



**PETRO TECH PTY. LTD.**

**CUTTINGS DESCRIPTIONS**

**WELL NAME:** Alberton 1

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**GEOLOGIST:** Ingrid Campbell

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Interval (m)	%	Description
0-5	60	SAND: light brown- reddish- brown, coarse to pebble, dominantly very coarse, subangular to subrounded, poorly sorted, no visible cement, trace orange brown argillaceous matrix, clear to opaque quartz grains often with orange iron oxide staining, unconsolidated, very good inferred porosity, no oil fluorescence.
	40	CLAY: light grey, very soft, dispersive, silty.
5-10	70	CLAY, as for 0-5m.
	30	SAND: light brown, as for 0-5m.
10-15	70	SAND: clear to opaque quartz grains, as for 5-10m.
	30	CLAY: light brown to cream, slightly silty, very soft, dispersive, moderately sticky.
15-20	100	CLAY: light brown to light grey, soft, dispersive, sticky, rare shell fragments
20-25	100	CLAY: light brown to medium grey, as for 15-20m.
25-30	90	SAND: off-white to light grey, coarse to very coarse, dominantly coarse, angular to sub-rounded, poorly sorted, no visible cement, clear to opaque quartz grains, unconsolidated, good to very good inferred porosity, no oil fluorescence.
	10	CHARCOAL FRAGMENTS: dark brown-med .brown , fine - coarse carbonaceous charcoal detritus, earthy lustre, soft, splintery, loose, dispersive, no visible matrix, unconsolidated . No porosity, no oil fluorescence.
30-35	60	SAND: medium-dark brown, coarse to very coarse, as for 25-30m
	40	CLAY: dark brown, soft, dispersive, slightly fissile
35-40	95	CLAY: dark brown, ligneous,,slightly silty, firm
	5	SAND: as for 30-35m
40-45	80	SAND: reddish-brown to clear, coarse to very coarse , dominantly coarse, dominantly sub-rounded, mod. sorted, unconsolidated, good inferred porosity, no oil fluorescence..
	15	COAL: dark brown, carbonaceous, earthy lustre, firm to mainly soft.
	5	CLAY: dark brown, as for 35-40m.
45-50	80	SAND: as for 40-45m.
	20	COAL as for 40-45m
50-55	60	SAND: as for 45-50m
	40	COAL : as for 45-50m

Interval (m)	%	Description	PAGE: 2
55-60	70	COAL as for 50-55m	
	30	SAND: as for 50-55m	
60-65	90	COAL: as for 55-60m	
	5	SAND: clear to white quartz grains, otherwise same as for 55-60m	
	5	CLAY: grey-brown, ligneous, soft, dispersive, slightly silty	
65-70	90	COAL: as for 60-65m	
	10	SAND: as for 60-65m	
70-75	90	COAL: as for 65-70m	
	10	SAND: as for 65-70m	
75-80	95	COAL: as for 70-75m	
	5	SAND; as for 70-75m	
80-85	100	CLAY: light brown-cream, sticky, massive, non-dispersive.	
85-90	60	COAL:dark brown , otherwise as for 75-80m.	
	30	CLAY: dark brown, very fine ligneous fragments throughout, moderately dispersive.	
	10	SAND: white-clear, medium to fine, sub-angular to sub-rounded, poorly sorted, no visible cement, clear to opaque quartz grains, unconsolidated, good to very good inferred porosity, no oil fluorescence.	
90-95	90	COAL: as for 85-90m	
	10	SAND: white-light brown, coarse to very coarse, minor to gravel,sub-angular to sub-rounded, poorly sorted, no visible cement, clear to opaque quartz grains, some iron staining, unconsolidated, good to very good inferred porosity, no oil fluorescence.	
95-100	100	COAL: as for 90-95m	
100-105	100	COAL: as for 90-95m	
105-110	100	SAND: cream-off-white, medium to coarse, dominantly medium, sub-angular to sub-rounded, well sorted, no visible cement, clear to opaque quartz grains, unconsolidated, excellent good inferred porosity, no oil fluorescence.	
Core 1	109-112.5	CUT 3.7 m: RECOVERED 3.57 m : 97% recovery. See full core description report. 100% SAND: black,ligneous, fine to medium, occasionally coarse , sub-angular to sub-rounded, moderately-wellsorted sorted, clear to opaque quartz grains, unconsolidated, very good inferred porosity, no oil fluorescence. Moderate orange-yellow cut, petrol.odour, slippery feel.	
Core 2	112.7 - 113.7	CUT 1 m: RECOVERED 1m: 100% recovery. See full core desription report. SAND, black, ligneous in top 10 cm of core, as for Core 1: 99% of core is COAL, dark brown, as for 100-105m.	

Interval (m)	%	Description	PAGE: 3
Core 3	113.7 - 118.2	CUT 4.5m: RECOVERED 4.5m: 100% recovery. See full core description report. 100% COAL, dark brown as for Core 2.	
Core 4	118.2 - 122.7	CUT 4.5m: RECOVERED 2.7 m: 60% recovery. See full core description report. 118.2-118.8m. COAL dark brown as for Core 3 118.8-122.7m SAND, black as above in Core 2	
Core 5	122.7 - 127.2	CUT 4.5m: RECOVERED 1.1m :24.4% recovery See full core description report. 122.7-127.2m 100% SAND, black, as above in Core 4, mixed with extremely fine white spotted, dispersive clay matrix	
127-130	98%	SAND, white-cream, medium to coarse, mostly medium grained, sub angular to sub rounded, clear to frosted quartz grains,, some iron staining, loose, moderately sorted. Excellent visual porosity, no fluorescence, no cut, no odour.	
	2%	COALY FRAGMENTS, dark brown, dispersed,coaly material, loose.	
130-145	100%	SAND, white-cream, as for 127-130 metres.	
145-150	98	SAND, white-cream, as for 130-145 metres.	
	2	CLAY, buff-cream, soft, slightly ligneous, dispersive.	
	2	COALY FRAGMENTS: dark brown, dispersed coaly material, loose.	
Core #6	148.5 - 153.0 m	CUT 4.5m: RECOVERED 1.3m:24.4% recovery. See full core description report. 151.9-152.45m . SAND: light brown-cream,mainly fine grained, quartz grains in a light brown-cream clayey matrix .Very good visual porosity, no fluorescence, milky white-bluish cut leaves yellow residue. 152.45-153m. COAL: dark brown, dispersed pyritic nodules, strong H 2 S odour. Conchoidal fracture.Vertical joints present. Iridescent rings mostly along fractures. No fluor, strong bluish- white cut, leaves yellow residue.	
Core #7	153.0 - 156.0 m	CUT 3m: RECOVERED 2.2m: 73.3% recovery. See full core description report. 153-153.4m. COAL : as for Core #6 153.4- 153.6m. SAND: black, ligneous, med-fine grained, well sorted, oily feel. H 2 S odour Iridescent rings in patches on core. Non Fluor. Excellent porosity. Bluish-white cut,leaves a yellow residue.	
Core #8	156.0 - 159.0 m	Cut 3m: Recovered 3.0m: 100% recovery. See full core description report. COAL , as for Core #7	
Core #9	159.0 - 162.0 m	Cut 3m: Recovered 3.0m: 100% recovery. See full core description report. COAL , as for Core #8	

Interval (m)	%	Description	PAGE: 4
Core #10 162.0 - 165.0 m	162.0 - 165.0 m	Cut 3m: Recovered 3.0m: 100% recovery. See full core description report. COAL , as for Core #9	
Core #11 165.0 - 166m	165.0 - 166m	Cut1m: Recovered 0.5m: 50% recovery. See full core description report. COAL , as for Core #10	
Core # 12 166.0 - 170.5 m	166.0 - 170.5 m	Cut 4.5m; Recovered 4.3m; 95.6% recovery. See full core description report. COAL , as for Core #10 and sandy coal.	
Core # 13 170.5 - 175.0 m	170.5 - 175.0 m	Cut 4.5m; Recovered 3.95m; 87.8% recovery. See full core description report. COAL, as for Core # 12	
Core #14 175.0 - 179.5 m	175.0 - 179.5 m	Cut 4.5m; Recovered 4.35m; 96.7% recovery. See full core description report. COAL with minor sand and clayey stringers along fractures;	
Core # 15 179.5 - 184.0 m	179.5 - 184.0 m	Cut 4.5m; Recovered 3.55m; 66.6% recovery. See full core description report. COAL with minor CLAY, BLACK SAND, oily film around quartz grains;exc por; bluish cut,yellow residue.	
Core #16 184.0 - 188.5 m	184.0 - 188.5 m	Cut 4.5m; Recovered 1.1m; 24.0% recovery. See full core description report. GRAVEL, black, pebbly, sub angular to sub rounded, mod.well sorted,v.fine silty matrix, unconsol, ligneous;oily feel.Exc.porosity. No Fluor. Strong bluish cut leaves yellow residue. Grading to thin interbeds of brown CLAY, BLACK GRAVEL and CLAYEY COAL	
188-190	90%  5% 5%	GRAVEL:white to cream, coarse to pebbly, predominantly pebbly quartz grains, clear, frosted, sub angular to subrounded, moderately sorted. Individual grains often coated with black oily film in surface pits;the coated grains give weak bluish cut;leave pale yellow residue. Excellent porosity; no fluorescence.  COAL: dark brown,fine carbonaceous fragments throughout.No fluorescence; very pale bluish cut: very pale yellow residue.  CLAY: light brown,carbonaceous, dispersive.	
190-195	90%  5% 5%	COAL: dark brown ,as above  SAND: cream, fine to medium grained,clear-frosted grains,occasional iron-staining,unconsolidated,well sorted. Some individual quartz grains coated in black film in pitted surface. Exc. porosity. No Fluor. No Cut.  CLAY: Light brown as for interval above..	
195-200	95%	SAND: cream,fine to medium grained, mostly medium,sub angular to sub rounded, unconsolidated,	
	5%	COAL: brown as for interval above.	
200-205	50%  50%	GRAVEL: white-cream,very coarse to pebbly, predominantly pebbly quartz grains, clear, frosted, sub angular to subrounded, moderately sorted, no visible matrix. Individual grains often coated with black oily film in surface pits;the coated grains give slow weak bluish cut;leave pale yellow residue. Excellent porosity; no fluorescence.  COAL: dark brown,as for interval above.	

Interval (m)	%	Description	PAGE: 5
205-210	70% 15% 5%	GRAVEL: as for interval above with occasional mica flakes, red lithic fragments. COAL: dark brown as for interval above. CLAY: light brown-fawn, fine carbonaceous fragments , soft,dispersive.	
210-215	60% 20% 10%	GRAVEL: as for interval above;Excellent porosity; no fluor; no cut SAND: white-clear,medium to fine grained,mostly medium, occ.carbonaceous fragments, well sorted ;some quartz grains have black film on pitted surface . Exc.porosity; no fluor; no cut. CLAY: Dark brown,ligneous,soft,dispersive.	
215-220	50% 15% 5%	GRAVEL: as for interval above SAND: as for interval above COAL: dark brown, as above.	
220-225	80% 18% 2%	GRAVEL: as for interval above. SAND:as for interval above with occasional micaceous flakes. COAL: as for interval above	
225-230	70% 25% 5%	GRAVEL: as for interval above SAND: as for interval above COAL: as for interval above	
230-235	100%	GRAVEL: White,very coarse to pebbly, mostly pebbly,becoming coarser, sub angular to sub rounded, predominantly frosted quartz grains,very well sorted,unconsolidated; no matrix. Rare quartz grains with black oily film. Excellent porosity.No fluor.No cut.	
235-240	100%	GRAVEL: as for interval above	
Core # 17	242 - 246.3 m	Cut; 4.3m;Recovered 3.9m: 89.3% recovery See detailed core description report. CLAY, COALY CLAY AND CLAYEY GRAVEL.	
Core #18	246.3 - 251.0 m	Cut 4.7m; Recovered 4.7m; 100% recovery See detailed core decription report. COALY CLAY: dull brown- grey,carbonaceous, grading to CLAY,dark brown.	
Core #19	251.0 - 255.6 m	Cut 4.6m; Recovered 4.6m; 100% recovery. See detailed core description report. 251.0-252.51m. COALY CLAY: dark brown, firm with carbonaceous bands throughout; grading to dark-light brown clay. 252.51-254.0m. ?VOLCANICS; weathered ,light bluish-grey and brown clay with large irregular mud and clay clasts throughout. 254.0-255.5m. SANDSTONE, light blue- grey-white, clear quartz grains, fine to very fine, well sorted, supported in a fine cream clay matrix, soft , dispersive, water soluble.	
Core #20	255.6 - 260.1 m	Cut 4.5m; Recovered 4.5m; 100% recovery. See detailed core description report. 255.6-258.5m. Weathered SANDSTONE, lt bl-lt gy,very fine grained ,sub angular to subrounded, well sorted in a fine bluish clay matrix. No por.No Fluor.No cut. 258.5-260.1m .CLAY, lt blue-lt gy, massive ;hard bands of iron fracture fill fractures.	

Interval (m)	%	Description	PAGE: 6
Core #21	260.1 - 264.6 m	Cut 4.5m; recovered 4.5m; 100% recovery. See detailed core description report. 260.1-264.6m. CLAY as above, mottled blue-green to occ. yellow, numerous hard bands of iron fracture fill.	
265-270	50% 45% 5%	CLAY: bluish-green, min. pyritic nodules, non-dispersive, mod.hard. QUARTZ SAND: clear, medium to coarse, loose, sub-angular to rounded COAL FRAG's: dark brown, cavings.	
270-276	70% 20% 5% 5%	CLAY: bluish-green, as above QUARTZ SAND as above Limestone fragments, white, calcareous, bryozoal, iron-stained. Cement cavings.	
276-279	100%	CLAY: bluish-green, as above: with fine black with elongated phenocrysts, quartz grains, v.fine grained, clear, angular; matrix mod. hard-soft, non-dispersive	
279-282	50% 50%	CLAY: bluish-green as above. CLAY: med.brown-orange, very soft, dispersive.	
282-285	70% 30%	CLAY: med.brown-orange as above. CLAY: bluish-green as above.	
285-288	95% 5%	SST: medium blue-grey, med. to fine grained, sub-angular to sub-rounded, poorly sorted qtz with common cream-white feldspars, rare black, white mica flakes, rare carbonate fill. No matrix visible. No matrix visible. Poor- mod. visual porosity. No fluor; no cut. CLAY: med.brown-orange as above.	
288-303	100%	SST, as above, medium to fine-grained; rare to common orange lithics, rare calcite frag's. Poor visual porosity. No fluor; no cut.	
303-306	90% 10%	SST as above. CLAY: Bluish-grey, non-dispersive, soft.	
306-309	100%	SST: medium-lt. grey, very fine grained quartz, sub-angular, mod. sorted, common feldspar, rare black coaly frag's, orange lithics. Poor visual porosity. No fluor; no cut.	
309-312	70% 30%	SST as above. CLAY: light brown-orange, very soft, loose, dispersive.	
312-327	100%	SST as above, medium to fine grained with rare orange lithics throughout. No fluor; no cut.	
327-330	90% 10%	SST as above. CLAY: medium grey, soft, dispersive.	
330-336	100%	SST as above, becoming medium grained.	
336-348	100%	SST as above, med- fine grained; abundant calcite fragments throughout; common pink-orange lithics. Moderate visual porosity. No fluor; no cut.	
348-351	95% 5%	SST: medium-light grey, dominantly feldspathic grains, cream-white, mod. hard, sub-angular, fine to medium grained, with grey quartz grains, chlorite frag's, trace orange lithics; occasional micromica, calcite flakes. No visible cement. Moderate visual porosity. No fluor; no cut. CLAY: reddish brown, firm, non-dispersive	
351-366	100%	SST: as above, changing from medium grained to fine grained at base	

Interval (m)	%	Description	PAGE: 7
366-369	90 %	SST as above, med. to dark grey, fine grained.	
	10%	MUDSTONE, dark grey, soft, clayey, massive, no laminae, interspersed with very fine carbonaceous flecks.	
369-378	100%	SST as above, fine grained, abundant calcite. At 378m, trace black carbonaceous flecks which gave no fluor: bright bluish-white cut.	
378-387	100%	SST as above, mostly fine to very fine grained.	
387-402	100%	SST as above, alternating thin interbeds of fine and very fine grained beds.	
402-408	100%	SST as above, med.grained; common calcite, trace red-orange lithics, rare micromica, trace pyrite.	
408-411	100%	SST as above, med- fine grained; abundant calcite fragments throughout . Moderate visual porosity. No fluor; no cut.	
411-423	100%	SST as above, fine grained, abundant calcite, trace orange lithics, occ.black carbonaceous flecks.	
423-433	100%	Conglomerate: medium grey, lithology as above, bimodal grain size; coarse –very coarse grains of felspar, quartz, sub-angular together with very fine grained grains, as above; poorly sorted with occ. calcite. No visible matrix. Good inferred porosity; no fluor; no cut.	
433-455	100%	SST as for 402-408 m; alternating interbeds grading from med. grained to fine grained .	
455-471	100%	SST as above, medium grained with trace to common calcite present with tr.black coaly fragments, micromica and chlorite grains towards base of interval.	
471-480	100%	SST as above, fine grained, abundant calcite fragments, tr. orange-red lithics, greenish chlorite grains	
480-483	95%	SST as above. No Fluor: no cut	
	5%	Calcite fragments, white-clear, flat to sub-rounded, soft, occasionally showing platy cleavage on larger fragments: probably fracture fill. No contact surface with surrounding rock is visible due to extremely fine sample size.	
483-486	90%	SST as above, dark grey, tr.fine black coaly flecks.	
	10%	Calcite fragments as above. Background gas: 2 units	
486-489	85%	SST as above.	
	10%	Calcite fragments as above.	
	5%	MUDSTONE : dark grey, very finely laminated, non-fissile, moderately hard. Background gas :2 units	
489-492	90%	SST as above.	
	10%	Calcite fragments as above. Background gas :2 units	
492-495	95%	SST as above.	
	5%	Calcite fragments as above. Background gas:2 units	
495-501	90%	SST as above, very fine grained, extremely well sorted, trace black coaly flecks throughout. Coal frag's have no fluorescence, but show strong bluish-white cut.	
	10%	Calcite fragments as above. Background gas:2 units	







Interval (m)	%	Description	PAGE: 10
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