

Appendix A.1 – Investigation well composite logs

COMPOSITE DRILLHOLE LOG

Depth (m)	Lithology	Formation	Well Construction
0	0 - 7 SANDSTONE: Sandstone, fine grain, light brown	Tarcowie Siltstone	
7	7 - 17.5 SANDSTONE/SILTSTONE: Sandstone and siltstone, very fine grained, light grey		
20	17.5 - 45.5 SANDSTONE: Sandstone, very fine grained, light yellow to white. Orange at 24.5m and white at 28m.	Cox Sandstone	
40	45.5 - 60 SANDSTONE/SILTSTONE: Sandstone and Siltstone, very fine grained, light grey.	Tarcowie Siltstone	
60	60 - 70 SANDSTONE: Sandstone, coarse grained, orange, broken ground.	Cox Sandstone	
70	70 - 77 SANDSTONE: As above, sandstone, coarse grain, becoming light grey in colour, coarse		
80	77 - 98 SANDSTONE/SILTSTONE: Meta sandstone/siltstone, fine grained, grey	Tarcowie Siltstone	
100	98 - 112 SANDSTONE: Sandstone, coarse, yellow, mixed with fine grained metasandstone	Cox Sandstone	
120	112 - 127 SANDSTONE: Sandstone, coarse grained, light grey to white, metasandstone/siltstone, fine grained, appearing towards 127.5m		
140	127 - 196 SANDSTONE/SILTSTONE: Meta sandstone/siltstone, with occasional coarse sandstone, light grey bands appearing at 140-147m, 168m, 190m, which could be contamination from above. Broken ground 152-154m, fractured to 157m, ground conditions improving beyond 162m	Tarcowie Siltstone	
160			
180			
200	196 - 203 SANDSTONE: Metasandstone, coarser than above, light grey	Brighton Limestone	
203	203 - 206.5 SANDSTONE/SILTSTONE: Metasandstone/siltstone, dark grey		
220	206.5 - 224 MARBLE: Marble and carbonaceous sandstone, light grey to white		
224	224 - 231 MARBLE: Marble		
240	231 - 242 SLATE: Mafic, dark grey		
260	242 - 264 MARBLE: Marble. Mineralisation from 252m to 254m	Tapley Hill Formation	
280	264 - 266 SILTSTONE: Dark grey siltstone		

Driller-Date: Frank Walsh Drilling 29/5/14 - 10/6/14
Logged by: JVDA
Total depth: 265 m
Drilling method: Rotary Hammer/ Air

Completion: 254mm ID Steel Casing (0 - 6m)
157mm ID Steel Casing (0 - 203m)
Cement plug (163 - 203m)
Backfill (0 - 163m)

COMPOSITE DRILLHOLE LOG

Depth (m)	Lithology	Formation	Well Construction
0	0 - 3.5 SANDSTONE: Sandstone, fine grained, white	Cox Sandstone	
	3.5 - 10.5 SANDSTONE: Sandstone, fine grained, becoming coarser and orange		
	10.5 - 14 SANDSTONE: Sandstone, fine grained, white		
20	14 - 28 SANDSTONE: Sandstone, white - grey - brown, becoming finer grained with depth		
	28 - 35 SANDSTONE: Sandstone, fine grained, grading to siltstone, grey brown becoming dark grey		
40	35 - 42 SILTSTONE: Siltstone, fine grained, dark grey, becoming coarser with depth	Tarcowie Siltstone	
	42 - 56 SANDSTONE: Sandstone, fine/medium grained grading to coarse grained, orange	Cox Sandstone	
60	56 - 84 SILTSTONE: Siltstone, fine grained, becoming weathered and clayey with depth. Clay is light grey becoming purple between 77 - 84m.	Tarcowie Siltstone	
80			
	84 - 91 CLAY: Clay with small siltstone fragments	Cox Sandstone	
	91 - 98 SANDSTONE: Sandstone, coarse grained, weathering to orange clay		
100	98 - 112 SANDSTONE: Sandstone, medium grained, grading from white to orange and becoming coarse		
120	112 - 168 SILTSTONE: Siltstone, fine grained, dark grey. 119 - 147m large pieces of fractured siltstone	Tarcowie Siltstone	
140			
160			
180	168 - 182 SILTSTONE: Siltstone, fine grained, dark grey	Brighton Limestone	
	182 - 189 SANDSTONE, CALCAREOUS: Calcareous Metasandstone/siltstone - fracture zone		
	189 - 194 MARBLE: Marble		
200	194 - 199.5 SILTSTONE: Metasiltstone, fine grained, with marble		
	199.5 - 207 MARBLE: Marble with mineralisation, mostly pyrite, between 205 - 207m.		
	207 - 217 MARBLE: Marble with mineralisation, mostly pyrite. Black pyrite layer at 212m		
220	217 - 227.5 MARBLE: Marble, white	Tapleys Hill Formation	
	227.5 - 236 MARBLE: Marble, dark grey		
240	236 - 238 SLATE: Slate/Siltstone, dark grey-brown		

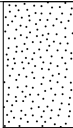
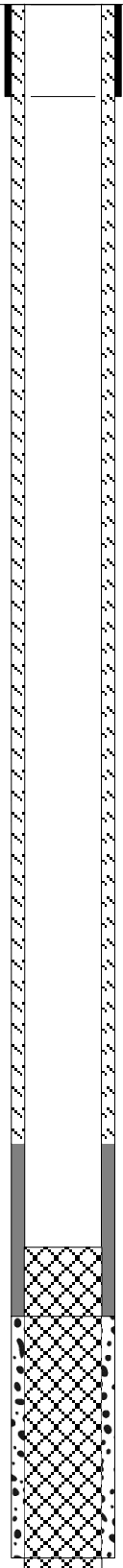
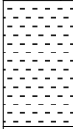
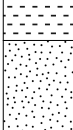
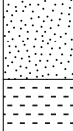
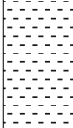
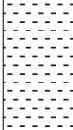
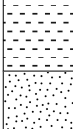
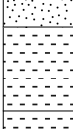




154mm Open Hole (198 - 238m)

154mm Open Hole (198 - 238m)

Driller-Date: Frank Walsh Drilling 1/7/14 - 11/7/14
Logged by: JVDA/RK
Total depth: 238 m
Drilling method: Rotary Hammer/ Air

Completion: 254mm ID Steel Casing (0 - 6m)
207mm ID Steel Casing (0 - 112.5m)
157mm ID Steel Casing (0 - 198m)
Cement plug (158 - 198m)

COMPOSITE DRILLHOLE LOG

Depth (m)	Lithology		Formation	Well Construction
0		0 - 10.5 SANDSTONE: Sandstone, light brown with clay at 7m	Tarcowie Siltstone	 Vertical Slot Screen (108 - 136m) Natural Backfill (114 - 135m)
10		10.5 - 21 SILTSTONE: Siltstone/metasiltstone, light grey, grading to sandstone with depth		
20		21 - 24.5 SILTSTONE: Siltstone, light grey		
30		24.5 - 38.5 SANDSTONE: Sandstone, weathered, cream, fine grained, with minor clay, Course grain, orange from 28 to 35m, cream 35 to 38m	Cox Sandstone	
40		38.5 - 70 SILTSTONE: Siltstone, light grey, metasiltstone with depth (>57m)	Tarcowie Siltstone	
50				
60				
70		70 - 77 SANDSTONE: Sandstone, coarse grained, light brown, broken ground from 68 to 71m, sample at 78m could be contamination from above	Cox Sandstone	
80		77 - 84 SILTSTONE: Sandstone, lighter, quartzite, coarse grained, grading to grey metasiltstone.	Tarcowie Siltstone	
90		84 - 118 SILTSTONE: Siltstone/metasiltstone, grey		
100				
110				
120		118 - 122 SANDSTONE/SILTSTONE: Siltstone, with sandstone, coarse quartzite becoming evident towards 122m	Cox Sandstone	
		122 - 125 SANDSTONE: Sandstone, lighter grey, coarse grained quartzite		
130		125 - 131 SANDSTONE: Sandstone, yellow, coarse	Tarcowie Siltstone	
		131 - 136 SILTSTONE: Siltstone/metasiltstone, grey		
140				

Driller-Date: Frank Walsh Drilling 20/5/14 - 28/5/14

Logged by: JVDA

Total depth: 136 m

Drilling method: Rotary Hammer/ Air

Completion: 254mm ID Steel Casing (0 - 6m)

157mm ID Steel Casing (0 - 114m)

127mm ID Screen (108 - 136m)

Cement plug (99 - 114m)

COMPOSITE DRILLHOLE LOG

Depth (m)	Lithology	Formation	Well Construction
0			
10	0 - 21 SANDSTONE: Sandstone, fine grained, orange	Cox Sandstone	
20			
30	21 - 35 SANDSTONE: Sandstone, very fine grain, light yellow to light brown		
40		Tarcowie Silstone	
50	35 - 52 SANDSTONE: Sandstone, very fine grained, brown		
60		Cox Sandstone	
70			
80	63 - 98 SANDSTONE/SILTSTONE: Metasiltstone/sandstone, fine grained, light grey, grey clay from 73 to 84m and 95 to 98m	Tarcowie Silstone	
90			
100		Cox Sandstone	
110	98 - 113 SANDSTONE: Sandstone, light brown - orange, coarse, mixed with light brown to white clays		
120		Tarcowie Silstone	
130	113 - 155 SANDSTONE: Metasandstone, fine, dark grey, sandstone bands at 129.5m		
140			
150			
160			

Driller-Date: Frank Walsh Drilling 11/06/14 - 13/06/14

Logged by: JVDA

Total depth: 155 m

Drilling method: Rotary Hammer/ Air

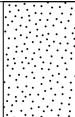
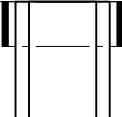



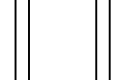

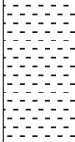


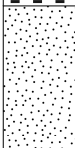
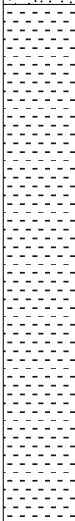
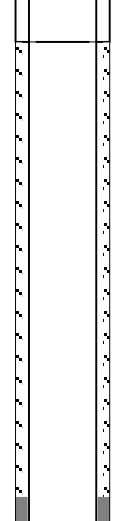

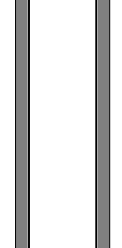
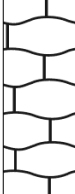

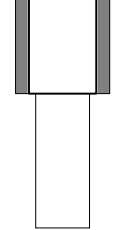


Completion: 254mm ID Steel Casing (0 - 6m)

157mm ID Steel Casing (0 - 125m)

Backfill (0 - 125m)

203mm Open Hole (125 - 155m)

COMPOSITE DRILLHOLE LOG

Depth (m)	Lithology		Formation	Well Construction
0		0 - 21 SANDSTONE: Sandstone, fine grained, light brown - orange	Cox Sandstone	
20		21 - 24 SANDSTONE: Sandstone, fine grained, light yellow - white		
40		24 - 49 SANDSTONE: Sandstone, fine grained, light yellow - light brown at depth		
49		49 - 52.5 SILTSTONE: Siltstone, fine grained, grey	Tarcowie Siltstone	
52.5		52.5 - 59.5 SANDSTONE: Sandstone and clay, green, bright yellow	Cox Sandstone	
60		59.5 - 87.5 SILTSTONE: Siltstone, fine grained, clayey with contamination from sandstone above	Tarcowie Siltstone	
80		87.5 - 91 CLAY: Clay, fine grained, brown - grey	Cox Sandstone	
100		91 - 117 SANDSTONE: Sandstone, coarse grained, light yellow becoming white from 107 - 117m		
120		117 - 210 SILTSTONE: Siltstone, contaminated with above sandstone from 117 - 232m	Tarcowie Siltstone	
140				
160				
180				
200				
210		210 - 214 MARBLE: Marble and metasiltstone/sandstone, fine grained, grey	Brighton Limestone	
220		214 - 255 MARBLE: Marble		
240				
260		255 - 267 SLATE: Slate, dark grey/blue	Tapley Hill Fm	
270		267 - 270 SANDSTONE, CALCAREOUS: Sandstone, calcareous		
280		270 - 294 SANDSTONE, SILTSTONE: Siltstone with pyrite and calcareous sandstone bands,		
300				

Driller-Date: Frank Walsh Drilling 16/6/14 - 24/6/14

Logged by: JVDA

Total depth: 294 m

Drilling method: Rotary Hammer/ Air

Completion: 254mm ID Steel Casing (0 - 6m)

207mm ID Steel Casing (0 - 123.7m)

157mm ID Steel Casing (0 - 270m)

Cement plug (205 - 270m)