

FINGAL41B - LITHOLOGY SUMMARY

HOLE NAME: FINGAL41B
R.L. of Hole: 812.00 m
Northing: 5386618.00 m
Easting: 588949.00 m
Date Drilling Commenced: 39246
Date Drilling Completed: 39262
Drill Company: Spaulding Drilling
Core Size: HQ3
PCD Depth: 180.00 m
Core Depth: 464.50 m



FROM	TO	THICKNESS	CORE LOSS	GEOLOGICAL DESCRIPTION	COMMENTS (SEAM NAME)
179.70	227.90	48.20		Dolerite: Grey, fine-grained, hard 194 – 197 – subvertical healed fracture with calcite (1 mm thick) 202.5 – 204.0 – Healed fracture at 80 degrees to core axis (TCA) (1 mm thick) 211 – 212 – Greenish grey w/ drill induced fractures perpendicular to core axis 217 – 218.5 – subvertical healed fracture (~80 degrees) 226 – 227.9 – very fine grained; brittle; green Irregular (irregular) basal contact (contact) – intrusive? - no apparent bake zone in sandstone	
227.90	231.60	3.70		SANDSTONE (SS): Med grained lithic sandstone; light grey to creamy white; muddy bands TO at 0 – 20 degrees; mod to poor sorting - sparse mud pellets w/ silty matrix throughout (TO), irregular bedding TO - 230.3 – 230.5 – Med grained well sorted sand zone - Sharp basal contact	
231.60	233.05	1.45		SILTSTONE (SL): fine creamy greenish grey; w/ thinly bedded minor SS interbeds (interbed); - 232.1 – 232.2 – SL/SS (50:50) - Sharp basal contact	
233.05	233.11	0.06		SS: Med grained grey; mod to well sorted; - sharp basal contact	
233.11	234.10	0.99		MUDSTONE (MS): creamy grey/white; laminae w/ mottled/disturbed bedding(?) - 233.11 -233.6 – badly broken, soft and clayey - 233.6 – 234.0 – fracture at 85 degrees - gradational basal contact	
234.10	235.30	1.20		SS/SL (60:40): – Light grey creamy white; thinly bedded and interbedded - very gradational contact; increasing sand	
235.30	235.90	0.60		SS: white creamy; F-M grained w/ mod sorting, thin bedded; bedding at 0 – 5 degrees - sharp erosional basal contact	
235.90	236.40	0.50		MS/SL: light greyish green to white (?); fining upwards - 236.3 – 236.4 – irregular fracture at 88 degrees and 10 degrees - Grad basal contact	
236.40	240.80	4.40		SS: Very fine grained; greenish grey w/ light tan bedding @ 0 degrees; well sorted, minor SL bands TO - 238.15 – 238.3 – Thin interbed of greenish SL - 239.5 – 238.3 – Thin interbed of tan SL w/ rusty brown SS - 240 – 240.8 – F-grained; reddish brown; thinly bedded at 0 degrees TCA - Gradational basal contact as part of fining upwards package	
240.80	249.60	8.80		SS: Med grained lithic sandstone, brown to rusty brown w/ thin interbed of VF grey SS or SL (widely spaced and > 0.4 m); - bedding at 0 – 8 degrees; no fractures or breaks in core - 243.1 – 243.2 – minor black specks in sand - 243 – 246 – reddish brown colour fading to grey at 246 - 246.5 – 247.3 – bedding thin at 5 to 10 degrees - 247.5 – 248 – irregular fracture at 60 to 80 degrees TCA - 248.6 – 248.9 – irregular shaped brown mud pellets (< 1 cm diameter.) in grey sand with bedding at 0 – 5 degrees	
249.60	250.50	0.90		SS: grey and green bands of med grained SS w/ small subround mud pellets; muddy TO; soft rock (easily scratched with chisel); bedding at 15 degrees; sharp basal contact	
250.50	253.00	2.50		SS – F-M grained in fining upwards package; mod sorting; grey w/ beds at 0 – 5 degrees; - 251.6 – 251.7 – large 1-2 cm mud pellet in sand mud pellets – elliptical - 251.7 – 252 – M-grained grey SS beds at 5 degrees - F grained w/ thin bedding at 5 degrees at base	
253.00	259.50	6.50		SS: Med grained w/ abundant carbonaceous debris/grains and sparse med pellets TO; grey to dark grey - 253.2 – 253.5 – Sub angular pellets 1-3 cm - 254.5 – 255 – Mud pellets and carbonaceous TO - 255.5 – 256 – bedding at 5 degrees - 256.5 – 257 – abundant carbonaceous. debris – darker grey to black in colour - 257.4 – 257.5 – band w/ mud pellets and carbonaceous debris - Gradational contact	

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259.50	264.00	4.50		SS: w/ abundant carbonaceous debris and black muddy pellets; poor sorting; bedding at 5 degrees; - 259.6 – 259.63 – coal band cleated and bright - 260.4 – 260.5 – CM band and bedding at 10 degrees - 261 – 263 – black and grey; med grained bedding at 0 degrees - 263.6 – 264.0 – abundant CM debris	
264.00	264.20	0.20		CARBONACEOUS MUDSTONE (CM): black thinly bedded; less dense than above sand	
264.20	269.50	5.30		SS: dark grey to black; med grained - 264.4 – 265.6 – abundant carbonaceous material; bedding at 5 – 10 degrees - 266.6 – 266.9 – irregular shaped mud pellets in sand matrix - 267.7 – 267.8 – 3 thin (<2 mm thick) bright coal bands - 268.3 – 268.4 – CM pellets irregular bedding at 5 degrees - 269 – 269.1 – CM band; dark black; sandy TO - 269.45 – thin bright coal band - grad contact	
269.50	278.15	8.65		SS: grey; med grained; thinly bedded; no fractures but SS is soft; dark grey - 274.1 – 274.2 – bedding at 15 degrees w. white calcareous interbeds; soft rock - 276.8 – 277.0 – SS w/ thin CM laminae at 0 degrees - sharp basal contact	
278.15	279.00	0.85		CM: dark black; dense with plant debris on fresh fractures; gradational basal contact	
279.00	280.00	1.00		SL: dark grey and silty; very fine laminae - Grad basal contact	
280.00	280.05	0.05		COAL (CO): boney dull coal; dense and black	
280.05	281.00	0.95		CM: Dark black; dense w/ thin interbeds of SL and boney coal	
281.00	281.20	0.20		CO: Very dull coal; rocky w/ subvertical calcite in fractures; bedded but less dense; thin (1mm thick) coaly bands in CM – abundant coaly bands	
281.20	281.40	0.20		CM: dark black and dense, scratches grey to brown; dense	
281.40	281.55	0.15		CO: Dark black w/ interbed CM; abundant thin CO bands (1 mm thick); calcite abundant in subvertical healed fractures	
281.55	281.75	0.20		CM – black laminae; minor very thin coaly bands	
281.75	282.25	0.50		CO/CM (60:40): dark black thin coal bands; increasing CO at base; fairly dense - gradational basal contact	SAMPLE 1 281.75 - 282.25 SEAM A
282.25	284.45	2.20		MS: Dark grey and carbonaceous at the top; laminae TO	
284.45	285.05	0.60		CM: dark black, dense and fissile; friable, badly broken throughout	
285.05	285.55	0.50		CO/CM (50:50): abundant thin dull coal bands in carbonaceous mud - 285.3 – 285.5 – subvertical healed fractures w/ red mineralisation and calcite; thin fractures (~1 mm) but abundant	285.05 - 285.55 Desorption sample not kept
285.55	285.70	0.15		CM: dark grey to black; laminae TO	
285.70	285.75	0.05		TUFF (VT): creamy tan volcanic tuff; sharp basal contact	
285.75	286.70	0.95		CM: dark black; dense; laminae; red mineralisation on fracture at 285.8 - 286.3 – 286.4 – SL interbeds, thin	
286.70	286.96	0.26		CO: thin coaly laminae in carbonaceous mud; non- dense w/ subvertical healed fractures w/ calcite - 286.84 – 286.86 – C4 coal w/ well developed cleat; thin band Contact gradational	
286.96	287.40	0.44		CM: dark black, dense - grading to mudstone at base	
287.40	287.70	0.30		SL: dark grey; thin laminae; sharp basal contact	
287.70	288.25	0.55		CM: dark black; dense; coaly near top 287.85 – 288.0 – subvertical calcite veins	
288.25	288.80	0.55		CO/CM (50:50): dark black; dense w/ thin bands of CO in thinly laminated CM; dense	
288.80	289.30	0.50		CM/CO (70:30): dark black w/ thin (mm thick) coal bands - gradational contact	
289.30	294.60	5.30		SS: Very fine grained; thinly bedded; carbonaceous beds TO - 290 – 290.3 – small scale cross bedding; dark grey w/ dark black CM and SL beds TO - 292.0 – 292.12 – thin SL bands	
294.60	296.20	1.60		SS/SL (60:40): thinly interbedded grey sands with darker greyish brown carbonaceous SL beds TO	
296.20	297.06	0.86		SS: F-M grained well sorted sand; grey 296.35 – 296.4 – thin carbonaceous wisps - Sharp basal contact	
297.06	297.18	0.12		CO: C4/C5 – dark black w/ bright bands; low density	SAMPLE 2 297.06 - F206298.04
297.18	297.20	0.02		VT: dark brown tuff band	
297.20	297.28	0.08		CO: C5 dark black coal; cleated w/ calcite on cleat planes; badly broken	
297.28	297.30	0.02		VT – dark brown and dense	
297.30	297.85	0.55		CO – black; moderately bright coal at top (2 cm); dull coal w/ CM interbeds - 297.3 – 297.7 – C5 cleated and fractured	
297.85	298.04	0.19		CM/CO: black and denser than above CO; thinly bedded w/ minor sand grains TO	
298.04	299.50	1.46		SS: Very fine sand; thinly bedded w/ carbonaceous beds - 299 – 299.3 – convoluted bedding at 10 degrees TCA	
299.50	300.80	1.30		SS: Fine grained; light brownish grey w/ abundant carbonaceous beds (dark black) - thinly bedded w/ bedding at 5 degrees - sharp basal contact	
300.80	300.84	0.04		CO: Dull dark black; cleated w/ kaolinite on cleat planes	

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300.84	301.25	0.41		CM – Dark black thinly laminated; bedding at 0 degrees - breaks along bedding planes - gradational contact	
301.25	301.65	0.40		CM: dark black w/ thin interbeds (laminae) of MS or volcanic tuff (brownish grey in colour) beds (<2 mm); dense - coaly laminae - 2 one mm bands	
301.65	306.50	4.85		CO: dull coal C6(?); fracture with slickenside at 301.48 m 301.65 – 302.04 – Dull coal – hard w/ abundant subvertical fractures filled with calcite; muddy but less dense 302.04 – 302.07 – Dull coal and tuffaceous wisps and pellets(?) 302.07 – 302.35 – Dull coal w/ 3 bands (1cm thick) of brighter cleated coal 302.35 – 302.4 – CM band 302.4 – 302.54 – Dull coal – black with metallic sheen; cleated in part but rocky 302.54 – 302.60 – VT – tuff brown thinly laminated 302.60 – 302.81 – CM band; dense w/ minor very thin coaly bands 302.81 – 302.86 – VT – light grey; dense 302.86 – 303.0 – CM – dense and black 303.0 – 303.12 – VT – tan to grey w/ CM interbeds 303.12 – 303.25 – CO – dull black metallic(?); white mineralization on fractures; hard and no clear cleating 303.25 – 303.27 – VT – tan w/ CM wisps 303.27 – 303.5 – CM – dark black and dense 303.5 – 303.75 – VT – tan, thinly laminated 303.75 – 304.10 – CM – dark black dense 304.10 – 304.3 – CM/VT – dark black and brown thinly interbedded 304.3 – 304.4 – CO – dull black with minor cleating 304.4 – 304.42 – CO – dull and black 304.42 – 304.45 – VT – brown 304.45 – 304.71 – CO – C(?) w/ mod. Cleating and mod density 304.71 – 304.73 – VT – dark brown 304.73 – 304.90 – CO – dull and dense, no cleating or fracturing 304.90 – 305.22 – C5 coal – irregular fracturing and cleating 305.22 – 305.26 – C3 band; black w/ good cleating 305.26 – 305.40 – CO black but denser 305.40 – 305.5 – C4 – bright and cleated; light and badly broken 305.5 – 305.55 – CO dull and dense 305.55 – 305.58 – VT – thin tuff; dark brown 305.58 – 305.71 – C5 coal w/ kaolinite on cleated surfaces 305.71 – 305.73 – VT – creamy brown 305.73 – 305.94 – C6 w/ CM interbeds; thick band (3 cm) of C4; kaolinite on cleated surfaces 305.94 – 305.96 – VT – creamy brown 305.96 – 306.15 – CO – dull black and badly broken; irregular fractures; minor thin cleating 306.15 – 306.20 – CM/VT – interbeds of dark black and creamy brown 306.20 – 306.40 – C6 coal, minor cleating 306.40 – 306.5 – CM; sharp basal contact	SAMPLE 3 304.4– 305.4 m SAMPLE 4 305.4 – 306.4 m Seam B
306.50	306.55	0.05		VT: creamy brown, dense	
306.55	307.05	0.50		CM: dense, black, gradational basal contact	
307.05	307.65	0.60		SL: dark grey, laminae; bedding at 0 degrees	
307.65	308.40	0.75		SS: Fine grained, light grey, well sorted	
308.40	309.90	1.50		SANDSTONE: Grey, fine grained, well sorted, carbonaceous laminations throughout, silty in parts	
309.90	310.30	0.40		SL: Grey, slightly sandy in parts, laminated appearance	
310.30	311.00	0.70		SS: Grey, fine to medium grained, well sorted, laminated, very thin carbonaceous bands	
311.00	313.90	2.90		SS: Grey, medium to coarse grained, well sorted, carbonaceous parts at 311.6m with minor tuff, lithic fragments	
313.90	314.50	0.60		SS: Grey, fine grained with silty partings, laminated, minor carbonaceous bands throughout, well sorted	
314.50	315.60	1.10		SS: Grey, medium to coarse grained, minor lithic and carbonaceous fragments, massive, well sorted	
315.60	315.90	0.30		SS: Grey, fine to coarse grained in parts, carbonaceous laminations at 315.8m	
315.90	316.65	0.75		SS: Light grey, medium grained, laminated in parts, lithic fragments, carbonaceous stringers at 316.4m and 316.65m	
316.65	316.80	0.15		SL: Grey, well sorted, carbonaceous stringers on joint surfaces	
316.80	317.70	0.90		SS: Lightly grey, medium to coarse grained with sub-rounded clasts up to 10mm, thin carbonaceous bands, poorly to moderately sorted	
317.70	319.70	2.00		SS: Grey, medium grained, laminated in parts, well sorted, carbonaceous mudstone bands at 318.7m and 318.8m	
319.70	320.30	0.60		SS: Grey, fine to medium grained, well laminated, moderately to well sorted, lithic fragments	
320.30	323.50	3.20		SS: Grey, fine to medium grained, well sorted, carbonaceous laminations from 320.8-320.9m, 321.2m, 322.5-322.8m	
323.50	323.90	0.40		SS: Grey, medium grained, abundant sub-rounded clasts to 10mm, poorly sorted, carbonaceous stringers throughout	
323.90	324.50	0.60		SS: Grey, fine to medium grained, minor carbonaceous coaly stringers, well sorted, rare sub-rounded clasts, minor laminations	
324.50	324.65	0.15		SS: Grey, fine to medium grained with abundant rounded clasts to 10mm, poorly sorted	
324.65	326.40	1.75		SS: Light to medium grey, laminated in parts, occasional rounded clasts, coaly stringers from 325.3-325.8m, becoming slightly silty in parts	
326.40	326.80	0.40		VT: Light brown grey to cream, soft, strongly foliated	
326.80	327.10	0.30		CM: Dark brown grey to black in parts, slightly tuffaceous, highly carbonaceous	

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327.10	327.50	0.40		VT: Light brown grey to cream, soft, strongly foliated	
327.50	327.65	0.15		CM: Dark brown grey to black in parts, slightly tuffaceous, highly carbonaceous	
327.65	327.75	0.10		VT: Light brown grey to cream, soft, strongly foliated	
327.75	328.00	0.25		CM: Dark brown grey to black in parts, slightly tuffaceous, highly carbonaceous	
328.00	328.10	0.10		VT: Light brown grey to cream, soft, strongly foliated	
328.10	328.70	0.60		COAL – C SEAM: Black, slightly tuffaceous in parts, slight to moderate cleating, vertical fracture, mostly dull, Sample 5	SAMPLE 5 328.10 - 328.60 Seam C
328.70	329.00	0.30		VT: Light brown grey to cream, soft, strongly foliated	
329.00	329.30	0.30		CM: Dark brown grey to black in parts, slightly tuffaceous, moderately carbonaceous	
329.30	329.45	0.15		VT: Light brown grey to cream, soft, strongly foliated	
329.45	329.65	0.20		CM: Dark brown grey to black in parts, slightly tuffaceous, highly carbonaceous, 0.1m moisture sample taken	
329.65	329.80	0.15		VT: Light brown grey to cream, soft, strongly foliated	
329.80	330.80	1.00		COAL – C SEAM: Black, slightly tuffaceous in parts, minor cleating with some jointing, dull, Sample 6	SAMPLE 6 329.80 - 330.80 Seam C
330.80	330.90	0.10		VT: Light brown grey to cream, soft, moderately foliated	
330.90	331.20	0.30		CM: Dark brown grey to black in parts, moderately tuffaceous throughout, highly carbonaceous	
331.20	331.90	0.70		MS: Light grey, massive, well sorted, minor carbonaceous partings, some tuff throughout	
331.90	334.20	2.30		SL: Light grey, massive, minor carbonaceous debris on fresh fractures, minor very fine sand throughout	
334.20	334.60	0.40		CM: Dark black w/ thin interbeds/laminae of Siltstone - Gradational basal contact – increasing siltstone	
334.60	335.40	0.80		SL: grey, badly broken - Note: lost core run out of inter tube and had to re-core section, therefore, badly broken throughout	
335.40	336.10	0.70		SS: Grey and fine grained; badly broken	
336.10	337.30	1.20		MS: Grey, massive; sharp basal contact	
337.30	340.30	3.00		SS: Greenish grey, fine to medium grained with fining upwards packages 0.5 – 0.75 m thick, - bedding at 0 degrees - 337.6 – 337.8 – Medium grained - 337.8 – 338.2 – Very fine grained sand 340.2 – 340.3 – Fine grained w/ coaly wisps and debris - gradational basal contact	
340.30	342.00	1.70		SS: Fine to medium grained, grey, poor to moderate sorting, - 341.3 – 342.0 – coaly debris and laminae interbeds; bedding at 0 to 5 degrees and finer sand - Gradational basal contact	
342.00	346.35	4.35		SS: Grey, Medium grained, well sorted - bedding at 0 – 10 degrees, cross bedded - 343.4 – 343.5 – minor carbonaceous laminae - Sharp irregular basal contact at 20 degrees	
346.35	346.53	0.18		MS: black to brownish grey; badly broken w/ slickensides(?) on some surfaces - carbonaceous at top - sharp basal contact	
346.53	349.90	3.37		SS: Med to coarse grained; moderate to poor sorting with abundant carbonaceous grains and flecks and debris throughout. - 346.8 – 347.7 – abundant carbonaceous wisps, coaly fragments and bands, and irregular shaped siltstone pellets. - 348.3 – 349.1 – carbonaceous pellets on bedding at 0 degrees to core axis - 349.1 – 349.9 – Coarse grained at base w/ fine to medium grained bands; larger mud pellets in coarse sand matrix at base - Transitional base	
349.90	350.50	0.60		SS: Fine to medium grained; moderate sorting - Gradational contact	
350.50	351.30	0.80		SS: Medium to coarse grained; poor sorting - abundant coaly debris, wisps and mud pellets - mud pellets at base (1-2 cm) and elliptical in shape - transition to less debris at base	
351.30	353.96	2.66		SS: Fine to medium grained; abundant mudstone pellets in matrix (1 – 3 cm diameter and elliptical); high density of mud clasts at base - 353.15 m thin coaly laminae with calcite bedded at 0 degrees - 353.0 – fracture at 70 degrees to core axis (TCA) - 353.8 – fracture at 50 degrees with slicken sides in mud pellet - sharp basal contact	
353.96	354.05	0.09		COAL: Dull and black, moderately dense	
354.05	354.08	0.03		VT: brown and muddy	
354.08	354.11	0.03		CM: Dense and black	
354.11	354.35	0.24		COAL: Dull with moderately bright band at 354.16 – 354.19 m, bedded with some cleat development - kaolinite on subvertical fractures and cleated planes	
354.35	355.70	1.35		SL: Medium grey with very fine sand interbeds and minor carbonaceous laminae - 355.67 – fracture at 50 degrees w. undulose slickensides - sharp basal contact	
355.70	355.81	0.11		COAL: Dull; black and moderately dense, carbonaceous	SAMPLE 7 - 355.70 - 356.20 m
355.81	355.88	0.07		VT: brown, fissile; irregular basal contact	Seam C or D
355.88	356.10	0.22		COAL: Dull black, minor cleat development	
356.10	356.30	0.20		CM: Black to brown; fissile and moderately dense	
356.30	356.60	0.30	0.30	CORE LOSS: Driller change over and potential loss in coal?	
356.30	357.35	1.05		COAL: Black, badly broken on irregular fractures and cleat planes; moderately bright (C4/C5?); minor carbonaceous fissile layers near base; kaolinite on fracture and cleat planes	SAMPLE 8 - 356.50 - 357.30 Seam C or D
357.35	358.63	1.28		SS: Grey, very fine sand, sharp basal contact	
358.63	359.10	0.47		MS: Grey, massive with minor clayey bands - 357.95 - 358 – Thin band of carbonaceous mudstone - 358.18 – 358.20 – Badly broken (Drill induced?)	

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359.10	360.00	0.90		- Muddy and carbonaceous at base and badly broken SL: Grey and massive with bedding at 0 degrees - 359.1 – 359.5 – Fractures at 80 – 90 degrees TCA - Gradational basal contact	
360.00	361.10	1.10		SS: Grey, very fine sand, well sorted, massive; - silty interbeds and gradational basal contact	
361.10	362.38	1.28		SL: Grey, massive, sharp basal contact and carbonaceous at base	
362.38	362.47	0.09		VT: brown with calcite dendritic veins throughout. - fracture at upper contact with undulose slickensides at 40 degrees	
362.47	362.75	0.28		MS: Grey with carbonaceous wisps; basal contact at 10 degrees	
362.75	362.94	0.19		COAL: Dull and dense/hard; with tuffaceous interbeds	
362.94	362.96	0.02		TUFF: Dark brown	
362.96	364.45	1.49		COAL: Dull and black, with very thin tuff interbeds (three 2 – 4 mm bands); kaolinite on fracture and cleat planes - 362.96 – 363.4 subvertical fractures.; minor cleat development - 363.40 – 363.71 – Coal: black C6, bedded, no mineralisation - 363.71 – 363.73 – Tuff: brown - 363.73 – 364.11 – Coal: dull black - 364.11 – 364.13 – Tuff; brown - 364.13 – 364.45 – Coal: broken on subvertical fractures and minor cleated surfaces - sharp basal contact	SAMPLE 9 363.40 – 364.40 m Seam D
364.45	366.05	1.60		MS: Grey and massive - 364.60 – 365.00 – Broken; subvertical fracture with slickensides and calcite	
366.05	366.80	0.75		SS: Very fine grained, bedding at 0 degrees, gradational basal contact with muddy interbeds	
366.80	367.80	1.00		MS: Grey massive, laminae, bedding at 0 degrees, - gradational basal contact	
367.80	369.20	1.40		SL: Grey with minor sand (very fine), muddy throughout - sharp basal contact	
369.20	373.50	4.30		SS: Fine to medium grained, grey, moderately to well sorted, bedding at 0 degrees, - 369.9 – 370.10 – Carbonaceous laminae - Gradational basal contact to medium grained sand	
373.50	377.50	4.00		SS: Medium grained, moderate to well sorted, grey with carbonaceous grains and carbonaceous debris on fresh fractures throughout, massive - 376.3 – 377.4 abundant carbonaceous laminae, mud pellets and carbonaceous. mud pellets - Gradational basal contact	
377.50	378.30	0.80		CONGLOMERATE: Grey, mud pellets 1 – 10 cm in diameter (elliptical) in a medium grained sand matrix, - bedding at 0 degrees	
378.30	380.74	2.44		SS: Grey with black carbonaceous grains throughout (salt and pepper) 379.30 – 380.10 – Carbonaceous grains/pellets on bedding at 0°; thinly bedded 380.20 – 380.25 – Thin siltstone 379.90 – 379.95 – Irregular bedding with calcification 380.50 – 380.60 – Siltstone horizon	
380.74	381.40	0.66	0.66	Core loss – Tripped rods out; change of drillers	
381.40	383.40	2.00		SS: Grey to dark grey, thinly bedded with interbeds of carbonaceous siltstone, bedding at 0 degrees 381.70 -381.80 – Muddy siltstone horizon with irregular fracturing 382.10 – 382.2 – Bedding at 10 – 20 degrees irregular 382.6 – 383.1 – increasing carbonaceous material; bright flecks of coaly material on fresh fractures CM: black laminae; gradational basal contact with sandy interbeds	
383.40	383.85	0.45		SL: Grey with minor sand throughout; sharp erosional contact	
383.85	384.80	0.95		SS: Grey, fine to medium grained, well sorted; sharp and irregular basal contact	
384.80	385.30	0.50		SS: Grey, fine to very fine grained with minor carbonaceous wisps/beds at 0 degrees TCA with small scale cross bedding in thin beds. sharp basal contact at 10 degrees	
385.30	385.75	0.45		SS: Grey, fine to medium grained with fine grained horizons - 386.6 – 386.95 – Finer grained with erosional contacts at top and bottom - 387.5 – 387.85 – Carbonaceous wisps; bedding at 15 degrees TCA - 389.6 – 390.40 – Thin light brown beds at 15 degrees - Gradational bottom contact to medium sand	
385.75	390.40	4.65			
390.40	398.10	7.70		SS: Medium grained; grey, massive - 397.7 – 398.1 – sparse coaly debris and mud pellets - 398.1 – gradational/transitional base to finer sand	
398.10	399.52	1.42		SS: Grey, fine to medium grained, bedding at 10 degrees	
399.52	400.90	1.38		SS: Medium grained and medium grey; abundant carbonaceous debris/wisps/fragments throughout.	
400.90	403.50	2.60		SS: Fine to medium grained, bedding at 10 degrees; sparse carbonaceous debris at 401.6 m - 402.1 – 402.3 – coaly wisps in SS matrix - bedding at 5 degrees at base - sharp basal contact	
403.50	404.25	0.75		CONGLOMERATE (CGL): Greenish grey, medium grained sand; lenticular coaly fragments abundant at top; mud and tuff(?) pebbles (1-5 cm diameter) throughout	
404.25	405.00	0.75		SS: Medium grained; grey, massive; sharp basal contact	
405.00	405.43	0.43		COAL: (C4 – C5) black and moderately dense with very thin (1 mm thick) bright bands; minor cleating and irregular fracturing throughout	
405.43	405.45	0.02		TUFF: creamy brown	
405.45	405.84	0.39		COAL: C5, black and moderately dense, irregular subvertical fractures	
405.84	405.86	0.02		TUFF: brown	
405.86	406.00	0.14		COAL: Dull; black and moderately dense SAMPLE 10 – 405.00 – 406.00	Seam F SAMPLE 10 – 405.00 – 406.00
406.00	406.60	0.60		COAL: dull coal with minor thin C3(?) bands; kaolinite on subvertical fractures	
406.60	406.80	0.20		COAL: C4 cleated and badly broken; minor kaolinite	
406.80	407.31	0.51		COAL: C5; moderately dense, ashy throughout	

FINGAL41B - LITHOLOGY SUMMARY

HOLE NAME: FINGAL41B
R.L. of Hole: 812.00 m
Northing: 5386618.00 m
Easting: 588949.00 m
Date Drilling Commenced: 39246
Date Drilling Completed: 39262
Drill Company: Spaulding Drilling
Core Size: HQ3
PCD Depth: 180.00 m
Core Depth: 464.50 m



FROM	TO	THICKNESS	CORE LOSS	GEOLOGICAL DESCRIPTION	COMMENTS (SEAM NAME)
407.31	407.33	0.02		TUFF: thin band of brown	
407.33	407.85	0.52		COAL: Dull black C5/C6 with several bright bands – 1-2 mm thick	Seam F
407.85	407.90	0.05		CM: dark black, dense, sharp basal contact	SAMPLE 11 406.80 – 407.80 m
407.90	408.63	0.73		MS: Grey, massive; laminae at 0 degrees; sharp basal contact	
408.63	409.00	0.37		SS: brownish grey; fine grained; sharp base	
409.00	409.30	0.30		MS: Grey; massive; gradational contact	
409.30	416.20	6.90		SS: Fine to medium grained; grey; moderately to well sorted, grey with minor carbonaceous flecks/grains throughout - 411.2 – 411.25 – sparse carbonaceous flecks - 414.3 – 414.4 – thin carbonaceous flecks and debris, bedding at 5 degrees - 415.3 – 415.55 – horizon with carbonaceous grains - transition to conglomerate	
416.20	416.70	0.50		SS and CONGLOMERATE: large siltstone pellets and carbonaceous pellets and debris (lenticular and round) - 416.5 – 416.55 – coal bed thin bright with kaolinite - erosional basal contact	
416.70	434.09	17.39		SS: White to grey, fine to medium grained, massive, minimal fracturing - 422.80 – 423.10 – mud pellets on bedding dipping at 15 degrees - 427.00 – 427.20 – sparse carbonaceous laminae - 428.95 – 429.20 – Carbonaceous laminae and lenticular debris - 429.20 – 434.09 – no fractures, massive - sharp basal contact	
434.09	434.56	0.47		MS: grey and black; convoluted bedding with tuffaceous (brown) interbeds(?); sharp basal contact	
434.56	434.67	0.11		COAL: dull and dense with carbonaceous interbeds, black streak	
434.67	434.90	0.23		TUFF: Carbonaceous interbeds; black and brown, sharp basal contact	
434.09	434.56	0.47		MS: grey and black; convoluted bedding with tuffaceous (brown) interbeds(?); sharp basal contact	
434.56	434.67	0.11		COAL: dull and dense with carbonaceous interbeds, black streak	
434.67	434.90	0.23		TUFF: Carbonaceous interbeds; black and brown, sharp basal contact	
434.90	438.00	3.10		SS: Medium grained, grey; well sorted; gradational basal contact (colour change)	
438.00	438.60	0.60		SS: green-grey, medium grained with sharp basal contact	
438.60	439.80	1.20		MS: Grey with minor carbonaceous laminae throughout; gradational basal contact	
439.80	440.60	0.80		SS and MS: (40:60) grey to dark grey; interbedded throughout with small scale cross bedding visible in fine sand; gradational basal contact	
440.60	440.98	0.38		MS: grey, massive; sharp basal contact	
440.98	441.06	0.08		CM: Black and coaly with very thin tuff band (2 mm) at top	
441.06	442.30	1.24		SS: Very fine sand, grey with carbonaceous interbeds and muddy throughout	
442.30	445.12	2.82		CM AND MS: (60:40) thinly bedded, black and grey; gradational contact	
445.12	447.10	1.98		SS: Dark grey and black; fine grained; carbonaceous laminae throughout; coarse grained at base - gradational basal contact	
447.10	449.60	2.50		SS: Medium grained; grey; carbonaceous laminae at 0 degrees - 448.3 – 448.6 less carbonaceous	
449.60	451.45	1.85		MS: grey, massive - fracture at 449.70 at 50 degrees with slickensides - 450.99 – 451.10 fracture at 50 degrees with slickensides - sharp basal contact	
451.45	452.70	1.25		SL AND SS: (60:40) – dark grey silt and light grey fine sand - thinly bedded with bedding at 0 degrees - 451.90 – 452.0 – sandy brown	
452.70	453.30	0.60		CARBONACEOUS MS: dark black with sparse light grey sand interbeds; - gradational basal contact; increasing sand	
453.30	453.65	0.35		SS: dark grey fine sand with abundant carbonaceous laminae; fining upward - sharp basal contact	
453.65	455.10	1.45		COAL: Dull and moderately dense; bedded(?), poor cleat development if any; muddy/rocky throughout - gradational basal contact - fracture with slickensides at 50 degrees at 354.70	Seam G, Upper SAMPLE 12: 453.65 – 454.65
455.10	455.75	0.65		CM: dark black and dense; grey streak when scratched	
455.75	455.98	0.23		SS: Black with carbonaceous interbeds; sharp basal contact	

FINGAL41B - LITHOLOGY SUMMARY

HOLE NAME: FINGAL41B
R.L. of Hole: 812.00 m
Northing: 5386618.00 m
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Date Drilling Commenced: 39246
Date Drilling Completed: 39262
Drill Company: Spaulding Drilling
Core Size: HQ3
PCD Depth: 180.00 m
Core Depth: 464.50 m



FROM	TO	THICKNESS	CORE LOSS	GEOLOGICAL DESCRIPTION	COMMENTS (SEAM NAME)
455.98	462.58	6.60		SS: medium grained; massive; well sorted - 456.0 – 461.10 – no fractures - Sharp basal contact	
462.58	462.63	0.05		COAL: dark black, dull coal, moderately dense, bedded	SAMPLE 13 - 462.58 – 463.58
462.63	462.65	0.02		TUFF: brown, clayey	Seam G, Lower
462.65	462.70	0.05		COAL: Dull, badly broken; black	
462.70	462.73	0.03		TUFF: brown, clayey	
462.73	462.84	0.11		COAL: C5, black, minor thin bright bands	
462.84	462.86	0.02		TUFF: brown, clayey	
462.86	463.10	0.24		COAL: Black, badly broken; C5 with minor cleating	
463.10	463.26	0.16		COAL and CM: (50:50) black and moderately dense with very thin tuff bands	
463.26	463.58	0.32		COAL: Black, badly broken, cleated and fractured; C3(?) to C4 bands; calcite on cleat and fracture surfaces	
463.58	463.60	0.02		TUFF: brown, clayey	
463.60	463.64	0.04		COAL: Badly broken, C4	
463.64	464.50	0.86		SS: Very fine grained sand with silty interbeds 463.60 – fracture at 60 degrees with slickensides and calcite 464.30 – fracture at 50 degrees with slickensides	
464.50				EOH	

FINGAL41B - COAL SEAM SUMMARY

HOLE NAME: FINGAL41B
R.L. of Hole: 812.00 m
Northing: 5386618.00 m
Easting: 588949.00 m
Date Drilling Commenced: 13/06/2007
Date Drilling Completed: 29/06/2007
Drill Company: Spaulding Drilling
Core Size: HQ3
PCD Depth: 180.00 m
Core Depth: 464.50 m

Seam	Depth From	Depth To	Seam Thickness	Net Coal Max	Thickness Min	Description	Desorption Samples		
Coal A, Upper	281.00	282.25	1.25	0.85	0.60	Very thin bands of Coal with very fine cleat within a carbonaceous mudstone (60:40). Moderately dense.	Sample 1	281.75	282.25
Coal A, Lower	285.05	285.55	0.50	0.50	0.25	Carbonaceous Mudstone and Dull Coal thinly interbedded (50:50). Abundant red mineralisation on abundant and thin sub vertical			
Coal B, upper (?)	297.06	298.04	0.98	0.84	0.75	Very dull Coal, moderately dense with mudstone and carbonaceous mudstone interbeds interbeds	Sample 2	297.07	298.04
Coal B	301.65	306.50	4.85	2.90	2.35	Coal (C3 - C6) with thin carbonaceous mudstone interbeds and several (~11) thin volcanic tuff bands throughout. Well developed cleat on brighter coals. Badly broken sections and calcite and fracture planes near top of section. Minor kaolinite on cleated surfaces near base.	Sample 3	304.40	305.40
							Sample 4	305.40	306.40
Coal C	328.10	330.80	2.70	1.60	1.30	Coal is generally dull with tuff/mud throughout. Minor cleat developm	Sample 5 Sample 6	328.10 329.80	328.60 330.80
Coal D, Upper (Coal C or D in proposal)	355.70	357.35	1.65	1.38	1.06	Dull and moderately dense coal; carbonaceous throughout with carbonaceous and tuff parting from 356.30 - 356.60 m. Badly broken with moderately bright bands interbedded with carbonaceous mudstone at base. Some core loss (~0.3 m) during drilling. Kaolinite	Sample 7 Sample 8	355.70 356.50	356.20 357.30
Coal D, Lower	362.75	364.45	1.70	1.64	1.60	Dull Coal of low density with several thin (<5 cm) bands of mudstone and tuff. Poor cleat development and subvertical healed fractures with calcite infill.	Sample 9	363.40	364.40
Coal F, Upper	405.00	407.85	2.85	2.79	2.20	Dull Coal with sparse and thin bands of C3 to C4. Moderately dense throughout with three thin well defined tuff bands. Kaolinite present on fractures and broken surfaces.	Sample 10 Sample 11	405.00 406.80	406.00 407.80
Coal G, Upper	453.65	455.10	1.45	1.45	~1.0	Very dull coal. Little to no cleat development and rocky throughout.	Sample 12	453.65	454.65
Coal G, Lower	462.58	463.64	1.06	0.97	0.89	Moderately dense Carbonaceous Mudstone and Coal with thin tuffaceous partings. Badly broken throughout with thin bands of C3/C4 coal with carbonaceous mudstone. Calcite present on cleat	Sample 13	462.58	463.58