

<div>  <div> Essential Petroleum Resources Limited </div> </div> <div> Killarney EPRL 1 Cuttings Descriptions </div>									
Depth		Killarney EPRL 1							SAMPLE DESCRIPTIONS
From	To	Sst	Slt	Clyst	Lst	Marl	Co	Vis Por	Description and shows:
3.9	7.9	100							SANDSTONE: unconsolidated becoming firm toward the base
7.9	26.9								BASALT: fractured, water influx from 23.3m.
26.9	29.9								BASALTIC RUBBLE:
29.9	45.9				100				CALCARENITE: light brown, friable
45.9	50				100				CALCARENITE: as above. Sample contaminated with 80% cement
50	60				100			g	CALCARENITE: white to very light brown, very fine to medium grained, slight calcite cement, friable, fossiliferous with shelly fragments and foraminifera, trace fine lithic, carbonaceous, and glauconite grains.
60	70				100			f	CALCARENITE: as above, very fine to fine grained becoming moderately sorted with slight silty clay matrix, common glauconite grains, very coarse, well rounded, trace crystalline pyrite.
70	80				100			p	CALCARENITE: light grey to light greyish brown, very fine to fine grained, poorly sorted, grades to calcisiltite.
80	90				100			t	CALCARENITE: very light grey, very fine grained, bimodal grain size - coarse size forams in very sand to silt size matrix.
90	100				100			t	CALCARENITE: as above
100	110				100			t	CALCARENITE: as above, trace glauconite, rare very coarse subrounded polished quartz grains.
110	120				100			n	CALCARENITE: as above, silty, calcareous cement and micritic matrix. Fossiliferous
120	130				100			n	CALCARENITE: very light grey, very fine grained, grades to CALCISILTITE: light grey, fossiliferous, soft.
130	140				100				CALCARENITE: grades to CALCISILTITE as above, trace pyrite, patchy clear calcite cementation
140	150				100				CALCARENITE: very light greyish yellow to light grey, very fine grained, very poorly sorted, grades to CALCISILTITE: minor grey clay in irregular patches ?bioturbated, abundantly fossiliferous. Coarse fossil fragments - byozoans, forams, echinoderm spines.
150	160				100				CALCARENITE: very light grey to light yellowish grey, patchy, very fine grained, grades to CALCISILTITE. Light grey, soft, abundant coarse fossil fragments.
160	170				100				CALCARENITE: as above

170	180				100				CALCARENITE: light grey to light yellowish grey, very fine to coarse grained, with abundant coarse fossil material, micritic matrix and patchy calcite cement
180	190				100				CALCARENITE: as above
190	200				100				CALCARENITE: as above commonly yellowish grey, fossil fragments in micritic matrix.
200	210				100				CALCARENITE: as above, medium to very fine grained, micritic in part, abundant fossils
210	220				100				CALCARENITE: as above,
220	230				90	10			CALCARENITE: as above, grades to MARL: light grey, very soft sticky dispersive in mud
230	240				30	70			MARL: very light to light grey, fossiliferous, soft sticky, trace pyrite.
240	250				20	80			MARL as above
250	260					100			MARL: as above
260	270					100			MARL: as above
270	280				10	90			MARL: very light grey, soft sticky, abundant fine to medium dispersed calcarenite grains predominantly fossil material, and and calcareous silt, grades to calcisiltite.
280	290					100			MARL: as above
290	300					100			MARL: as above
300	310				10	90			MARL: very light grey, soft sticky, abundant fine to medium dispersed calcarenite grains, predominantly fossil material.
310	320				20	80			MARL: very light grey, soft sticky, grades to calcisiltite, abundant fine to medium dispersed calcarenite grains, predominantly fossil material.
320	330				20	80			MARL: very light grey, soft, sticky to friable, common fossil fragments, grades to silty CALCARENITE.
330	340				10	90			MARL: as above
340	350					100			MARL: as above
350	360				10	90			MARL: as above
360	370				10	90			MARL: very light grey, speckled dark grey, abundant calcareous silt and sand as above, trace glauconite.
370	380				30	70			MARL: very light grey to very light greyish green, dispersed glauconite in part, grades to CALCILUTITE.
380	390				10	90			MARL: as above abundant calcareous silt and sand, grades to silty sandy calcilutite.
390	400				20	80			MARL: as above very light grey grades to CALCILUTITE
400	410				10	90			MARL: as above abundant coarse fossil material.
410	420				90	10		f	CALCARENITE: mottled white to yellow, fine to coarse grained, calcareous cement, rare trace glauconite, fossiliferous, trace very dull yellow mineral fluorescence.

420	430				90	10		p	CALCARENITE: mottled off-white to medium greyish brown, light brown, very fine to medium grained, soft, abundant micrite and clay matrix,
430	440				80	20			CALCARENITE: as above, abundant silt/clay/micrite matrix, grades to MARL:
440	450	10	30		10	50		p	SANDSTONE: clear to yellowish brown, fine to coarse grained, poorly sorted, predominantly loose grains with brown matrix adhering. SILTSTONE: medium grey to medium brown, finely micaceous, soft. CALCARENITE: as above, abundant silt/clay/micrite matrix, grades to MARL:
450	460	80	20					f	SANDSTONE: light to dark yellowish brown, very fine to coarse grained, angular to subangular, polished, poorly sorted, iron stained and with trace brown matrix adhering, trace black spherical grains ?chamosite, calcareous cemented silty matrix. SILTSTONE: as above. Common coarse fossil fragments
460	470	90	10					f	SANDSTONE: light to dark yellowish brown, predominantly loose as above, occasionally mottled white with calcareous cemented silty matrix,
470	480	100	trace					g	SANDSTONE: predominantly as above, occasionally clear, white, grey, fine to very coarse grained, subangular to angular with irregular grain shapes, inclusions, predominantly clean, trace silty matrix washing out. Trace lithic grains,
480	490	90	10					g	SANDSTONE: as above, trace coarse mica, trace pyrite cement. SILTSTONE: light to dark grey, light to dark brown, blocky, micaceous in part, occasionally with coarse quartz grains.
490	500	100						g	SANDSTONE: clear to white, yellow, fine to coarse grained, moderately to poorly sorted, slight silty matrix and clear calcareous cement, occasionally patchy pyrite cement, trace mica.
500	510	20	80					p	SILTSTONE: medium to dark greyish brown, soft, sickly, clayey, micromicaceous
510	520	10	90					p	SILTSTONE: as above SANDSTONE: becoming very fine grained.
520	530	10	90					n	SILTSTONE: as above
530	540	30	70					f	SANDSTONE: clear to milky, fine to medium grained, moderately sorted, angular to subangular, loose clean grains. SILTSTONE: as above
540	550	100						g	SANDSTONE: clear to milky, fine to very coarse grained, moderately sorted, angular to subangular to rare very well rounded, loose clean grains, trace smoky quartz. No shows.
550	560	100						vg	SANDSTONE: as above
560	570	100						vg	SANDSTONE: as above, predominantly medium to very coarse grained, loose clean quartz grains, subangular to subrounded. No shows
570	580	100						vg	SANDSTONE: as above

580	590	100						vg	SANDSTONE: clear, milky, fine to very coarse predominantly coarse, moderately sorted, subangular, predominantly loose, trace calcite cement, occasional trace clear quartz overgrowths, trace coarse mica. no shows
590	600	100						vg	SANDSTONE: as above
600	610	100						vg	SANDSTONE: as above
690	620	100						vg	SANDSTONE: as above becoming very coarse grained. No shows
620	630	70	30					f	SILTSTONE: medium greyish brown, finely speckled, trace carbonaceous material, soft.
630	640	90	10					g	SANDSTONE: as above fine to coarse grained. SILTSTONE: as above, soft, clayey.
640	650	70	30					g	SANDSTONE: as above becomin finer grained, SILTSTONE: as above.
650	660	20	80					g	SILTSTONE: medium greyish brown, soft, amorphous, very finely micaceous.
660	670	100						vg	SANDSTONE: as above coarse to very coarse grained loose. No shows
670	680	100	t					vg	SANDSTONE: clear to white, very pale yellow, medium to very coarse grained, well sorted, subangular, clean, SILTSTONE: pale green/white trace, mottled,
680	690	100						vg	SANDSTONE: as above
690	700	100						vg	SANDSTONE: as above
700	710	100						vg	SANDSTONE: becoming fine to predominantly medium, occasionally coarse grained as above SILTSTONE: pale green as above.
710	720	100						vg	SANDSTONE: as above, medium to very coarse grained, trace large mica flakes. no shows.
720	730	100						vg	SANDSTONE: as above, occasionally yellowish brown.
730	733	100						vg	
733	736	100						vg	SANDSTONE: as above, trace SILTSTONE: mottled, white -brown.
736	739	100						vg	SANDSTONE: as above
739	742	95	5					vg	SANDSTONE: as above, SILTSTONE: pale green, and mottled brown as above
742	745	100						vg	SANDSTONE: as above
745	748	100						vg	SANDSTONE: clear to white, medium to coarse, well sorted, clean, trace large mica flakes.
748	751	95	5					vg	SANDSTONE: as above, SILTSTONE: pale green, and mottled brown as above
751	754	100	t					vg	SANDSTONE: medium to very coarse, well sorted, subangular, predominantly loose clean grains, slight silica cement.
754	757	100						vg	SANDSTONE: as above
757	760	100						vg	SANDSTONE: as above, silica cement increasing
760	763	100						vg	SANDSTONE: as above trace lithic grians, trace pyrite.

763	766	90	10					g	SANDSTONE: as above, becoming light brown in part, with silty matrix adhering. SILTSTONE: trace pale green as above, predominantly medium greyish brown to medium brown, sandy with medium quartz grains, micromicaceous, trace fine carbonaceous material
766	769	100	t					vg	SANDSTONE: as above SILTSTONE as above
769	772	100						vg	SANDSTONE: clean coarse grained as above.
772	775	40	40	20					SILTSTONE: medium to dark brown occasionally light brown mottled, clayey, sandy with quartz and lithic grains, soft/dispersive, grades to SILTY CLAYSTONE, SANDSTONE: as above, trace pale green siltstone as above.
775	778	30	40	30					SILTSTONE: as above, trace carbonaceous material, occasional marine fossil material.
778	781	20	40	40					SILTY CLAYSTONE: dark brown, firm to very hard in part, in part sandy & dispersive, grades to SILTSTONE. SANDSTONE: as loose grains, clear to white, light brown. In part washing out of sandy silty claystone.
781	784	30	40	30					SILTSTONE: as above grades to SILTY CLAYSTONE:, medium to light brown, occasionally as dark brown, occasionally very hard. SANDSTONE as above no shows
784	787	60	40						SANDSTONE: as above grades to very hard cemented SILTSTONE: light brown, sandy, trace glauconite.
787	790	90	10					g	SANDSTONE: predominantly clear to light brown, occasionally dark yellowish brown, coarse to very coarse grained, moderately sorted, sub angular, loose grains, trace matrix adhering, trace glauconite, trace pyrite.
790	793	100						g	SANDSTONE: predominantly clear to light brown, occasionally dark yellowish brown, medium to very coarse grained, moderately sorted, sub angular, loose grains, common greyish green lithic grains, trace glauconite, trace pyrite. no shows
793	796	100						g	SANDSTONE: predominantly clear to light brown, occasionally dark yellowish brown, medium to very coarse grained, moderately sorted, sub angular, loose grains, common greyish green lithic grains, trace glauconite, trace pyrite. no shows
796	799	70	30					f	CBU @ 798m SANDSTONE: predominantly clear to light brown, occasionally dark yellowish brown, medium to very coarse grained, moderately sorted, sub angular, loose grains, common greyish green lithic grains. visible porosity poor due to silty matrix. no shows. SILTSTONE: mottled light to medium brown, sandy, clayey, feldspathic in part, trace glauconite.
799	802	90	10					f	SANDSTONE: light greyish yellow, medium to very coarse, moderately to poorly sorted, predominantly angular, moderate argillaceous matrix washing out, micromicaceous, trace glauconite, trace pyrite
802	805	100						f	SANDSTONE: as above glauconite in pellet and nodules becoming more

									common, common stained quartz and lithic grains.
805	808	90	10					f	SANDSTONE: as above SILTSTONE: as above and light grey.n/s
808	811	90	10					f	
811	814	90	10					p	SANDSTONE: as above SILTSTONE as above
814	817	70	30					p	SILTSTONE: medium greyish brown, micromicaceous, carbonaceous in part, trace irregular glauconite pellets. SANDSTONE: as above becoming silty.
817	823	30	30	40				n	SILTY CLAYSTONE: dark brown, soft, sandy, speckled/ mottled with light brown clay, grades to SILTSTONE. SANDSTONE: as loose grains, clear to white, light brown. In part washing out of sandy silty claystone.
823	829	20	40	40				n	SILTY CLAYSTONE: as above
829	835	20	40	40					SILTY CLAYSTONE: reddish brown, sandy/pelletal with abundant coarse & very coarse glauconite pellets, grades to SILTSTONE.
835	841	10	30	60					SILTY GLAUCONITIC CLAYSTONE: mottled reddish brown to green, abundant very coarse glauconite nodules, trace pyrite, silty grades to SILTSTONE. SANDSTONE: loose grains as above
841	847	20	50	30				p	SILTSTONE: dark to medium greyish brown, sandy, friable, micromicaceous, common glauconite as black grains. SANDSTONE: light brown, medium to coarse grained, loose, visible porosity fair
847	850	30	60	10				f	SILTSTONE: dark to medium greyish brown, sandy, friable, micromicaceous, common glauconite as black grains
850	853	100						vg	SANDSTONE: white to yellowish brown, medium to very coarse grained, moderately sorted, clean, visible porosity very good, no shows.
853	856	80	20					f	SILTSTONE: as above SANDSTONE: as above
856	857.5								CBU @ 857.5 no shows, description in interval below
856	862	70	30					f	SANDSTONE: light brown, fine to very coarse, poorly sorted, angular, silty matrix washing out. SILTSTONE: dark grey to dark brown, firm, friable, sandy, pyritic in part, feldspathic. Trace TUFF? Pale green, aphanitic, fine feldspars, splintery,
862	868	60	40						Sst & Siltst as above trace hi-temp volcanic quartz.
868	874	100						vg	SANDSTONE: clear to white, medium to very coarse grained, angular, moderately sorted, clean, loose, quartzose with slight trace quartz overgrowths, trace mica, visible porosity very good, no shows
874	880	100						vg	SANDSTONE: whit to clear, clean as above trace TUFF: as above
880	886	100						vg	SANDSTONE: as above
886	892	100						vg	SANDSTONE: as above
892	898	100						vg	SANDSTONE: as above

898	904	100						vg	SANDSTONE: as above becoming fine to coarse
904	910	100						vg	SANDSTONE: as above
910	916	90	10					g	SANDSTONE: as above SILTSTONE: mottled greyish brown, yellowish brown, sandy, feldspathic, with fine carbonaceous laminae, occasionally dense pyrite aggregates.
916	922	95	5					vg	Sst and Siltst as above
922	928	100						vg	SANDSTONE: clear, milky white, loose grains, medium to coarse grained, well sorted, subangular to angular,
928	934	30	20	50				g	SILTY CLAYSTONE: medium grey to medium greyish brown, amorphous, very soft, micaceous in part, grades to SILTSTONE.
934	940	80	20					p	SANDSTONE: light greyish brown, fine to coarse, moderately sorted, subrounded, friable aggregates with moderate silica cement, trace mica and fine carbonaceous material. ?interlaminated with SILTSTONE: light grey, speckled, micaceous, siliceous, sandy, firm to hard, pyritic in part. marine fossils and pyritised wood.
940	946	70	30					p	SANDSTONE: as above, commonly loose, and also as aggregates with dense pyrite cement. SILTSTONE: as above
946	952	60	40					t	SILTY SANDSTONE: light grey, very fine to medium grained, poorly sorted, dense silty clay matrix, finely disseminated mica and carbonaceous material, grades to SILTSTONE, mottled greyish brown, white, grey, variably calcareous. Common loose quartz grains.
952	958	70	30					t	SILTY SANDSTONE grades to SILTSTONE as above
958	964	60	30	10				t	SILTY SANDSTONE grades to SILTSTONE as above, and to CLAYSTONE: medium grey, blocky firm
964	970	100	t					p	SANDSTONE: clear to milky, pale yellow, fine to coarse grained, moderately sorted, subangular, predominantly loose grains with variable silty micaceous matrix, slightly calcareous, occasional well cemented aggregates. Trace Tuff ? Pale green aphanitic.
970	976	60	40					t	SANDSTONE: Silty as above, very fine to medium grained, poorly sorted, siliceous and calcareous cement, trace pyrite, grades to SANDY SILTSTONE, greyish brown, calcareous, fossiliferous,
976	982	40	40	20					SILTY CLAYSTONE: medium greyish brown, firm, blocky, grades to SANDY SILTSTONE and SILTY SANDSTONE: greyish brown, very fine to coarse grained, very poorly sorted, very finely carbonaceous, trace pyrite, calcareous, fossiliferous.
982	988	80	20						SANDSTONE: light greyish brown, fine to coarse, moderately sorted, subrounded, friable aggregates with occasional dense pyrite cement. SILTSTONE: light brown, soft,. Trace TUFF, pale green, aphanitic, splintery.

988	994	10	60	30					SANDY SILTSTONE: medium grey, soft, finely sandy, grades to sandy CKAYSTONE and ARG. SANDSTONE.fossiliferous
994	1000	30	40	30					as above fossiliferous
1000	1006	10	70	20					SANDY SILTSTONE: medium grey, soft, finely sandy, grades to sandy CLAYSTONE and ARG. SANDSTONE. Fossiliferous, common nodular pyrite aggregates. Trace glauconite
1006	1012	40	50	10					SANDY SILTSTONE as above, medium to dark, very soft - pulped by bit to very hard cemented dolomitic in part. sandy, common pyrite and heavy trace glauconite. Marine fossils.
1012	1018	40	40	20					SANDY SILTSTONE: as above
1018	1024	50	40	10				n	SILTY SANDSTONE: light grey, very fine to medium grained, poorly sorted, dense silty clay matrix, finely disseminated mica and carbonaceous material, grades to SILTSTONE, mottled greyish brown, white, grey, variably calcareous. Common loose quartz grains. trace pyrite
1024	1030	100						f	SANDSTONE: very light brown, very fine to coarse grained, quartzose, moderately well sorted fine grained aggregates, bimodal, firm to friable aggregates with quartz and slight calcareous cement.
1030	1036	60	10	30					SANDSTONE: very light brown, very fine grain aggregates and loose coarse grains, bimodal, quartzose, friable.
1036	1042	80	20					p	SANDSTONE: as above silty matrix increasing SILTSTONE: brownish to white mottled, trace mica and carbonaceous matter, friable.
1042	1048	70	30					p	SANDSTONE: light brown, very fine to coarse grained, poorly sorted, silty and calcareous matrix,
1048	1054	30	20	50				n	SILTY CLAYSTONE: medium greyish brown, blocky, soft, homogeneous, grades to SILTSTONE. trace TUFF as above. Common loose fossil material.
1054	1060	10	60	30				n	SILTSTONE: medium greyish brown, mottled with patchy greyish yellow clay, sandy, clayey, glauconitic grades to claystone and sandstone.
1060	1066	70	20	10				p	CBU at 1065.5m SANDSTONE: light greyish brown, speckled, very fine grained to coarse, silty clay matrix in part. friable, calcareous and occasional pyritic cement. Firm to friable aggregates, micaceous visible porosity poor, grades to Siltstone and Claystone. No show
1066	1072	50	50						SANDSTONE: in part clear clean quartz grains, in part very fine silty cemented aggregates, grades to SANDY SILTSTONE, light to dark brown, grey, off white, mottled green, Firm, pyritic, glauconitic in part.
1072	1078	60	20	20					SANDSTONE, brown, mottled, very fine to coarse glauconitic in part, very argillaceous, poorly sorted, trace lithic and greyish green tuffaceous grains, grades to siltstone and sandy silty claystone
1078	1084	70	20	10					SANDSTONE: as above abundant silty clay matrix washing out, common marine fossils. No show.

1084	1090	90	10						SILTY SANDSTONE: greyish brown, mottled, pulped by bit, fine to coarse quartz and lithic grains washing out of dense silty clay matrix, common pyrite aggregates.
1090	1096	40	20	40					SILTY SANDSTONE as above grades to SANY CLAYSTONE light to dark grey, fossiliferous
1096	1102	40	20	40					as above, mottled, micaceous, glauconitic in part.
1102	1108	20	60	20					SANDY CLAYSTONE: light greyish brown, mottled, speckled white, disaggregated by the bit, pyritic, sticky, fossiliferous: grades to SILTSTONE: light brownish grey, soft, sticky, sandy, marine fossils. Pyrite nodules.
1108	1114	10	20	70					SILTY CLAYSTONE: medium greyish brown, sticky, sandy with rare discrete medium quartz grains, grades to SILTSTONE and SILTY SANDSTONE.
1114	1120	20	50	30					SILTSTONE: medium grey to greyish brown, yellowish grey, finely speckled with fine carbonaceous material, finely sandy, grades to SILTY SANDSTONE and SILTY CLAYSTONE.
1120	1126	50	30	20				p	SANDSTONE: light brown to medium grey, fine to medium grained, moderately sorted, argillaceous, trace calcareous cement, trace coally plant fragments. Grades to SANDY SILTSTONE and to SILTY CLAYSTONE.
1126	1132	60	20	20				p	SILTY SANDSTONE: light brown to medium grey, fine to medium grained, moderately sorted, argillaceous, trace calcareous cement, trace large coally plant fragments. Grades to SANDY SILTSTONE and to SILTY CLAYSTONE.
1132	1138	50	30	20				p	SILTY SANDSTONE: as above trace coally material. SILTSTONE medium greyish brown occasionally mottled white and greenish grey, occasionally with dense pyrite aggregates.
1138	1141	60	30	10				f	SANDSTONE: as loose grains, clear to milky, light grey, fine to medium grained, moderately sorted, subangular, argillaceous matrix washing out. Inferred porosity poor to fair. SILTSTONE, speckled grey, mottled greenish white, occasionally black/carbonaceous.
1141	1144	70	20	10				f	as above. Trace coally material
1144	1150	70	20	10				f	SANDSTONE: very light grey to light brown, very fine to medium grained, clean in part, argillaceous in part. Marine fossils fragments.
1150	1156	30	50	20				p	SANDY SILTSTONE: medium grey to greyish brown, soft, micaceous, trace fine carbonaceous material, grades to argillaceous SANDSTONE, and to silty sandy CLAYSTONE.
1156	1162	40	40	20				n	SANDSTONE: light brown, very fine to fine grained, poorly sorted, calcareous cement and argillaceous matrix washing out, occasionally with dense pyrite cement, grades to SANDY SILTSTONE and SILTY CLAYSTONE
1162	1168	40	30	30					as above, common marine fossils
1168	1174	10	10	80					SILTY CLAYSTONE: medium to dark brownish grey, blocky, firm to hard, trace

								TUFF, pale greyish green, translucent, aphanitic with trace feldspar.
1174	1180	10	10	80				SILTY CLAYSTONE: as above , occasionally greenish grey, fossiliferous, SANDSTONE: loose fine to medium grains, quartz, fossil fragments, glauconite
1180	1186	20	10	70				SILTY CLAYSTONE: dark brownish grey as above with fine quartz sand inclusions and very fine laminae
1186	1192	50	30	20			p	SANDSTONE: as loose grains, clear, very fine to fine angular grains, moderateley sorted, quartzose, trace glauconite, SILTY CLAYSTONE as above, grades to SANDY SILTSTONE
1192	1201	40	30	30				SILTY SANDSTONE with dense silty clay matrix grades to SILTY CLAYSTONE as above, trace large pyrite aggregates,
1201	1204	10	40	50				SILTY CLAYSTONE as above trace marine fossils
1204	1210	10	30	60				SILTY CLAYSTONE: as above grades to SILTSTONE, loose quartz grains washing out
1210	1216	70	20	10			p	SANDSTONE: as above grey, very fine to medium occasionally with coarse grains, loose, clay matrix washing out.
1216	1222	30	40	30				SILTY CLAYSTONE grades to SILTY SANDSTONE and SILTSTONE, common marine fossils
1222	1228	10	20	70				as above, common marine fossil fragments.
1228	1234	30	30	40				as above
1234	1240	80	10	10			p-f.	SANDSTONE: translucent, very fine to medium grained, well sorted, angular, quartzose, loose grains with trace silica cement adhering, visible porosity poor to fair.
1240	1246	70	20	10				SANDSTONE: loose grains, fine to medium, quartz and glauconite, CLAYSTONE: as above and dark greenish black, firm.
1246	1252	80	20				p	SANDSTONE: translucent, greenish grey, very fine to medium grained, well sorted, argillaceous matrix, quartzose, common glauconite and grey smoky quartz, predominantly loose grains with trace matrix adhering, slightly calcareous. SILTSTONE, light grey to greyish brown, greenish grey in part, speckled, soft to hard, sandy, calcareous in part. trace marine fossils.
1252	1258	90	10				p	SANDSTONE: as above, light greyish green, very fine to medium grained, moderately sorted, angular, trace calcareous cement, trace lithic grains and very fine glauconite. Predominantly loose grains, occasionally very hard silty and cemented aggregates, occasional very glauconitic aggregates, inferred porosity poor
1258	1264	10	80	10			p	SILTSTONE: two types, very light greenish grey, very soft pulpy, trace very fine glauconite; greyish brown, trace fine carbonaceous material, grades to silty claystone, both types finely sandy,
1264	1267	70	20	10			t	SANDSTONE: as above, SILTSTONE as above and off-white to yellowish grey, soft sticky, grades to SILTY CLAYSTONE

1267	1270	70	20	10				t	SANDSTONE: logged as rock flour, white to greenish grey, fine grained, quartzose, glauconitic in part, dense calcareous cement pulped by PDC bit. SILTSTONE greyish to greenish brown, occasionally greenish black, glauconitic in part, grades to CLAYSTONE.
1270	1273	60	20	20					SANDSTONE: greenish grey to very black, commonly rendered white as rock flour. fine to medium grained, poorly sorted, dense calcareous cement, abundantly glauconitic in part. SILTSTONE: light to dark grey, greenish grey, mottled in part, very calcareous.
1273	1279	60	20	20				p	SANDSTONE: light greyish brown, very fine to fine grained, slight calcareous cement, trace glauconite and lithic grains, abundant argillaceous matrix washing out, interbedded with SILTY CLAYSTONE: medium to dark greyish brown, glauconitic in part, pyritic in part. fossiliferous
1279	1285	70	10	20				n	SILTY SANDSTONE: dark greyish brown, as above becoming very fine grained, dense argillaceous matrix, grades to SILTONE and SILTY CLAYSTONE.
1285	1291	10	70	20					SILTY SANDSTONE: as above grades to SILTSTONE: medium brownish grey, soft, homogeneous, clayey and SILTY CLAYSTONE.
1291	1297	10	20	70					SILTY CLAYSTONE: dark olive grey, blocky, homogeneous, trace fine glauconite and very fine sand grains washing out, calcareous. Grades to SILTSTONE
1297	1303	10	20	70					SILTY CLAYSTONE: as above fossiliferous, SILTSTONE: light grey to dark greyish brown, sandy in part, calcareous, speckled with trace glauconite in part, trace mica. Fine quartz sand ?washing out
1303	1309	5	45	50					as above
1309	1315		50	50					SILTY CLAYSTONE: dark olive grey, blocky, firm to soft, micaceous in part, very finely sandy in part, calcareous, grades to SILTSTONE.
1315	1321		30	70					SILTY CLAYSTONE: as above
1321	1324	10	20	70					SILTY CLAYSTONE: medium olive grey, blocky, soft, trace large pyrite nodules, SANDSTONE: as loose grains, fine to medium grained. Common marine fossil fragments.
1324	1327	10	20	70					SILTY CLAYSTONE: as above, common glauconite grains, greenish black, fine grained irregular shaped, hard, washing out. Variably silty, grades to SILTSTONE:
1327	1330	5		95					SILTY CLAYSTONE: medium to dark greyish brown, soft, homogeneous, fossiliferous
1330	1333			100					SILTY CLAYSTONE: as above, soft, occasionally firm to hard, slightly calcareous, rare glauconite.
1333	1336		20	80					SILTY CLAYSTONE: as above grades to SILTSTONE, trace loose quartz grains washing out. Occasionally speckled with glauconite grains.
1336	1339	5	30	65					SILTY CLAYSTONE greyish brown to greenish grey, grading to SILTSTONE as

									above becoming increasingly glauconitic. Quartz grains washing out.
1339	1342	10	10	80					GLAUCONITIC SANDSTONE: as loose grains, fine grained, quartz and glauconite grains, as thin laminae in SILTY CLAYSTONE: as above becoming predominantly greenish grey.
1342	1345	10	20	70	t				as above, trace LIMESTONE: reddish brown, hard, splintery.
1345	1345	20	30	50					GLAUCONITIC SANDSTONE: as loose grains, fine grained, quartz and glauconite grains, as thin laminae in SILTY CLAYSTONE: very calcareous grades to SILTSTONE.
1345	1348	30	20	50				t	GLAUCONITIC SANDSTONE: as loose grains, very fine to fine grained,
1348	1351	10	10	60					
1351	1354	10		90					SILTY CLAYSTONE: medium grey, greyish to dark greenish grey, speckled black with fine glauconite. Grades to trace Glauconite Sandstone: as loose grains, possibly occurring as very fine laminae.
1354	1357	10		90					as above quartz decreasing, glauconite as inclusions in mudstone and as discrete grains.
1357	1360	40		60					GLAUCONITE SANDSTONE, greenish black, fine grained, glauconite predominant, well sorted, lamiated with and grains washing out of SILTY CLAYSTONE: medium grey to brownish and greenish grey, glauconitic in part.
1360	1363	20		80					as above
1363	1366	20		80					SILTY CLAYSTONE: greenish grey, glauconitic, soft amorphous, Laminations of GLAUCONITIC SANDSTONE (30% quartz) fine grained, predominantly loose glauconite, greenish black, quartz is yellow brown and green stained. Trace pyrite.
1366	1369	50		50					as above, quartz sand is 30% of greensand, SILTY CLAYSTONE: medium greyish green, calcareous in part, in part reddish brown, siliceous, very hard.
1369	1372	10		90					as above, trace quartzose very fine well sorted sandstone laminae, hard silica cement.
1372	1375	40		60					GLAUCONITE SANDSTONE, greenish black, fine to medium grained, glauconite predominant, quartz honey-yellow coloured in part, 30% of sand, variable argillaceous matrix and occasional well cemented aggregates, loose grains washing out of SILTY CLAYSTONE: medium grey to brownish and greenish grey, glauconitic in part.
1375	1378	50		50					GLAUCONITE SANDSTONE: very fine to fine grained, quartz 40% of sand component, SILTY CLAYSTONE: medium grey, soft amorphous, predominately non-glauconitic, ?interlaminated greensand and claytone.
1378	1381	50		50					as above common very coarse well rounded quartz grains, fine quartz component of greensand is 20%, commonly honey-yellow coloured quartz.

1381	1384	30		70					as above, CLAYSTONE, medium grey, amorphous, soft, trace marine fossils.
1384	1387	30		70					as above CLAYSTONE pelloidial with firm irregular aggregates, glauconitic and non-glauconitic
1387	1390	20		80					CLAYSTONE: medium grey, smooth, soft to firm, dark greenish grey, minor glauconite,
1390	1393	40		60					CLAYSTONE: medium to dark green to greyish green, bluish-greenish grey, very soft, GLAUCONITE SANDSTONE: 20% quartz, loose. CBU: greenish and reddish brown mottled claystone no shows.
1393	1396	70		30					CLAYSTONE: as above Pelloidial SANDSTONE: greyish green, irregular glauconitic and ? Non glauconitic pelloids. CBU at 1396 m: greenish and reddish brown mottled claystone no shows.
1396	1399	70		30					GLAUCONITIC PELLOIDAL CLAYSTONE: Greenish black, grades to GLAUCONITIC SANDSTONE
1399	1402	40		60					GLAUCONITE SANDSTONE: as above dense argillaceous matrix grades to SILTY GLAUCONITIC CLAYSTONE
1402	1405	70		30				n	GLAUCONITE SANDSTONE: Greenish black, 100% irregular glauconite material
1405	1408	50	30	20				n	GLAUCONITE SANDSTONE: Greenish black, 100% irregular glauconite material washing out and interbedded with SILTSTONE: light grey, pyritic and CLAYSTONE: as above.
1408	1411	90		10				p-f.	GLAUCONITE SANDSTONE: greenish black hard pelloids, irregular to predominantly rounded, 10% quartz, commonly loose occasional friable aggregates. Trace clay matrix washing out. Inferred porosity ? Fair.
1411	1414	100		t				p	GLAUCONITE SANDSTONE, greenish black pelloids, irregular to spherical, occasionally Iron stained. 10% quartz, commonly loose, common friable/argillaceous to totally fused hard aggregates with very hard silica cement. Trace CHERT ?Silcrete: dark brown, siliceous, aphanitic. Trace loose very coarse quartz grains with green inclusions.
1414	1417	90		10				t	GLAUCONITE SANDSTONE, greenish black to brown pelloids, irregular to spherical, occasionally Iron stained. 10% quartz, commonly loose, common friable/argillaceous to totally fused hard aggregates with very hard silica cement.
1417	1420	100		t				n	GLAUCONITE SANDSTONE, greenish black to brown pelloids, irregular to spherical, occasionally Iron stained. 10% quartz, common totally fused hard aggregates with very hard silica cement.
1420	1423	90		10				n	as above, quartz is 10% of sand component,
1423	1426	100						t	as above, firm to friable occasionally very hard aggregates, quartz 10%,
1426	1429	90		10				n	as above, firm to friable occasionally very hard aggregates, quartz 20%, hard argillaceous matrix in part. Trace CHERT as above. CLAYSTONE: as above. Trace green-stained very coarse quartz grains.

1429	1432	90		10					GLAUCONITE SANDSTONE: black to dark brown ? Chamositic, very hard, silicified, angular broken aggregates
1432	1435								
1435	1438	90		10				?tr	GLAUCONITIC CLAYSTONE: green, firm to hard but dispersive/sticky in drilling mud, grades to GLAUCONITIC SANDSTONE: greenish black, loose to firmly consolidated with black matrix,
1438	1441	50		50					CBU at 1440m GLAUCONITIC CLAYSTONE and GLAUCONITIC SANDSTONE as above. Very soft dispersive. No shows.
1441	1444	80		20					GLAUCONITE SANDSTONE: greenish black as above in green clay matrix. Trace fractured dolomite veins.
1444	1447								SANDY SILTSTONE: medium greyish brown, trace glauconite, very fine to fine grained, poorly sorted,
1447	1450								
1450	1453	40	40	20					GLAUCONITIC SANDSTONE: as above, 40% quartz, very fine grain to fine grained. common spherical pyrite aggregates, grades to SILTY SANDSTONE and CLAYSTONE.
1453	1456	10	40	50					SILTY CLAYSTONE: medium greyish brown, soft to firm, homogeneous, common pyrite aggregates grades to SILTSTONE. SANDSTONE as loose grains.
1456	1459	20	50	30					SILTSTONE: medium grey, greyish green, very finely sandy, trace glauconite, soft, in part hard calcareous grades to SILTY CLAYSTONE and to ARG SANDSTONE.
1459	1462	30	40	30					as above
1462	1465	10	60	30					SILTSTONE: medium grey, greyish green, brown, carbonaceous in part, occasional glauconite laminae, grades to SILTY CLAYSTONE, pyritic.
1465	1468	10	20	70					SILTY CLAYSTONE: medium grey to greyish brown, soft to firm, homogeneous, grades to SILTSTONE.
1468	1474		90	10					SANDY SILTSTONE:
1474	1477	40	20	40				trace	GLAUCONITIC SANDSTONE: 30% quartz, very fine to fine grained, argillaceous matrix, loose grains and fine silica cemented aggregates washing out, trace pyrite, visible porosity tmo shows
1477	1480								
1480	1483	30	50	20					SILTSTONE: greyish brown, sandy, grades to sandstone, very calcareous, soft to firm
1483	1486								
1486	1489	30	40	30					ARGILLACEOUS SANDSTONE grey to greyish green, very fine grained, glauconitic, calcareous, pyritic, grades silty claystone and siltstone
1489	1492								
1492	1495	20		80					SILTY CLAYSTONE: as above. SANDSTONE: as loose grains, very fine to fine, washing out of dense silty clay matrix.

1495	1498	60		40					
1498	1501	40		60					SANDSTONE: light grey, silty, very fine to medium grained, common lithic grains, grades to SANDY CLAYSTONE. Common loose glauconite grains. Trace Carbonaceous material. Trace pyrite.
1501	1504	60		40					as above
1504	1507	80		20				t.	SANDSTONE: light grey to light greenish grey, very fine to fine grained, quartzose with common lithic grains, silty, poorly sorted, very calcareous and with white clay matrix. Trace visible porosity.
1507	1510	80	10	10				t-n	SANDSTONE: as above very calcareous, moderately sorted. Trace CARBONACEOUS SILTSTONE: brown, friable.
1510	1513	70	20	10				t-n	SANDSTONE: very light grey to greenish grey, quartzose with minor lithic grains, very fine to fine grained, poorly sorted, very calcareous in part, visible porosity trace to nil, grades to SILTY CLAYSTONE: white to pale brown, sandy, soft, sandy with trace lithic grains.
1513	1516	50	10	40					
1516	1519	60	10	30				n	as above, sandstone with very calcareous cement.
1519	1522	60	10	30					
1522	1525	30	10	60					SANDY CLAYSTONE: off white to pale brown, silty grades to SANDSTONE: greyish green, very fine grained, and SILTSTONE: white, even textured, quartzose, blocky, very soft.
1525	1528	30	10	60					
1528	1531	60	10	30					
1531	1537	80	10	10					SILTY SANDSTONE: white to greyish green, very fine to medium grained, poorly sorted, grades to SILTSTONE as above . CLAYSTONE: light grey, greyish green, smooth, subfissile.
1537	1540	90		10				p	SANDSTONE: as loose grains, green to grey, very fine to fine grained, moderate to well sorted, angular, common lithic grains, white clay matrix washing out.
1540	1543	90		10				p	SANDSTONE: as loose grains, green to grey, very fine to fine grained, moderate to well sorted, angular, common lithic grains, white clay matrix washing out, very calcareous
1543	1546	70	20	10				t	SANDSTONE: as above, very fine grained, very calcareous. Visual porosity very poor Trace Carbonaceous SILTSTONE:
1546	1549	20	20	60					CLAYSTONE: very light grey, light greenish to brownish grey,
1549	1552	50	20	30					SANDY CLAYSTONE, SANDSTONE AND SILTSTONE: pale brown, homogeneous, as above, trace coal
1552	1555	60	30	10					
1555	1558	20	40	40				p	SANDSTONE: as loose grains, very light grey, to greyish green, very fine to fine grained, SILTSTONE: very light grey, greyish green and brick-red lithic grains,

									visible porosity poor. Trace COAL:
1558	1561	20	40	40				p	as above
1561	1564	40	20	40					SILTY SANDSTONE: white, very fine to fine grained, poorly sorted, abundant white clay matrix, grades to SILTSTONE as above and SANDY CLAYSTONE: 1563: spot sample, SILTY SANDSTONE 60%, nil visible porosity, no shows.
1564	1567	30	40	30					SANDY SILTSTONE grades to sandy claystone and silty sandstone.
1567	1570	70		30					as above becoming predominantly loose SANDSTONE with abundant white clay washing out.
1570	1573	100							SANDSTONE: as loose grains, light grey, clear white, pale green, fine grained, abundant multicoloured lithic grains, well sorted, subangular, predominantly loose, trace quartz cement, clay matrix washing out at shakers. poor inferred porosity, no shows.
1573	1576	100							SANDSTONE: as loose grains, light grey, clear white, pale green, fine grained, abundant multicoloured lithic grains, well sorted, subangular, predominantly loose, trace quartz cement, clay matrix washing out at shakers. poor inferred porosity, no shows.
1576	1579	100							Sst as above
1579	1582	100							Sst as above
1582	1585	100							SANDSTONE: as loose grains, light grey, clear white, pale green, fine grained, abundant multicoloured lithic grains, well sorted, subangular to subrounded, predominantly loose, occasional aggregates with dense calcite cement, trace quartz cement, clay matrix washing out at shakers. poor inferred porosity, no shows.
1585	1588	100							SANDSTONE: as loose grains, light grey, clear white, pale green, abundant multicoloured lithic grains, moderately well sorted, subangular to subrounded, predominantly loose, occasional aggregates with dense calcite cement, trace quartz cement, clay matrix washing out at shakers. poor inferred porosity, no shows.
1588	1591	100						fair	SANDSTONE: as loose grains, light grey, clear white, pale green, abundant multicoloured lithic grains, moderately well sorted, subangular to subrounded, predominantly loose, occasional aggregates with dense calcite cement, trace quartz cement, clay matrix washing out at shakers. poor inferred porosity, no shows.
1591	1594	100							SANDSTONE: as above abundant light to dark grey lithic grains, also pale green, bluish green, brick-red
1594	1597	100							sst as above
1597	1600	100							as above
1600	1603	100							as above
1603	1606	100							as above

1606	1609	60	40					t.	SANDSTONE, quartz lithic arenite. fine to medium grained, well sorted, subangular, loose with clay matrix washing out at shakers, slightly calcareous in part, abundant white grey, green red lithics. Inferred porosity poor. SILTSTONE very light grey, quartzose, homogeneous, blocky, soft.
1609	1612	80	20						as above
1612	1615	80	20					p	SANDSTONE: / loose grains and calcareous aggregates, trace pyrite.
1615	1618	90	10					p	SANDSTONE: green, light grey, very fine to fine grained, moderate sorted, silty, abundantly lithic, slightly calcareous, clay matrix washing out.
1618	1621	90	10						
1621	1624	100						p	SANDSTONE: as above
1624	1627	100							
1627	1630	90	10						
1630	1633	90	10					t.	SANDSTONE: grades to SILTSTONE: as above
1633	1636								
1636	1639	100						t.	SANDSTONE: as above calcareous cement
1639	1642	100							SANDSTONE: grey and green, as above, predominantly composed of grey cherty lithic grains and quartz 40%, well sorted, slight matrix washing out.