	DATE OF WATER LEVEL: 22 - 10 - 05	PROJECT NO: S-05-1743
GROS CACOUNA, QUEBEC		ELEVATION: 3.40 m

SAMPLE TYPE  NQ CORE

BACKFILL TYPE  SAND

DEPTH(m)	ELEVATION DEPTH	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT(N)	TESTS	SLOTTED STANDPIPE	RQD %				DEPTH(m)
									20	40	60	80	
0	3.10	OC	QUARRY FINES									0	
0.30			Broken grey SANDSTONE bedrock (50 to 150 mm cores)		1		Recovery: 94% RQD: 29%					1	
1	2.28		75 mm reddish brown seam at 1.25 metres.										
1.12													
1.88													
2	1.52		grey fine grained SANDSTONE with broken cores along vertical calcite filled fractures between 2 to 4-metre depth. Cores - 500 mm long. Some small pieces 20 to 50 mm. 70° tight fracturs (3)		2		Recovery: 97% RQD: 65%					2	
3													
4	-0.74						Recovery: 43% RQD: 0					3	
4	4.14		Solid MICROCONGLOMERATE with quartz and feldpar grains 2 to 10 mm in diameter		4		Recovery: 100% RQD: 95%					4	
5			Fractures: 1 x 12° and 1 x 70°									5	
6	-2.42											6	
6	5.82		SANDSTONE, laminated Thin calcite veins (<1mm thick) dipping at 70°		5		Recovery: 100% RQD: 62%					6	
7												7	
8	-4.12											8	
8	-4.45		MICROCONGLOMERATE Quartz and feldspar grains from 2mm to 5mm		6		Recovery: 97% RQD: 82%					8	
9	7.85		SANDSTONE, laminated 20°, 60°, and 80° fractures.									9	
10			Significant fracturing between: 7 to 7.5 metres - 70° fracture joints 10 to 10.3 metres - 30° fracture joints		7		Recovery: 100% RQD: 83%					10	
10	-6.91											10	
11	10.31		End of borehole									11	
12												12	
13												13	
14												14	
15												15	
16												16	
17												17	
18												18	

BOREHOLE-TEST 1743-1.GPJ JBAI.GDT 14-11-05