

Appendix 4 – DOM Mt Vernon DDH 001

Graphic drill log	2
Drill log	27

Graphic drill log

MIDLANDS ENERGY

DRILL HOLE No M.H.V.1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting	513 024
			Northing	5 296 375
			Elevation (m)	222
			Azimuth_Mag	—
			Dip	-90°

SHEET 1 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES				PICTORIAL LOG		GRAPHIC LOG				GEOLOGY NOTES	SUMMARY LOG	
				1	3	1	3	5	STRUCT	ALT	mm	mm	mm			mm
1	-	-	-							0.00-12.00: OXIDISED, WEATHERED AND BROKEN SANDSTONE WITH MINOR MUDSTONE. SOME CORE LOSS NEAR 11.45m					0.00-17.00: SANDSTONE, LITHIC	
2	-	-	-													
3	-	-	-													
4	-	-	-													
5	-	-	-													
6	-	-	-												18	
7	-	-	-													
8	-	-	-													
9	-	-	-													
10	-	-	-													
11	-	-	-													
12	-	-	-											12.00-17.10: GREY TO PALE GREY, MEDIUM TO FINE-GRAINED LITHIC SANDSTONE		
13	-	-	-													
14	-	-	-													
15	-	-	-												18	
16	-	-	-													
17	-	-	-											17.00-19.20: MUDSTONE, GREY		
18	-	-	-											17.10-17.50: GREY TO DARK GREY MUDSTONE		
19	-	-	-											19.20-20.30: MUDSTONE, CARBONACEOUS, TRANSITIONAL BASAL SECTION	MS	
20	-	-	-											19.50-20.50: BLACK CARBONACEOUS MUDSTONE	MS	

REMARKS **ORIGINALLY LOGGED BY CAROL BACON (WHEN HOLE FIRST DRILLED) TO 300m. QUICK LOG CARRIED OUT BY KAREN ADAMS AT MRT TO END OF HOLE**

NB: ORIGINAL MEASUREMENTS MORE RELIABLE DUE TO CORE DEGRADATION AND CORE BLOCK MOVEMENT.

MIDLANDS ENERGY

DRILL HOLE No Mt.V.1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting	513 024
			Northing	5 296 375
			Elevation (m)	222
			Azimuth_Mag	—
			Dip	-90°

SHEET 2 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES	PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG
					STRUCT	ALT			
Prefix	%						mm		
21	—	—	—				0.05 0.1 0.2 0.3 0.4 0.5 0.6	15.50-22.00: SANDSTONE, GRAYING INTO FINE SPARKLE / FINE GRAINED QUARTZ SANDSTONE, VAGUELY FINELY WITH CARBONACEOUS LAMINAE 20.50-23.50: GREY TO DARK GREY MUDSTONE WITH MINOR CARBONACEOUS MUDSTONE	MS/MS
22	—	—	—					22.00-23.50: MUDSTONE, GREY	MS/MS
23	—	—	—						
24	—	—	—					23.50-29.95: PALE GREY TO GREY, MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE. VITRINITE CLASTS PRESENT BETWEEN 24.00 & 25.00 CM, ALONG WITH FLACER BANDS, CONGLOMERATIC ZONES OF MUDSTONE CLASTS (UP TO 10 CM) BETWEEN 28.40-29.20 CM. MUDSTONE AND VITRINITE CLASTS ALONG WITH FLACER BANDING FROM 20 CM. INCREASING CARBONACEOUS MUDSTONE DOWNHOLE.	
25	—	—	—					23.50-29.95: SANDSTONE, LITHIC, FINE TO MEDIUM GRAIN SIZE, MINOR CARBONACEOUS LAMINAE, INCIPENT PYRITE SPHERULES (<20mm) AND DISSEMINATED PYRITE.	
26	—	—	—					25.00-29.50: SANDSTONE, LITHIC, FINE TO MEDIUM GRAIN SIZE, MINOR CARBONACEOUS LAMINAE, INCIPENT PYRITE SPHERULES (<20mm) AND DISSEMINATED PYRITE.	
27	—	—	—						
28	—	—	—						
29	—	—	—						
30	—	—	—					29.50-31.70: SANDSTONE, LITHIC, FINE TO MEDIUM-GRAINED, MINOR CARBONACEOUS AND COALY DEBRIS, MINOR CLAY PELLET CONGLOMERATES, MINOR CARBONATE CEMENT, AND VERY MINOR REDUCTION CENTRES OVER PYRITIC COALY DEBRIS	SS
31	—	—	—						
32	—	—	—						
33	—	—	—						
34	—	—	—						
35	—	—	—						
36	—	—	—						
37	—	—	—						
38	—	—	—						
39	—	—	—						
40	—	—	—						
REMARKS									

MIDLANDS ENERGY

DRILL HOLE No Mt.V.1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ <u>513 024</u>
			Northing_ <u>5 296 375</u>
			Elevation (m) <u>222</u>
			Azimuth_Mag <u>-</u>
			Dip <u>-90°</u>

SHEET 3 OF 25

PROJECT:
PROSPECT: <u>MOUNT VERNON</u>
DATE:
LOGGED BY: <u>KAREN ADAMS</u>

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO.	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG				GEOLOGY NOTES	SUMMARY LOG
				1	3	1	3	5	STRUCT	ALT	0.05	0.25	1	2		
41	-	-	-													
42	-	-	-													
43	-	-	-													
44	-	-	-													
45	-	-	-													
46	-	-	-													
47	-	-	-													
48	-	-	-													
49	-	-	-													SD
50	-	-	-													
51	-	-	-													
52	-	-	-													
53	-	-	-													
54	-	-	-													
55	-	-	-													
56	-	-	-													
57	-	-	-													
58	-	-	-													57.70-58.40: SANDSTONE, LITHIC, ABUNDANT CLAY PELLET CONGLOMERATES INCLUDING CARBONACEOUS MUDSTONES, COALY DEBRIS
59	-	-	-													58.40-58.50: COAL, DULL <1% BRIGHT BANDS 58.50-60.50: SANDSTONE, LITHIC
60	-	-	-													59.95-60.70: CARBONACEOUS MUDSTONE AND COAL
REMARKS																

MIDLANDS ENERGY

DRILL HOLE No M4.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting <u>513 024</u>
			Northing <u>5 296 375</u>
			Elevation (m) <u>222</u>
			Azimuth_Mag <u>-</u>
			Dip <u>-90°</u>

SHEET 4 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES	PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG						
					STRUCT	ALT									
				mm											
				1	3	1	3	5	0.05	0.5	2	10	50		
61	-	-	-											60.30-60.60: COAL, DULL, 5-1% BRIGHT BANDS 60.60-62.00: CORE LOSS 60.70-62.00: GREY MUDSTONE	MS
62	-	-	-												MS
63	-	-	-											62.00-63.00: CORE LOSS 62.00-63.80: MUDSTONE/SILTSTONE INTERBEDS, BROWN, FISSILE	CL
64	-	-	-											63.00-67.00: GREY MUDSTONE	
65	-	-	-											63.80-67.00: MUDSTONE, GREY, INCREASING SILT TOWARDS BASE	
66	-	-	-												MS
67	-	-	-												
68	-	-	-											67.00-69.10: GREY TO CREAM, FINE TO MEDIUM-GRAINED LITHIC SANDSTONE 67.00-71.30: SANDSTONE, LITHIC, FINE-GRAINED, FISSILE FROM 69.2m OR DUE TO BIOTITE LAMINAE, PLANAR CROSS-BEDS VISIBLE	SS
69	-	-	-											69.10-71.25: MUDSTONE AND MINK SANDSTONE	
70	-	-	-												MS
71	-	-	-												
72	-	-	-											71.25-81.30: MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH SOME VITRINITE CLASTS 71.30-82.70: SANDSTONE, LITHIC, FINE TO MEDIUM-GRAINED, MINK CLAY PELLET CONGLOMERATES, VERY MINK, COALY AND CARBONACEOUS MUDSTONE DEBRIS UNUSUAL INCIDENT SPHERULES OF PYRITE AT 110m (SIMILAR TO 25-27.5m) WITH DIAMETERS ALSO < 20mm	
73	-	-	-												
74	-	-	-												
75	-	-	-												
76	-	-	-												SS
77	-	-	-												
78	-	-	-												
79	-	-	-												
80	-	-	-												
REMARKS															

MIDLANDS ENERGY

DRILL HOLE No M4.V.1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting_	513 024
			Northing_	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

SHEET 5 OF 25

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO.	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG			
				%	1	3	1	3	5	STRUCT				ALT		
81	-	-	-													
82	-	-	-								0.06 0.5 2 8 32 63	81.30-81.90: CONGLOMERATIC BASE TO SANDSTONE UN IT. ROUNDED TO SUB-ROUNDED, MUDSTONE (AND MINOR CARBONACEOUS MUDSTONE) CLASTS UP TO 4cm. SANDSTONE SUPPORTED.				
83	-	-	-									81.90-82.90: MUDSTONE				
84	-	-	-									82.90-121.60: LITHIC SANDSTONE WITH CONGLOMERATIC ZONES FROM 82.9-86.2m, 107-107.4m AND 114.4-115.4m. MINOR FLACR BANDING				
85	-	-	-													
86	-	-	-													
87	-	-	-													
88	-	-	-													
89	-	-	-													
90	-	-	-													
91	-	-	-													
92	-	-	-													
93	-	-	-													
94	-	-	-													
95	-	-	-													
96	-	-	-													
97	-	-	-													
98	-	-	-													
99	-	-	-													
100	-	-	-													
REMARKS																

MIDLANDS ENERGY

DRILL HOLE No M.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting	513 024
			Northing	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

SHEET 6 OF 25

PROJECT:	
PROSPECT: MOUNT VERNON	
DATE:	
LOGGED BY: KAREN ADAMS	

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG				GEOLOGY NOTES	SUMMARY LOG
				%	STRUCT	ALT	mm	0.08	0.5	2	32	64				
101	-	-	-													
102	-	-	-													
103	-	-	-													
104	-	-	-													
105	-	-	-													
106	-	-	-													
107	-	-	-													
108	-	-	-													
109	-	-	-													
110	-	-	-													88
111	-	-	-													
112	-	-	-													
113	-	-	-													
114	-	-	-													
115	-	-	-													
116	-	-	-													
117	-	-	-													
118	-	-	-													
119	-	-	-													
120	-	-	-													
REMARKS																

MIDLANDS ENERGY

DRILL HOLE No Mt.V.1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 7 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG	
				1	3	1	3	5	STRUCT	ALT				
121	-	-	-											
122	-	-	-									121.60-125.50: MUDSTONE AND CARBONACEOUS MUDSTONE 121.70-124.20: MUDSTONE, GREY/PALE GREEN/BROWN LAMINATED AND INCREASING SILT TOWARD BASE, TRACES OF COAL AS 2-5mm PLIES		
123	-	-	-											
124	-	-	-											
125	-	-	-									124.20-127.00: SANDSTONE, LITHIC, FINE-GRAINED, BROWN AND "DIRTY" IN APPEARANCE, POORLY DEFINED CARBONACEOUS LAMINAE		
126	-	-	-									125.50-134.50: GRADING FROM INTERBEDDED MUDSTONE AND SANDSTONE-TO MEDIUM-GRAINED LITHIC SANDSTONE		
127	-	-	-									127.00-134.40: SANDSTONE, LITHIC, GREY AND "CLEAN", VERY MINOR CARBONACEOUS DEBRIS		
128	-	-	-											
129	-	-	-											
130	-	-	-											
131	-	-	-											
132	-	-	-											
133	-	-	-											
134	-	-	-											
135	-	-	-									134.35-137.70: MUDSTONE 134.40-137.70: MUDSTONE, GREY/GREEN, SMECTITE RICH IN PART		
136	-	-	-											
137	-	-	-											
138	-	-	-									137.70-138.85: COAL WITH SOME CARBONACEOUS MUDSTONE 137.70-138.85: COAL, DUL. CLY. BRIGHT BANDS, SINGLE 5mm STRONG BAND		
139	-	-	-									138.85-140.20: MUDSTONE 138.85-140.20: MUDSTONE, GREY/GREEN, SILTY TOWARDS BASE		
140	-	-	-											
REMARKS														

MIDLANDS ENERGY

DRILL HOLE No Mt.V. 1

SHEET 8 OF 25

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG
				1	3	1	3	5	STRUCT	ALT	mm	mm	mm	mm			
141	-	-	-													140.20-140.60: LITHIC SANDSTONE	MS
142	-	-	-													140.60-140.90: MUDSTONE	SS
143	-	-	-													140.90-159.20: MEDIUM-GRAINED LITHIC SANDSTONE	MS
144	-	-	-													140.20-159.17: SANDSTONE, GREY AND PALE GREEN, FINE/MEDIUM, COARSE-GRAINED, VERY MINOR COAL DEBRIS.	
145	-	-	-														
146	-	-	-														
147	-	-	-														
148	-	-	-														
149	-	-	-														SS
150	-	-	-														
151	-	-	-														
152	-	-	-														
153	-	-	-														
154	-	-	-														
155	-	-	-														
156	-	-	-														
157	-	-	-														
158	-	-	-														
159	-	-	-														
160	-	-	-													159.20-159.60: COAL WITH SOME CARBONACEOUS MUDSTONE 159.17-159.70: COAL, DULL, 21% BRIGHT BANDS, 78% HEAVY DULL 159.20-160.00: MUDSTONE 159.70-160.70: MUDSTONE, GREY/BROWN	MS
REMARKS																	

MIDLANDS ENERGY

DRILL HOLE No Mt.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 9 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES				PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG
				1	3	1	3	5	STRUCT	ALT	mm	0.00	0.2	0.5		
161	-	-	-												M5	
162	-	-	-													
163	-	-	-													
164	-	-	-													
165	-	-	-													
166	-	-	-													
167	-	-	-													
168	-	-	-													
169	-	-	-													
170	-	-	-													
171	-	-	-													
172	-	-	-							171.40-172.00: COARSE-GRAINED, LITHIC SANDSTONE SUPPORTED, ROUNDED MUDSTONE CLASTIC UP TO 2cm IN SIZE 172.00-181.70: MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH SOME CONGLOMERATIC CLASTS UPHOLE AND MUDSTONE AT 178m					CO-1	
173	-	-	-													
174	-	-	-													
175	-	-	-													
176	-	-	-													
177	-	-	-													
178	-	-	-													
179	-	-	-													
180	-	-	-													
REMARKS																

MIDLANDS ENERGY

DRILL HOLE No M.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 10 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG
				PREFIX	%	STRUCT	ALT	mm	0.00	0.5	1	2	3				
181	-	-	-														18
182	-	-	-											181.70-181.80: CARBONACEOUS MUDSTONE 181.80-204.30: MEDIUM TO COARSE-GRAINED LITHIC SANDSTONE WITH MUDSTONE AND MINOR VIRKINITE CLASIS OF UP TO 3cm AT 195m			
183	-	-	-														
184	-	-	-														
185	-	-	-														
186	-	-	-														
187	-	-	-														
188	-	-	-														
189	-	-	-														18
190	-	-	-														
191	-	-	-														
192	-	-	-														
193	-	-	-														
194	-	-	-														
195	-	-	-														
196	-	-	-														
197	-	-	-														
198	-	-	-														
199	-	-	-														
200	-	-	-														
REMARKS																	

MIDLANDS ENERGY

DRILL HOLE No M+V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (ΔMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 11 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG
				1	3	1	3	5	STRUCT	ALT			
200	-	-	-										
202	-	-	-										
203	-	-	-										
204	-	-	-										
205	-	-	-										
206	-	-	-										
207	-	-	-										
208	-	-	-										
209	-	-	-										
210	-	-	-										
211	-	-	-										
212	-	-	-										
213	-	-	-										
214	-	-	-										
215	-	-	-										
216	-	-	-										
217	-	-	-										
218	-	-	-										
219	-	-	-										
220	-	-	-										
REMARKS													

MIDLANDS ENERGY

DRILL HOLE No M+V.1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 12 OF 25

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG	
				1	3	1	3	5	STRUCT	ALT	0.06	0.1	2	8	32			64
221	-	-	-															
222	-	-	-															
223	-	-	-															
224	-	-	-															
225	-	-	-															
226	-	-	-															CS
227	-	-	-															
228	-	-	-															
229	-	-	-															
230	-	-	-															
231	-	-	-															
232	-	-	-															
233	-	-	-															
234	-	-	-															
235	-	-	-															
236	-	-	-															
237	-	-	-															MS
238	-	-	-															
239	-	-	-															
240	-	-	-															

REMARKS

MIDLANDS ENERGY

DRILL HOLE No M+V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting_	513 024
			Northing_	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

SHEET 13 OF 25

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES	PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG
					STRUCT	ALT			
				%			0 0.5 1 2 4 8 16 32 64		
244									
245								244.30-245.90: SANDSTONE, QUARTZ-POOR, TRANSITIONAL TO SUB-LITHIC AND LITHIC, FINE-GRAINED, "DIRTY" IN APPEARANCE DUE TO CARBONACEOUS "STAINING" IN ZONES AND BANDS	
246								245.00-248.80: QUARTZ-RICH SUB-LITHIC SANDSTONE 245.90-249.70: SANDSTONE, AS ABOVE, BUT "CLEANER" AND POORLY CEMENTED, ALL FELDSPARS DECOMPOSED TO FORM A KAOLINITIC MATRIX, CORE RECOVERY ~50%, MINOR LAMINAE DUE TO MICA OR FELDSPAR RICH BANDS OR TO CARBONACEOUS MATTER	
248									SS
249								248.80-249.00: MUDSTONE AND CARBONACEOUS MUDSTONE 249.00-252.00: MUDSTONE	MS
250								249.90-250.00: COAL, HEAVY DULL, THIN TRIFACIOUS SHALE ROOF 250.00-250.70: MUDSTONE, GREY, CARBONACEOUS	
251								250.70-251.60: SANDSTONE, SUB-LITHIC, GREY, FINE-GRAINED	MS
252								251.60-252.00: MUDSTONE, GREY, MINOR PLANT FOSSILS 251.00-252.40: COAL AND CARBONACEOUS MUDSTONE 252.00-253.40: COAL, DULL, 5-10% BRIGHT BANDS, POOR CORE RECOVERY OF ONLY 32%	
254								253.40-260.40: MUDSTONE WITH MINOR CARBONACEOUS MUDSTONE INCREASING DOWN HOLE 253.40-264.40: SILTSTONE (40%) MUDSTONE (60%) FINE-GRAINED SUB-LITHIC (? QUARTZ RICH LITHIC SANDSTONE (20%)) INTERBEDDED. MUDSTONE IS WELL LAMINATED - WHITE/CREAM/BLACK ETC.	
257									MS
259									
260									
REMARKS									

MIDLANDS ENERGY

DRILL HOLE No M.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 14 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

CAROL BACON

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO.	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG	
				1	3	1	3	5	STRUCT	ALT				
261														
262														MS
263														MS
264														
265											264.40-264.85: CRUSHED ZONE, IN SIMILAR ROCKS TO THE 253.4-264.40 INTERVAL			
266											264.85-265.40: MUDSTONE, GREY			
267											265.40-267.30: FINE-GRAINED, QUARTZ-RICH (SUB-LITHIC) SANDSTONE AND MINOR MUDSTONE			SS
268											265.40-267.30: SANDSTONE, LITHIC, FINE-GRAINED, MINOR GREY MUDSTONE INTERBEDS			
269											267.30-267.80: MUDSTONE			
270											267.80-268.90: MUDSTONE, GREY, LAMINATED			MS
271											268.90-269.80: COAL, DULL TO HEAVY DULL (BUT ONLY 50% CORE RECOVERY)			MS
272											269.40-281.60: INTERBEDDED MUDSTONE AND SANDSTONE			
273											269.80-269.80: COAL, DULL TO HEAVY DULL (BUT ONLY 50% CORE RECOVERY)			
274											268.90-269.80: COAL, DULL TO HEAVY DULL (BUT ONLY 50% CORE RECOVERY)			
275											268.00-270.00: MUDSTONE, GREY AND CARBONACEOUS			
276											270.00-272.00: SILTSTONE (45%) MUDSTONE (45%) FINE-GRAINED SUB-LITHIC (1 QUARTZ-RICH LITHIC)			
277											270.00-272.00: SILTSTONE (45%) MUDSTONE (45%) FINE-GRAINED SUB-LITHIC (1 QUARTZ-RICH LITHIC) SANDSTONE (0%) INTERBEDDED, LAMINATED MUDSTONES			
278											272.00-272.20: CRUSHED ZONE (BRECCIA) IN GREY MUDSTONE			
279											272.20-275.00: SANDSTONE, FELDSPATHIC QUARTZ, TRANSITIONAL TO SUB-LITHIC AND LITHIC, MINOR GREY MUDSTONE			
280											275.00-275.20: CRUSHED ZONE (BRECCIA) IN GREY MUD/SILTSTONE			MS
281											275.20-275.40: SANDSTONE, FELDSPATHIC QUARTZ, TRANSITIONAL TO SUB-LITHIC AND LITHIC, IRREGULAR CARBONACEOUS AND MICACEOUS LAMINAE, VERY MINOR BRIGHT COAL LAMINAE.			MS
282											275.40-275.70: CRUSHED ZONE (BRECCIA) IN MUDSTONE / SILTSTONE			
283											275.70-278.00: SILTSTONE AND QUARTZ (2 FELDSPAR) SANDSTONE TRANSITIONAL TO SUB-LITHIC / LITHIC SANDSTONE. CORE BROKEN AND MAY BE PART OF A LARGER CRUSHED ZONE			
284											278.00-278.60: MUDSTONE, CARBONACEOUS AND GREY SILTSTONE, INTERBEDDED			
285											278.60-279.30: SANDSTONE, SUB-LITHIC (? QUARTZ-RICH LITHIC) FINE-GRAINED AND LAMINATED WITH CARBONACEOUS MATTER			
286											279.30-284.60: SANDSTONE, LITHIC, FINE TO MEDIUM-GRAINED, MINOR CARBONATE VEINING AND REPLACEMENT.			
287														
REMARKS														

MIDLANDS ENERGY

DRILL HOLE No M.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 16 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG				GEOLOGY NOTES	SUMMARY LOG	
				PREFIX	%					STRUCT	ALT	mm	mm				
					1	3	1	3	5				0.05	0.1			0.2
301																	
302																	
303														302.05-319.50 GRADINGS FROM FINE TO MEDIUM-GRAINED LITHIC TO SUB-LITHIC SANDSTONE AND SOME MUDSTONE AND OCCASIONAL MUDSTONE CLASTS			
304																	
305																	
306																	
307																	
308																	
309																	
310																	
311																	
312																	
313																	
314																	
315																	
316																	
317																	
318																	
319																	
320														319.50-323.10: QUARTZ-RICH SANDSTONE WITH FLACER BANDING		SS	
REMARKS																	

MIDLANDS ENERGY

DRILL HOLE No Mt.V.1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting_	513 024
			Northing_	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

SHEET 17 OF 25

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	FROD	SAMPLE NO	SULPHIDES	PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG
					STRUCT	ALT			
PREFIX							mm		
							0.00 0.5 1 2 3 4 5		
321	-	-	-						
322	-	-	-						
323	-	-	-					323.10-326.20: QUARTZ-RICH SANDSTONE GRADING TO SUB-LITHIC SANDSTONE DOWNHOLE WITH FLACER BANDING	
324	-	-	-						
325	-	-	-						
326	-	-	-					326.20-330.00: SUB-LITHIC TO LITHIC, MEDIUM TO COARSE-GRAINED SANDSTONE AND SOME FLACER BANDING	
327	-	-	-						
328	-	-	-						
329	-	-	-						
330	-	-	-					330.00-332.20: MUDSTONE AND CARBONACEOUS MUDSTONE	
331	-	-	-						
332	-	-	-					332.20-336.10: QUARTZ SANDSTONE AND FLACER BANDING	
333	-	-	-						
334	-	-	-						
335	-	-	-						
336	-	-	-					336.10-337.00: SUB-LITHIC SANDSTONE INTERBEDDED WITH MUDSTONE	
337	-	-	-					337.00-338.00: CORE LOSS	
338	-	-	-					338.00-341.25: INTERBEDDED MUDSTONE AND SANDSTONE, COARSE-BANDING PRESENT AND SANDSTONE INCREASING DOWNHOLE	
339	-	-	-						
340	-	-	-						
REMARKS									

MIDLANDS ENERGY

DRILL HOLE No Mt.V.1

SHEET 18 OF 25

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting	513 024
			Northing	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG	
				PREFIX	%				STRUCT	ALT				
					1	3	1	3						5
341	-	-	-											
342	-	-	-									341.25-345.00: SUB-LITHIC, QUARTZ-RICH SANDSTONE		
343	-	-	-											
344	-	-	-											
345	-	-	-											
346	-	-	-									345.00-350.00: INTERBEDDED AND CROSS-BEDDED MUDSTONE AND FINE-GRAINED SANDSTONE		
347	-	-	-											
348	-	-	-											
349	-	-	-											
350	-	-	-									350.00-355.00: MUDSTONE AND MINOR VERY FINE-GRAINED SANDSTONE		
351	-	-	-											
352	-	-	-											
353	-	-	-											
354	-	-	-											
355	-	-	-									355.00-370.00: INTERBEDDED MUDSTONE AND FINE TO MEDIUM-GRAINED SANDSTONE (USUALLY CONGLOMERATIC) SANDSTONE INCREASING DOWNHOLE		
356	-	-	-											
357	-	-	-											
358	-	-	-											
359	-	-	-											
360	-	-	-											
REMARKS														

MIDLANDS ENERGY

DRILL HOLE No MIV.1

SHEET 19 OF 25

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG				GEOLOGY NOTES	SUMMARY LOG	
				PREFIX	%				STRUCT	ALT	0 06	2 5	8	32			64
					1	3	1	3									
361																	
362																	
363																M.G.	
364																M.G.	
365																	
366																	
367																	
368																	
369																	
370																	
371														370.30-402.60 INTERBEDDED MUDDY ONG AND MEDIUM TO COARSE-GRAINED SANDSTONE			
372																	
373																	
374																	
375																M.G.	
376																	
377																	
378																	
379																	
380																	
REMARKS																	

MIDLANDS ENERGY

DRILL HOLE No M+V.1

SHEET 20 OF 25

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting_	513 024
			Northing_	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG				GEOLOGY NOTES	SUMMARY LOGS	
				PREFIX	%					STRUCT	ALT	mm					
					1	3	1	3	5			0.06	0.5	2			8
381	-	-	-														
382	-	-	-														
383	-	-	-														
384	-	-	-														
385	-	-	-														
386	-	-	-														
387	-	-	-														
388	-	-	-														
389	-	-	-													M5	
390	-	-	-													CS	
391	-	-	-														
392	-	-	-														
393	-	-	-														
394	-	-	-														
395	-	-	-														
396	-	-	-														
397	-	-	-														
398	-	-	-														
399	-	-	-														
400	-	-	-														
REMARKS																	

MIDLANDS ENERGY

DRILL HOLE No M.V. 1

SHEET 21 OF 25

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting_	513 024
			Northing_	5 296 315
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

PROJECT:
PROSPECT: MOUNT VERNON
DATE:
LOGGED BY: KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG					GEOLOGY NOTES	SUMMARY LOG	
				1	3	1	3	5	STRUCT	ALT	0.06	0.5	2	8	32			64
401																		MS
402																		SS
403																		
404																		
405																		
406																		
407																		
408																		
409																		
410																		
411																		MS
412																		
413																		
414																		
415																		
416																		
417																		
418																		
419																		
420																		
REMARKS																		

MIDLANDS ENERGY

DRILL HOLE No M.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)
			Easting_ 513 024
			Northing_ 5 296 375
			Elevation (m) 222
			Azimuth_Mag -
			Dip -90°

SHEET 22 OF 25

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES					PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG	
				1	3	1	3	5	STRUCT	ALT				
421	-	-	-						FT					
422	-	-	-											MS
423	-	-	-									422.50-424.20: INTERBEDDED SANDSTONE AND MUDSTONE		SS MS
424	-	-	-									424.20-426.60: MUDSTONE WITH CROSS-BEDDING AND VERY MINOR SANDSTONE		MS
425	-	-	-											MS
426	-	-	-											
427	-	-	-									426.60-428.10: MEDIUM TO COARSE-GRAINED, LITHIC (QUARTZ RICH) SANDSTONE AND VERY MINOR MUDSTONE		
428	-	-	-											
429	-	-	-											
430	-	-	-											SS
431	-	-	-											
432	-	-	-											
433	-	-	-											
434	-	-	-											
435	-	-	-									435.10-440.60: MUDSTONE AND MINOR SANDSTONE		
436	-	-	-											
437	-	-	-											MS
438	-	-	-											
439	-	-	-											
440	-	-	-											
REMARKS														

MIDLANDS ENERGY

DRILL HOLE No MH.V.1

Survey Depth	Azimuth	Dp	Hole Co-ordinates (AMG)	
			Easting_	513 024
			Northing_	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

SHEET 23 OF 25

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES	PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG
					STRUC	ALT			
PREFIX	1	3	1	3	5	0.06	mm		
441								440.90-443.01: COARSE TO VERY COARSE-GRAINED LITHIC SANDSTONE WITH ABUNDANT, ROUNDED QUARTZ CLASTS (UP TO APPROXIMATELY 2mm IN SIZE)	MS
442									SS
443								443.04-447.80: MUDSTONE	
444									
445									MS
446									
447									
448								448.80-455.80: GRADING FROM FINE TO MEDIUM-GRAINED, QUARTZ-RICH SANDSTONE	
449									
450									
451									
452									SS
453									
454									
455									
456								455.80-460.20: INTERBEDDED MUDSTONE AND QUARTZ SANDSTONE	
457									
458									MS
459									
460									
REMARKS									

MIDLANDS ENERGY

DRILL HOLE No M.V. 1

Survey Depth	Azimuth	Dip	Hole Co-ordinates (AMG)	
			Easting	513 024
			Northing	5 296 375
			Elevation (m)	222
			Azimuth_Mag	-
			Dip	-90°

SHEET 24 OF 25

PROJECT:	
PROSPECT:	MOUNT VERNON
DATE:	
LOGGED BY:	KAREN ADAMS

HOLE DEPTH	CORE RECOVERY	ROD	SAMPLE NO	SULPHIDES	PICTORIAL LOG		GRAPHIC LOG	GEOLOGY NOTES	SUMMARY LOG
					STRUCT	ALT			
461								460.20-462.60: MUDSTONE INTERBEDDED WITH MINOR SANDSTONE	MS
462									
463								462.60-472.90: INTERBEDDED MUDSTONE AND SANDSTONE WITH CROSS-BEDDING AND BUR-UP CLASTS PROMINANT	
464									
465									
466									
467									MS
468									SS
469									
470									
471									
472									
473								473.00-479.60: QUARTZ-RICH, MEDIUM-GRAINED SANDSTONE WITH FLAKER BEDDING	
474									
475									
476									SS
477									
478									
479									
480								479.60-482.15: MUDSTONE AND MINOR SANDSTONE	MS
REMARKS									

Drill log

Drill Hole ID: Mount Vernon Borehole 1

Project: Department of Mines Drilling

License: EL 26/2008 (Current)

Date Drilled:

Collar: Easting:
Northing:
Elevation:

(GDA - GPS)

Azimuth: n/a

Dip: -90 degrees

mFrom	mTo	Description
0	12	Oxidised, weathered and broken sandstone with minor mudstone. Some core loss near 11.45m
12	17.1	Grey to pale grey, medium to fine-grained lithic sandstone
17.1	19.5	grey to dark grey mudstone
19.5	20.5	Black carbonaceous mudstone
20.5	23.3	Grey to dark grey mudstone with minor carbonaceous mudstone
23.3	59.95	Pale grey to grey medium to coarse-grained lithic sandstone. Vitrinite clasts also present between 31 and 35m and flacer bands. Conglomeratic zones of mudstone clast of up to 10cm between 38.4-39.2m. Mudstone and vitrinite clasts along with flacer banding from 50m. Increasing carbonaceous mudstone downhole
59.95	60.7	carbonaceous mudstone and coal
60.7	67	Grey mudstone. 1m core loss from 62-63m
67	69.1	Grey to cream, fine to medium-grained lithic sandstone
69.1	71.25	Mudstone and minor sandstone
71.25	81.3	Medium to coarse-grained lithic sandstone with some vitrinite clasts
81.3	81.9	Conglomeratic base to lithic sandstone unit. Rounded to sub-rounded, mudstone and minor carbonaceous mudstone clasts up to 4cm across
81.9	82.9	Mudstone
82.9	121.6	Lithic sandstone with conglomeratic zones from 93.9-96.2m, 107-107.4m and 114.4-115.4m. Minor flacer banding.
121.6	125.3	Mudstone and carbonaceous mudstone
125.3	134.35	Grading from interbedded mudstone and sandstone, to medium-grained lithic sandstone
134.35	137.7	Mudstone
137.7	138.35	Coal with some carbonaceous mudstone
138.35	140.2	Mudstone
140.2	140.6	Lithic sandstone with conglomeratic zones from 93.9-96.2m, 107-107.4m and 114.4-115.4m. Minor flacer banding.
140.6	140.9	Mudstone
140.9	159.2	Medium-grained lithic sandstone
159.2	159.6	Coal with some carbonaceous mudstone
159.6	161.5	Mudstone
161.5	171.4	Medium to coarse-grained lithic sandstone
171.4	172	Coarse-grained lithic sandstone supported, rounded mudstone clasts up to 3cm in size
172	181.7	Medium to coarse-grained lithic sandstone with some conglomeratic clasts uphole and mudstone at 178m

181.7	181.8	Carbonaceous mudstone
181.8	204.3	Medium to coarse-grained lithic sandstone with mudstone and minor vitrinite clasts of up to 3cm from 195m
204.3	204.75	Mudstone with some carbonaceous mudstone
204.75	207.15	Coal (sampled). Left overs appear to be carbonaceous mudstone and coal with some vitrinite present
207.15	212.7	Mudstone with cross bedded sandstone and mudstone in lower 70cm
212.7	216.5	Medium-grained lithic sandstone
216.5	217.1	Mudstone
217.1	217.5	Sandstone with mudstone and vitrinite clasts at around 217.2m
217.5	217.9	Mudstone
217.9	234.25	Fine to medium-grained lithic to sub lithic, quartz-rich sandstone with large (up to 10cm) mudstone clasts uphole and flaser banding downhole
234.25	234.7	Carbonaceous mudstone and coal
234.7	245.85	Mudstone with increasing quartz-rich sandstone downhole
245.85	248.8	Quartz-rich, sub-lithic sandstone
248.8	249	Mudstone and carbonaceous mudstone with minor coal
249	252	Mudstone
252	253.4	Coal and carbonaceous mudstone
253.4	265.4	Mudstone with minor carbonaceous mudstone increasing downhole
265.4	267.3	Fine-grained quartz-rich (sub-lithic) sandstone and minor mudstone
267.3	267.8	Mudstone
267.8	269.4	Mudstone and carbonaceous mudstone with some coal
269.4	281.6	Interbedded mudstone and sandstone
281.6	282.9	Mudstone
282.9	283.6	Carbonaceous mudstone between 2 small coal seams
283.6	293.5	Dominantly mudstone with zonal quartz-rich sandstone
293.5	293.8	carbonaceous mudstone and coal
293.8	295.55	Mudstone and carbonaceous mudstone with minor sandstone downhole
295.55	295.8	Quartz sandstone
295.8	296.4	Coal and some carbonaceous mudstone and mudstone
296.4	299.05	Quartz-rich sandstone with flaser banding
299.05	302.05	Mudstone and carbonaceous mudstone with gradational downhole contact and increasing sandstone downhole
302.05	319.5	Grading from fine to medium-grained lithic to sub-lithic sandstone and some mudstone and occasional mudstone clasts
319.5	323.1	Quartz-rich sandstone with flaser banding
323.1	326.2	Quartz-rich sandstone grading to sub-lithic sandstone downhole with flaser banding
326.2	330	Sub-lithic to lithic, medium to coarse-grained sandstone and some flaser banding
330	332.2	Mudstone and carbonaceous mudstone
332.2	336.1	Quartz sandstone and flaser banding
336.1	337	Sub-lithic sandstone interbedded with mudstone
337	338	Core Loss
338	341.25	Interbedded mudstone and sandstone. Cross bedding present and sandstone increasing downhole
341.25	345.85	Sub-lithic, quartz (and feldspar?) rich sandstone
345.85	350.1	Interbedded and cross-bedded mudstone and fine-grained sandstone
350.1	355	Mudstone and minor very fine grained sandstone. Fault at 353.2m
355	370.3	Interbedded mudstone and fine to medium-grained sandstone (zonally conglomeratic). Sandstone increasing downhole
370.3	402.6	Interbedded mudstone and medium to coarse-grained sandstone

402.6	404.4	Pale, quartz-rich, sub-lithic sandstone
404.4	422.5	Mudstone with faults at 420.1 and 420.6m
422.5	424.2	Interbedded sandstone and mudstone
424.2	426.6	Mudstone with cross-bedding and very minor sandstone
426.6	435.1	Medium to coarse-grained lithic, quartz-rich sandstone and very minor mudstone
435.1	440.9	Mudstone and minor sandstone
440.9	443.04	Coarse to ery coarse-grained lithic sandstone with abundant, rounded quartz clasts (up to approximately 2mm in size)
443.04	447.8	Mudstone
447.8	455.8	Grading from fine to medium-grained, quartz-rich sandstone
455.8	460.2	Interbedded mudstone and quartz sandstone
460.2	462.6	Mudstone interbedded with minor sandstone
462.6	472.9	Interbedded mudstone and sandstone with cross-bedding and rip-up clasts prominent
472.9	479.6	Quartz-rich, medium-grained sandstone with flacer banding
479.6	482.15	Mudstone and minor sandstone
482.15	492.8	Quartz-rich sandstone with flacer banding
492.8	496.19	Mudstone with minor quartz sandstone beds at 494 and 495m
	EOH	