

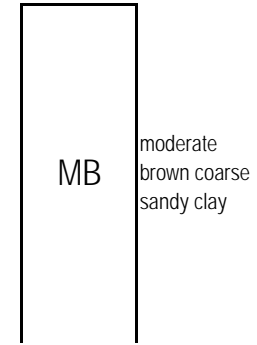


AI98/1 - 'Main Pit', Alcoota Scientific Reserve - 7 August, 1998 - field observations by I. Archibald

Depth below natural surface (m)	R.L. (datum: Alcoota t.b.m.)	Sample	Field observations	Time (24 hr clock)	Drilling time (min.)	Cumulative drilling time (min.)	average drilling rate over 0.5 m (m/10min.)	Lithology of samples	Interpretive remarks	Summary log
0.0	-0.616		natural surface	7:25						
0.5	-1.1	(TS 0621) +		7:26	1	1	5.0	TS 0621 contains cuttings of greyish brown (5YR 3/2) loamy soil, angular clasts of white to light bluish grey (N9 - 5B 7/1) chalcedony, clasts of moderate reddish orange (10R 6/6) fine to coarse sparite (caliche), and phosphatic bone fragments.	Greyish brown soil / colluvium, with calcrete zones	<div style="border: 1px solid black; padding: 5px; text-align: center;">GB</div> greyish brown loamy soil and colluvium
1.0	-1.6	+		7:40	14	15	0.4			
1.5	-2.1	+	stop - flight added	7:42	2	17	1.7	"		
			drilling recommence	7:46						
1.8			motor bracket broken - weld same	7:48	2	19				
			drilling recommence	8:07						
2.0	-2.6	+		8:10	3	22	1.0	"		
2.5	-3.1	+		8:15	5	27		"		
2.8	-3.4		machine working much harder (rock pieces)	8:17	2	29			contact	
3.0	-3.6	+		8:19	3	32	0.5	<u>first appearance</u> yellowish grey (5Y 7/2) & moderate yellowish brown (10YR 5/4) sandy clay:	moderate reddish brown colour appears to be due to disseminated iron oxides, probably representing mottled profile due to <i>in situ</i> weathering	
								<u>first appearance</u> moderate reddish brown (10R 4/6) sandy clay		
3.3			stop - flight added	8:22						
			drilling recommence	8:25						
3.5	-4.1	+	machine labouring - traces of moisture	8:28	3	35	1.7	as above		
4.0	-4.6	+		8:33	5	40	1.0	as above		
4.2	-4.8		red clay traces	8:34	1	41				
4.5	-5.1	+		8:36	2	43	1.7	as above		

4.8	-5.4		drill labouring - lower gear engaged	8:43	7	50			contact
4.9			stop - flight added (moist clay sticking to auger - not clearing hole)	8:47	4	54			
5.0	-5.6	+		8:50	3	57	0.4	<u>first appearance</u> moderate brown (5YR 4/4) & moderate yellowish brown (10YR 5/4) coarse sandy clay	
5.5	-6.1	+	sample very moist, clogging flights	9:00	10	67	0.5	as above	
5.6	-6.2		drilling abandoned, due to failure of generator bearing	9:04	4	71			

71



AI98/2 - Fenceline E. of Main Pit, Alcoota Scientific Reserve - 8 August, 1998 - field observations by I. Archibald

Depth below natural surface (m)	R.L. (datum: Alcoota t.b.m.)	Sample	Field observations	Time (24 hr clock)	Drilling time (min.)	Cumulative drilling time (min.)	average drilling rate over 0.5 m (m/10min.)	Lithology of samples	Interpretive remarks	Summary log
0.0	-1.332		natural surface	10:14						GB greyish brown loamy soil
0.5	-1.8	+	stop for re-fueling	10:15	1	1	5.0	greyish brown (5YR 3/2) to moderate brown (5YR 4/4) loamy soil		
			drilling re-commence	10:20						
1.0	-2.3	+		10:22	2	3	2.5	"		YG yellowish grey medium sandy clay
1.4			stop - flight added	10:23	1	4				
			drilling recommence	10:25						DY dusky yellow sandy clay
1.5	-2.8	(TS 0622) +		10:26	1	5	2.5	TS 0622 contains cuttings of greyish brown (5YR 3/2) and moderate brown (5YR 4/4) loamy soil: lighter (moderate brown) cuttings and zones contain micritic carbonate	modern soil profile containing patches of micritic carbonate of pedogenic origin (incipient calichification of profile)	
2.0	-3.3	+		10:28	2	7	2.5	<u>first appearance</u> cuttings of yellowish grey (5Y 7/2) and moderate brown (5YR 4/4) sandy clay, colour varieties apparently interlaminated in some cuttings	contact	
2.4	-3.7		drill labouring - plus moisture	10:30						
2.5	-3.8			10:31	3	10	1.7	as above, <u>plus first appearance</u> cuttings of massive dusky yellow (5Y 6/4) sandy clay	dusky yellow material possibly represents a lens/interbed (<0.5m thick)	

3.0	-4.3	+		10:33	2	12	2.5	as above, <i>plus</i> some cuttings and zones of moderate reddish brown (10R 4/6) sandy clay	TS 0623 from 3.5m indicates reddish brown colour is due to disseminated iron oxides: probably representing mottled profile due to <i>in situ</i> weathering	YG	yellowish grey sandy clay
3.2			stop - flight added	10:34							
			drilling recommence	10:36	2	14					
3.5	-4.8	+	green 'clay' encountered	10:37	1	15	1.7	as above: TS 0623 contains cuttings of texturally similar sandy clays of the various hues identified above, showing: patchy dissemination of iron oxides; 20-30% silt to coarse sand grade, angular to rounded quartz plus minor feldspar, opaque mineral grains, and lithic quartz: some quartz grains show evidence of etching.	etched quartz grains and ferruginisation probably due to <i>in situ</i> weathering (pedogenesis)		
			(TS 0623)								
4.0	-5.3	+		10:40	3	18	1.7	as above		DYB	dark yellowish brown coarse sandy clay
4.5	-5.8	+		10:44	4	22	1.3	<u>first appearance</u> cuttings of dark yellowish brown (10YR 4/2), coarse sandy clay	contact coincides with decrease in drilling rate		
5.0	-6.3	+	stop - flight added	10:49	5	27	1.0	"	"		
			drilling restart	10:50							
5.5	-6.8			10:53	3	30	1.7	<u>first appearance</u> dusky yellow (5Y 6/4) sandy clay	dusky yellow material possibly represents a lens (<0.5m thick): coincides with increased drilling rate	DY	dusky yellow sandy clay
6.0	-7.3			10:57	7	37	0.7	TS 0624 contains cuttings of dark yellowish brown (10YR 5/4) and dusky yellow (10YR 4/2) sandy clay <u>from above</u> , as well as <u>first appearance</u> moderate yellowish brown (10YR 5/4) silty to medium sandy clay, ~2-10% silt to medium sand grade, angular to rounded quartz plus minor opaque mineral grains and lithic quartz. Ferruginous cutans (peds) are present in some cuttings	this bed differs from the ones above primarily in finer texture: compositionally they appear to be very similar.	MYB	moderate yellowish brown silty clay
			(TS 0624)								
6.5	-7.8	+		11:02	5	42	1.0	moderate yellowish brown (10YR 5/4) silty clay			
6.8			stop - flight added	11:04	2	44					
			drilling restart	11:08	4	48					
7.0	-8.3	+		11:09	1	49	0.7	"	"		
7.5	-8.8	+	clay sticking to auger - hard going	11:13	4	53	1.3	"	"		
8.0	-9.3	+		11:18	5	58	1.0	"	"		
8.5	-9.8	+	drilling ceased	5:02	3	61	1.7	"	"		
					<u>3</u>						

AI98/3 - Gully between demountable and Hill 2, Alcoota Scientific Reserve - 27 and 28 June, 1998 - logged by D. Megirian

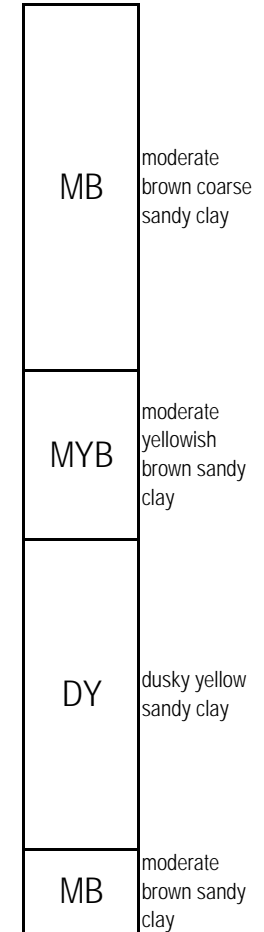
Depth below natural surface (m)	R.L. (datum: Alcoota t.b.m.)	Sample	Field observations	Time (24 hr clock)	Drilling time (min.)	Cumulative drilling time (min.)	average drilling rate over 0.5 m (m/10min.)	Lithology of samples	Interpretive remarks	Summary log
0.0	-2.812		natural surface (27 June, 1998)	16:33						GB greyish brown loamy soil
0.5	-3.3	+	red brown sandy soil, some clayey pellets	16:35	2	2	2.5	Greyish brown (5YR 3/2) loamy soil and clasts of chalcedony		
0.8	-3.6		stop - great resistance to drilling, pinkish sand (?ground up calcrete) - 'trident' bit replaced with 'cone' bit drilling restart	17:00	25	27				
1.0	-3.8	+	greenish brown sand	17:05 17:10	5	32	0.2	Greyish brown (5YR 3/2) loamy soil with some pale brown (5YR 5/2) cuttings	pale cuttings probably represent zones of pedogenic carbonate contact	YG yellowish grey sandy clay
1.5	-4.3	+	greenish brown silty sand, some clayey pellets	17:30	20	52	0.3	<u>First appearance</u> yellowish grey (5Y 7/2), pale brown (5YR 5/2) and moderate reddish brown (10R 4/6) sandy clay		
1.7			marked increase in claystone pellets	17:33	3	55				
2.0	-4.8	+	green clay - marked increase in drilling rate	17:37	4	59	0.7	As above		LB light brown silty clay
2.5	-5.3	+	green clay / ?claystone	17:44	7	66	0.7	As above, <u>plus first appearance</u> light brown (5YR 5/6) silty clay	light brown material possibly represents a lens/interbed (<0.5m thick)	

3.0	-5.8	TS (0625)*	green clay, plastic, some ferruginous mottles	17:52	8	74	0.6	TS 0625 contains cuttings of yellowish grey (5Y 7/2), pale brown (5YR 5/2) and moderate reddish brown sandy clay. The colour variation appears to be due to variable dissemination of iron oxides. Texturally, the different cuttings are very similar, containing 20-30% silt to coarse sand grade, angular to rounded quartz plus minor opaque mineral grains, and lithic quartz.	reddish hues appear to be due to disseminated iron oxides: probably representing a mottled profile due to <i>in situ</i> weathering	YG	yellowish grey sandy clay
3.2			stop - flight added drilling restart	17:56 18:00	4	78					
3.4	-6.2		first appearance of red clay					<u>First appearance</u> moderate brown (5YR 3/4) sandy clay (3.5m sample)	contact	MB	moderate brown sandy clay
3.5	-6.3	+	dark red-brown clay	18:07	7	85	0.5				
3.7	-6.5		stop - refuel - green clay amongst red drilling restart, 28 June 1998	18:10 8:00	3	88					
4.0	-6.8	+	mottled red and green clay	8:08	8	96	0.5	As above		LB	light brown silty clay
4.5	-7.3	+	red silty clay w. green clay inclusions	8:19	9	105	0.6	As above, <i>plus</i> <u>first appearance</u> light brown (5YR 5/6) silty clay	light brown material possibly represents a lens/interbed (<0.5m thick)		
5.0	-7.8	+	stop - flight added -	8:34	15	120	0.3	Moderate brown (5YR 7/2) sandy clay, <i>plus</i> <u>first appearance</u> yellowish grey (5Y 7/2) sandy clay	?contact - see below	MB	moderate brown sandy clay
5.1	-7.9	(TS 0626)*	drilling restart red silty clay w. green clay inclusions - drilling abandoned - stripped crown-wheel	8:37 8:45	8	128		TS 0625 contains mostly cuttings of moderate brown (5YR 7/2) sandy clay, with a few cuttings of texturally similar yellowish grey (5Y 7/2) sandy clay. The sandy clays contain 20-30% silt to coarse sand grade, angular to rounded quartz plus minor opaque mineral grains, and lithic quartz.	The yellowish grey sandy clay could represent the first cuttings of a new bed, or possibly unmottled zones within the moderate brown sandy clay unit.		

AI98/4 - between demountable and Hill 1 - close to toilet, Alcoota Scientific Reserve - 8 August, 1998 - field observations by I. Archibald

Depth below natural surface (m)	R.L. (datum: Alcoota t.b.m.)	Sample	Field observations	Time (24 hr clock)	Drilling time (min.)	Cumulative drilling time (min.)	average drilling rate over 0.5 m (m/10min.)	Petrography of samples	Interpretive remarks	Summary log
0.0	-1.545		natural surface	7:14						
0.5	-2.0	+	steam from hole - moisture	7:15	1	1	5.0	greyish brown (5YR 3/2) loamy soil, some moderate yellowish brown (10YR 5/4) cuttings	by comparison with other holes, yellowish brown cuttings probably contain pedogenic carbonate	GB greyish brown loamy soil
1.0	-2.5	+		7:17	2	3	2.5	as above		
1.2	-2.7		signs of green clay	7:20	3	6		As above, <i>plus</i> first appearance yellowish grey (5Y 7/2) and moderate yellowish brown (10YR 5/4)sandy clay	contact	YG yellowish grey sandy clay
1.3			stop - flight added drilling restart	5:02 7:24	1	7				
1.5	-3.0	+		7:26	2	9	0.8	as above		
2.0		+		7:29	3	12	1.7	as above		
2.5	-4.0	+	machine labouring	7:33	4	16	1.3			
2.7			driller advises harder substrate encountered	7:37	4	20				
3.0	-4.5	+		7:42	5	25	0.6	as above, <i>plus</i> some cuttings, zones of moderate brown (5YR 3/4) sandy clay	TS 0625 from 4.0m indicates moderate brown hues are due to disseminated iron oxides, probably representing a mottled profile due to <i>in situ</i> weathering. Local induration by iron oxides may account for reduction in drilling rate.	
3.1			stop - flight added drilling restart	7:45 8:02	3	28				
3.5		+		8:05	3	31	0.8	as above		
3.8	-5.3		substrate colour change to red	8:06	1	32				

4.0	-5.5	(TS 0627) *	drilling rate increase	8:07	1	33	2.5	TS 0627 contains cuttings of yellowish grey (5Y 7/2) to moderate yellowish brown (10YR 5/4) sandy clay <u>from above</u> , and <u>first appearance</u> moderate brown (5YR 3/4) coarse sandy clay. The colour variation in the upper unit appears to be due to variable dissemination of iron oxides. The upper unit contains 20-30% silt to coarse sand grade, angular to rounded quartz plus minor opaque mineral grains, and lithic quartz. The moderate brown unit has similar mineralogy but contains up to 40% sand, up to very coarse grade.	contact
4.3	-5.8		cuttings very moist - (?clay)	8:12	5	38			
4.5	-6.0	+		8:15	3	41	0.6	<u>first appearance</u> moderate yellowish brown (10YR 5/4) and moderate brown (5YR 4/4) sandy clay	contact
4.9			stop - flight added	8:22	7	48			
			drilling restart	8:24	2	50			
5.0	-6.5	+	rig struggling - clay binding	8:26	2	52	0.5	<u>first appearance</u> dusky yellow (5Y 6/4) and light brown (5YR 6/4) sandy clay	contact
5.5	-7.0	+		8:32	6	58	0.8	as above	
6.0	-7.5	(TS 0628) *		8:35	3	61	1.7	TS 0628 contains cuttings of dusky yellow (5Y 6/4) and light brown (5YR 6/4) sandy clay. The colour variation appears to be due to variable dissemination of iron oxides. The lithology contains ~25% silt to coarse sand grade, sub-angular to sub-rounded quartz with minor feldspar and opaque minerals.	
6.5	-8.0	+	hydraulic oil overheated	8:43	8	69	0.6	as above, <i>plus</i> <u>first appearance</u> moderate brown (5YR 3/4) sandy (~10-15%) clay	contact
6.7	-8.2	+	drilling abandoned	8:45	2	71		as above	
					<u>2</u>				
					<u>71</u>				



AI98/5 - between demountable and Hill 1 - close to hill, Alcoota Scientific Reserve - 8 August, 1998 - field observations by I. Archibald

Depth below natural surface (m)	R.L. (datum: Alcoota t.b.m.)	Sample	Field observations	Time (24 hr clock)	Drilling time (min.)	Cumulative drilling time (min.)	average drilling rate over 0.5 m (m/10min.)	Petrography of samples	Interpretive remarks	Summary log
0.0	-1.669		natural surface	9:10				greyish brown (5YR 3/2) loamy soil, some moderate yellowish brown (10YR 5/4) cuttings	by comparison with other holes, yellowish brown cuttings probably contain pedogenic carbonate	GB greyish brown loamy soil
0.5	-2.2	+		9:12	2	2	2.5			
1.0	-2.7	+		9:14	2	4	2.5	as above		
1.3			stop - flight added drilling restart	9:16 9:18	2	6				
1.5	-3.2	+		9:19	1	7	1.7	as above		
2.0	-3.7	+		9:20	1	8	5.0	<u>first appearance</u> yellowish grey (5YR 7/2) and light brown (5YR 6/4) sandy clay	contact	YG yellowish grey sandy clay
2.5	-4.2	(TS 0629) *	sample getting moist	9:22	2	10	2.5	as above		
2.8	-4.5	+	colour change to green	9:25	3	13				
3.0		+		9:26	1	14	1.3	as above		
3.2			stop - flight added drilling restart	9:28 9:30	2	16				
3.5	-5.2	+		9:32	2	18	1.3	as above		
4.0	-5.7	+		9:35	3	21	1.7	as above		
4.5	-6.2	+		9:36	1	22	5.0	as above		

5.0	-6.7	+	stop - flight added drilling restart	9:38 9:40	2 2	24 26	2.5	<u>first appearance</u> moderate brown (5YR 3/4) sandy clay	contact	MB	moderate brown sandy clay
5.4	-7.1		getting harder to drill	9:43	3	29			dusky yellow sandy clay (5.5m sample) possibly represents a lens/interbed (<0.5m thick)	DY	dusky yellow sandy clay
5.5	-7.2	+		9:44	1	30	0.8	as above <i>plus</i> first appearance dusky yellow (5Y 6/4) and light brown (5YR 6/4) sandy clay moderate brown (5YR 3/4) sandy clay		MB	moderate brown sandy clay
6.0	-7.7	(TS 0630) +	still getting lumps of green	9:49	5	35	1.0				
6.5	-8.2	+		9:53	4	39	1.3	as above			
6.8	-8.5	+	drilling stopped	9:55	2	41		as above			
					<u>41</u>						