Table B1: Catchment A - site and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl (approximate)	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Steep hill	245m	Track	100x0.2m	60%		Trampled	Thin A unit, clay not visible
			Gully AA	235m	Drain	100x2m	80%		Dug out	Mixed A unit and clay.
A1	29341 64 2919	4	Gully AA	235m	Drain	8x3m	90%	On clay below A unit	Cut away by drain to dam	Buff A unit 5cm thick on gravelly clay
A2	29342 64 2917	7	Gully AA	235m	Dam	30x10m	80%	On dam wall	Dug out	Mixed A unit & gravelly clay
Assoc. A2			Gully AA	235m	Dam	50x15m	80%		"	" " " "
A3	29348 64 2913	5	Gully AA	230m	Gully erosion	2x2m	60%	Remnant A & clay below	Eroded; some possibly intact	Thin A unit <10cm over orange-red clay.
Assoc. A3			Gully AA	230m	Gully erosion	100x1-3m	20-50%		" "	" "
			Gully AA	230m	Gully erosion	150x2-4m	20-40%		" "	
A4	29353 64 2914	25	Gully AA	225m	Gully erosion	20x2-20m	0-100%	On deflated A. Axe on grass	Some intact ?, ants nest	Thin A unit <10cm over orange friable clay.
A5	29353 64 2929	3	Hillslope	235m	Drain	50x2m	60-80%	On cutting at edge of drain	Ploughed, dug away	Mixed gravelly clay
A5		1	Hillslope	235m	Grassy area	10x10m	20-50%	Amongst grass	Ploughed	Mixed gravelly clay
A6	29365 64 2905	1	Gully AA	225m	Gully erosion	100x2m	40-80%	On clay below A unit	Very eroded, trampled	Buff A unit <10cm thick on clay. Heavily disturbed
Assoc. A6			Gully AA	220m	Dam	100x15m	40%		Mixed, track	Mixed A unit & clay
Before A7			Gully AA	215m	Gully erosion	100x2m	20-50%		Eroded	Thin A unit on clay.
A7	29380 64 2899	3	Gully AA	210m	Gully & sheet erosion	50x10m	70%	On grass	Eroded	Thin A unit <10cm thick on clay. Bedrock soil.
A8	29390 64 2895	9	Gully AA	205m	Gully erosion	100x1	80%	On A unit & clay below	Some erosion, ploughed behind	Buff A unit 20cm thick on clay; appears intact on edge of erosion.
			Gully AA	205m	Gully erosion	100x1-2m	80%		"	" "
A9	29396 64 2918	1	Hillslope	220m	Grass	50x2m	5%	Amongst grass	Ploughed, trampled	Buff A unit.
			Hillslope	220m	Dam	50x1m	50%		Dug out	Mixed brown clay
			Hillslope	210-235m	Track	750x2-3m	70%		Ploughed	A unit & clay
A10	29400 64 2942	8	Gully	220m	Gully erosion	80x5m	80%	On clay below A unit	Ploughed behind expos.	Aunit c.30* cm thick, over orange clay.
		1	Gully	220m	Gully erosion	10x1-3m	60-90%	"	"	A unit c.10-20cm thick, over clay.
			Gully	220-225m	Gully erosion	40x5m	20-60%		Ploughed	Mixed A unit & clay
A11	29385 64 2960	1	Gully	230m	Sheet erosion	30x10m	20-40%	Redeposited silt	Ploughed, trampled	Mixed pebbly silt.
Assoc. A11			Gully	230m	Dam	100x2m	70%		Dug out	Mixed pebbly clay
A12	29370 64 2958	1	Gully	235m	Sheet erosion	100x15m	60%	On clay	Ploughed, tramped	Mixed pebbly clay
A13	29358 64 2966	1	Hillslope	245m	Grassy area	30x20m	20-60%	On grass	Ploughed	No A unit; gravelly clay only
A14	29350 64 2975	2	Gully	250m	Gully erosion	100x3-4m	60-100%	On eroded A unit	Eroded	A unit <10cm on clay
Assoc. A14			Gully	250m	Dam	90x3m	60-100%		Dug out	Mixed
			Gully	245-260m	Sheet erosion	200x50m	20-60%		Ploughed	Eroded gravelly clay
			Hillslope	265-270m	Sheet erosion	100x50m	20%		Timbered	Grey-brown silt
			Gully	260-265m	Gully erosion	200x2-3m	40-60%		Ploughed?	Eroded gravelly clay
A15	29367 64 3000	2	Gully	245m	Gully erosion	10x2m	80%	On eroded A unit	Ploughed?	A unit <10cm thick on clay.
Assoc. A15			Gully	245-260m	Gully erosion	200x2m	40-80%		Ploughed	"

Table B1: continued...

Location	Grid reference	No. of finds	Land unit	Height asl (approximate)	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
A16	^{2}9371 ^{64}3003	1	Gully confl.	250	Sheet	30x3m	80%	On redeposited A unit	"	Thin (c. <5cm) redeposited A unit on clay.
Assoc. A16			"	250	Sheet	50x10m	50%		"	"
A17	^{2}9375 ^{64}3010	1	Gully	250m	Sheet	20x20m	60%	On mixed soil	Ploughed	Mixed A unit & clay - bedrock soil
			Gully	250-260m	Gully	300x2m	20%		Trampled	Thin A unit on clay
			Hillslope	250m	Drain, gully	200x4m	20-60%		Dug out, eroded	Mixed gravelly clay
			Gully confl.	245m	Dam	100x10m	10-50%		Dug out	Mixed gravelly clay
			Gully confl.	240m	Gully erosion	200x20m	35%		Ploughed?	Mixed A unit on clay
A18	^{2}9385 ^{64}2993	1	Gully	240m	Gully erosion	15x6m	70%	In gully wash	Ploughed?	Mixed A unit on clay
A19	^{2}9399 ^{64}2981	1	Gully	230m	Sheet	30x10m	60%	On sheet wash	Ploughed?	Mixed A unit on clay
Associated A18,19			Gully	225-230m	Gully erosion	100x2m	20-50%		Ploughed?	Mixed A unit on clay
			Hillslope	215m	Ants nest	3x3m	90-100%		Ploughed	Silt covering surface
			Hillslope	215m	Ants nest	4x2.5m	80%		Ploughed	Unit A, sheet wash
			Gully	225m	Gully erosion	30x1-2m	20-40%		Ploughed	Brown
			Gully	225m	Gully erosion	50x1-4m	60-80%		Ploughed beyond	A unit 10-30cm on orange clay
A20	^{2}9420 ^{64}2962	1	Gully	220m	Gully erosion	20x1-3m	40-60%	On eroded clay	Much eroded	A unit 20cm thick on orange clay
A21	^{2}9422 ^{64}2960	2	Gully	220m	Gully erosion	20x2-3m	60%	On eroded clay	Much eroded	A unit 20-30cm thick on orange clay
Assoc. A21			Gully	220m	Gully erosion	30x1-5m	40-80%			
A22	^{2}9418 ^{64}2960	1	Gully	220m	Gully erosion	45x1-2m	50%	Lagged on clay	Ploughed beyond	A unit 30cm over clay
A23	^{2}9420 ^{64}2957	1	Gully	215m	Grass	1x1m	0%	On gully floor gully	Ploughed beyond	
A24	^{2}9420 ^{64}2952	1	Gully	215m	Cattle track	30x0.7m	80%	On track		A unit dusty
A25	^{2}9420 ^{64}2949	1	Gully	215m	Gully erosion	3x2m	70%	On A unit		A unit 20cm thick over clay
A26	^{2}9416 ^{64}2942	1	Gully	210m	Track	30x1m	70%	On track		Deflating A unit
Assoc. A26			Gully	210m	Gully erosion	30x2m	70%			
A27	^{2}9420 ^{64}2941	2	Gully	210m	Tracks	10x10m	0-90%	On A unit	Undisturbed	Dusty A unit, shallow exposure
Assoc. A27			Gully	210-215m	Tracks	90x1-20m	0-90%		near exposure?	Upper sandy A unit exposed
			Gully	210m	Gully erosion	40x2-4m	80%		Undisturbed	A unit 10-20cm thick on clay
A28	^{2}9423 ^{64}2938	4	Gully	210m	Contour drain	10x3m	70%	Lagged on clay	near exposure?	A unit over clay
Assoc. A28			Gully	210m	Contour drain	140x3m	70%			
			Hillslope	210-235m	Tracks	850x0.6m	20-80%		Mostly ploughed	Mostly mixed A unit & clay
			Hillslope	210-220m	Tracks	150x1m	60-80%			A unit 10-20cm on clay
			Gully	205m	Gully erosion	40x3m	20-60%			A unit over clay; alluvium
			Gully	205m	Contour drain	50x2m	30-80%			A unit exposed
			Gully	200m	Ants nest	3x2m	80%			A unit with some clay exposed
			Gully	205m	Gully erosion	30x1m	20-40%		Ploughed	Thin silty A unit on clay
			Gully	205m	Gully erosion	10x2m	20-40%		Ploughed	Thin silty A unit on clay
			Gully	200m	Ants nest	3x2m	90%			Silt
			Gully	200m	Gully	40x2-3m	60-90%			Remnant A unit <10cm on clay
			Gully	200m	Dam/drain	100x1-2m 100x2-3m	90% <20%			Mixed A unit and clay
			Gully	210m	Gully	25x5m	40%			A unit 10cm on clay

Table B1: continued...

Location	Grid reference	No. of finds	Land unit	Height asl (approximate)	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
A29	^{2}9409 ^{64}2937	3	Gully	210m	Ants nest	3x2m	60-80%	On silty clay		Mixed A unit and clay
			Gully	210m	Gully erosion	30x1-3m	60-80%			Remnant A unit on clay
			Gully	205m	Cattle track	130x0.5m	30%			Dusty A unit
			Gully	210m	Vehicle track	50x1-2m	20-100%			Dusty A unit
			Hillslope	210m	Vehicle track	150x1-2m	20-100%			Dusty A unit
A30	^{2}9400 ^{64}2911	1	Hillslope	210m	Ants nest	5x2.5m	80%	Lagged		A unit washed
A31	^{2}9400 ^{64}2910	2	Hillslope	210m	Around shed	50x1-3m	20-100%	On soil at tank		Mixed A unit and clay
			Hillslope	215m	Sheet erosion	5x5m	40%			Remnant A unit <10cm on clay
			Hillslope	215m	Sheet erosion	10x3m	20-60%			A unit
			Hillslope	215m	Cattle track	40x1m	40%			A unit only
A32	^{2}9405 ^{64}2910	1	Hillslope	205m	Sheet erosion	10x5m	40-60%			Mixed A unit and clay
			Hillslope	205m	Ants nest	3x2m	20-80%			Mixed A unit and clay
A33	^{2}9404 ^{64}2907	60	Hillslope	205m	Vehicle track	20x3m	80-90%	On track surface	Ploughed	Mostly A unit; some clay exposed
A34	^{2}9403 ^{64}2903	19	Hillslope	205m	Vehicle track	12x2m	90-100%	On track surface & spoil	Ploughed	A unit only
Assoc. A33-A34			Hillslope	205m	Vehicle track	130x3m	80-100%			A unit; dusty towards north
			Hillslope	205m	Grassy area	50x5m	0-30%		Ploughed	Mixed A unit and clay
			Gully	205m	Vehicle track	50x3m	80-100%			
			Gully	205m	Gully erosion	60x5-6m	30-80%		Ploughed	Friable red-brown clay

Table B2: Catchment B - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
B1	2 9470 64 2920	1	Hillslope	205m	Track	10x3m	90%	On track	Track, ploughed	Grey/buff A unit
B2	2 9480 64 2954	1	Hillslope	205m	Track	10x3m	90%	On track	Track, ploughed	Brey/buff A unit
Assoc. exp.			Hillslope	200-235	Track	1190x3m	70-90%		"	"
Assoc. exp.			Gully	210-215	Track	400x3m	80-90%		"	"
B3	2 9481 64 3000	1	Gully confl.	210m	Track	10x3m	90-100%	On track	Track, trampled	Buff silt
B4	2 9486 64 3005	2	Gully confl.	205m	Dam	60x5m	80-90%	On dam wall	Dug out	Mixed silt & clay
B5	2 9480 64 3005	2	Gully confl.	210m	Track/yards	10x5m	90-100%	On track	Track	Silt, dusty
B6	2 9438 64 3043	2	Hillslope	230m	Track	30x2m	70-80%	On track	Track	Orange clay
B7	2 9440 64 3027	3	Gully	225m	Gully erosion	1x1m	80-90%	On high bank	Trampled	Buff disturbed A unit on clay
B8	2 9425 64 3050	1	Gully	230m	Track	6x3m	70-80%	On slope of gully	Trampled	Eroded orange clay
B9	2 9420 64 3055	1	Gully	230m	Gully erosion	10x3m	90%	On eroded clay	Eroded	Eroded orange clay
B10	2 9430 64 3050	1	Gully	225m	Gully erosion	10x1-2m	70-80%	On gully wall	Eroded	Buff A unit on clay
Assoc. exp.			Gully	210-230m	Gully erosion	750x1-3m	50-90%		Eroded & trampled	Generally thin to absent A unit on clay.
Ass. B11,13,14			Gully	240-255m	Gully erosion	610x2-10m	20-80%			
B11	2 9405 64 3055	1	Gully	240	Gully erosion	3x2m	40-50%	On erosion	Eroded	Buff A unit on clay
B12	2 9390 64 3050	1	Gully	255m	Track	400x3m	40-50%	On surface	Track	Thin A unit & clay
B13	2 9385 64 3055	1	Gully	250m	Dam	80x6m	100%	On dam wall	Dug out	Mixed
B14 }	2 9378 64 3056	1	Gully	255m	Track	10x10m	20%	On surface	Trampled	Thin A unit & clay
B14 }		1	Gully	255m	Gully erosion	10x10m	40%	On gully slope	Eroded	Orange clay
Assoc. B12			Gully	235-255m	Track	400x3m	40-50%		Trampled	Thin A unit & clay
			Gully	265-270m	Gully erosion	120x1-2m	20%		Eroded	Thin A unit & clay
			Gully	265-275m	Gully erosion	120x1-2m	20%		Eroded	Thin A unit & clay
B15	2 9412 64 3058	1	Gully	240m	Gully erosion	15x2m	30%	On clay	Eroded	Orange clay only
B16	2 9411 64 3070	2	Gully	245m	Gully erosion	10x3m	100%	1 embedded in A unit; 1 on clay	? reworked & redeposited	Brown silt on orange clay
B17	2 9399 64 3090	1	Gully	250m	Track	80x5m	100%	On surface	Trampled & dug out	Mixed
B18	2 9400 64 3095	1	Gully	250m	Dam	80x5m	100%	On wall	Dug out	Mixed
Assoc. B15-18			Gully	240-280m	Gully erosion	400x2-3m	20-40%		Eroded	Thin A unit on clay
B19	2 9395 64 3102	1	Gully	260m	Gully erosion	20x15m	30%		Eroded	Thin A unit on clay
Assoc. B19			Gully	260-285m	Gully erosion	360x2m	20-40%		Eroded	Thin A unit on clay
Assoc. B20			Gully	250-270m	Gully erosion	300x1m	20-30%		Eroded	Thin A unit on clay
B20	2 9413 64 3125	1	Gully	270m	Gully erosion	2x1m	20-30%	On eroded surface	Eroded	Thin A unit on clay
Assoc. B21,22			Gully	250-265m	Gully erosion	300x15m	40-50%		Eroded	Thin A unit on clay
B21 }	2 9448 64 3123	2 }	Gully	265m	Gully erosion	20x4m	40%	On surface }	Eroded; more buried finds?	Sandy clay slope wash
B21 }		2 }	Gully	265m	Gully erosion	9x6m	50%	}		A unit <15cm on clay
B22	2 9441 64 3089	8	Gully	250m	Gully erosion	40x15m	40%	On surface	Eroded	A unit thin to absent on clay
			Gully	260-265m	Gully erosion	120x5m	10-60%		Eroded banks <5m deep	A unit on clay
			Gully	250m	Dam	50x10m	20%		Dug out	Mixed A unit & clay
B23	2 9513 64 3102	5	Gully	245m	Track	5x0.2m	10%	On track	Trampled	Thin A unit on clay
Assoc. B23			Gully	245m	Track	300x0.2m	10%		"	" "
Assoc. B23			Gully	245m	Sheet	10x10m	50%		Eroded	A unit

Table B2 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Gully	245	Gully erosion	50x3m	20-50%			Not recorded
B24	2 9513 64 3097	1	Gully	240m	Gully erosion	20x3m	40%	In gully wash	Washed out	Mixed A unit & clay
B25	2 9516 64 3093	1	Gully	240m	Gully erosion	2x1m	50%	In gully wash	Washed out	Mixed A unit & clay
			Gully	250m	Dam	50x4m	40%			Mixed gravelly clay
			Gully	255-260	Gully erosion	150x5m	20%		Aggrading	Thick mixed A unit on clay
			Gully	245m	Gully erosion	70x3m	10-40%		Aggrading	Thick mixed A unit on clay
			Gully	240m	Gully erosion	100x3m	10-40%		Aggrading	Thick mixed A unit on clay
			Gully	240m	Gully erosion	120x3m	10-40%		Aggrading	15cm grey clay on red clay
Assoc. B26			Gully	235m	Gully erosion	120x3m	20%		Aggrading	Grey clay on red clay
B26	2 9517 64 3080	1	Gully	235m	Track	20x0.2m	90%	On track	Trampled	Eroding grey clay
			Gully	235m	Gully erosion	60x3m	15%			Mixed A unit & clay
			Gully	245m	Gully erosion	20x3m	20%			Thin A unit on clay
			Hillslope	250-255m	Track x2	100x0.2m (x2)	90%			Thin A unit on clay
B27	2 9549 64 3088	3	Hillslope	255m	Sheet	15x6m	100%	On clay		Red clay
B28	2 9552 64 3082	1	Hillslope	260m	Track	60x3m	80%	On clay		Red clay
			Hillslope	265m	Sheet	20x8m	80%			Red clay
			Hillsope	255m	Sheet	10x4m	70%			Not recorded
			Gully	230m	Gully erosion	150x3m	20%			Mixed A unit and clay
			Gully, Hills	230m	Track	150x3m	60%			Grey-brown clay on red clay
			Hillslope	235m	Sheet	10x4m	20%			Thin A unit on clay
			Gully	235m	Gully erosion	60x6m	20-30%		Gully 1m deep	Grey-brown A unit on clay
B29	2 9516 64 3047	46	Gully	220m	Gully erosion	10x4m	50-95%	In/on A unit	Partly intact; Ploughed beyond ?	A unit on clay
B30	2 9505 64 3035	1	Gully	220m	Gully erosion	1x1m	80%			Grey clay
B31	2 9498 64 3019	1	Gully	215m	Gully erosion	11x0.4m	40%			Grey clay
			Hillslope	215m	Track	130x3m	20-30%			Orange clay
B32 }	2 9495 64 2986	8	Gully	205m	Gully erosion	15x2m	30-40%	On side wall of gully		Grey A unit on clay
B32 }		1	Gully	205m	Gully erosion	15x4m	70%			
			Gully	205m	Track	50x3m	<20%			Grey
			Gully	205m	Gully erosion	60x3m	10-20%		Gully 3m deep	Grey A unit on clay
B33	2 9495 64 2949	2	Gully	195m	Gully erosion	150x3m	20%	Lag deposit		Grey A unit 10cm thick on clay
			Gully	195m	Gully erosion	15x3m	60%			Thin grey A unit on clay
Assoc. B34			Gully	195m	Gully erosion	280x3m	10-15%			Friable clay
B34	2 9507 64 2950	1	Gully	195m	Gully erosion	6x3m	10-15%			Friable clay
B35	2 9510 64 2948	1	Gully	195m	Gully erosion	3x2m	60%			Friable clay
B36	2 9496 64 2938	8	Gully	195m	Ants nest	10x3m	80%	On ants nest		A unit 20cm thick on clay
			Gully	190m	Dam/levee wall	15x8m	20%		Dug out	Mixed
B37	2 9506 64 2925	4	Gully	190m	Gully erosion	20x4m	40%	On erosion		Grey A unit on clay
			Gully	190m	Ants nest	1.5x1.5m	100%		? Ploughed	Mixed A unit & clay
B38	2 9500 64 2920	1	Gully	190m	Track	360x0.3m	80%	On track	? Ploughed	Grey A unit
B39	2 9507 64 2910	1	Gully	190m	Gully erosion	5x2m	20%	On erosion		Grey A unit 25cm on clay
			Hillslope	185-195m	Track	150x0.4m	60%		Trampled	Buff A unit; clay not exposed

Table B2 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Hillslope	195m	Sheet erosion	6x2m	30-60%			Buff A unit
			Hillslope	195m	Sheet erosion	1x1m	100%			Buff A unit
			Hillslope	195m	Ants nest	3x2m	80%			Buff A unit
B40	^{2}9548 ^{84}2888	1	Gully	215m	Gully erosion	10x1m	60-80%	Below A on clay		A unit 30cm thick on clay
Assoc. B40			Gully	205-215m	Gully erosion	320mx<1-2m	20-80%			A unit <20cm thick on clay
B41	^{2}9541 ^{84}2898	1	Hillslope	215m	Drain	100x3-4m	10-40%	On drain floor	Dug out	Gravelly clay
B42	^{2}9557 ^{84}2890	1	Gully	215m	Dam	50x2m	80%	On A unit	? Intact	A unit 30cm thick on clay
B43	^{2}9560 ^{84}2899	1	Gully	220m	Gully erosion	50x5m	70-80%	On A unit	? Intact	A unit 30cm thick on clay
B44	^{2}9553 ^{84}2878	1	Hillslope	215m	Drain	100x5m	30-40%	On drain floor	Dug out	A unit 10cm thick on clay
			Hillslope	220m	Drain	100x1-5m	20-30%		Dug out	A unit 10cm thick on clay
Same exposure			Gully	200m	Track	50x1-2m	20-80%			Buff A unit
			Hillslope	200-230m	Track	650x1-2m	20-80%			Buff A unit
			Ridge	230m	Track	50x1-2m	20-80%			Buff A unit
			Gully	220m	Track	50x1m	20-80%			Buff A unit
			Hillslope	220-230m	Track	350mx1m	20-80%			Buff A unit
			Ridge	235m	Track	250x1m	20-80%			Buff A unit
			Gully	220m	Track	50x2m	80-90%		Disturbed	Slopewash, Gravelly clay
			Hillslope	225-235m	Track	230x2m	80-90%		"	" " "
			Ridge	235m	Track	100x2m	80-90%		"	" " "
			Gully	220-240m	Gully erosion	450x2-4m	40%			Buff A unit on clay
			Gully	220m	Dam	50x3m	80%			Mixed clay
			Gully	230m	Dam	50x3m	40%			Mixed clay
			Gully	240-250m	Gully erosion	170x2-4m	30%			A unit 20cm thick on clay
			Gully	245-260m	Gully erosion	320x2m	30%			A unit 20cm thick on clay

Table B3: Confluence AB - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
AB1	2 9451 64 2897	1	Confluence	195m	Sheet	4x3m	50-80%	On silt	? Ploughed	Silt
AB2	2 9452 64 2901	6	Confluence	195m	Dam	100x2-4m	0-80%	On dam wall	Dug out	Mixed
			Confluence	190m	Cattle feed area	20x10m	90%		? Ploughed	Brown silt
AB3	2 9463 64 2882	4	Confluence	190m	Gully erosion	35x2m	80%	On erosion	Surface disturbance	A unit on clay
Assoc. AB3			Confluence	190m	Gully erosion	100x2m	0-80%			" "
			Confluence	190m	Gully erosion	40x3m	70%			A unit on clay
AB4	2 9475 64 2885	1	Confluence	185m	Track	5x3m	90%	On track	Displaced	Grey silt
Assoc. AB4			Confluence	185-195m	Track	350x3m	90%			Grey silt
AB5	2 9480 64 2886	1	Confluence	185m	Grassy bank	10x3m	20%	Amongst grass		Grey silt
AB6	2 9482 64 2892	1	Confluence	185m	Dam	50x5m	20%	On dam wall	Dug out	Mixed
AB7	2 9495 64 2905	3	Confluence	190m	Gully erosion	8x8m	30%	On track & grass	? Ploughed	A unit 25cm thick on clay
AB8	2 9493 64 2880	1	Confluence	185m	Trough	5x2m	80%	On A unit	Trampled	Loose A unit

Table B4: Catchment C - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Hillslope	245-265m	Track	170x2m	80%			Clay only
			Hillslope	190-200m	Track	210x1m	30-90%			Buff A unit on clay
			Hillslope	220-230m	Track	350x2m	80%			Exposed clay only
			Gully	205-215m	Gully	450x3m	0-80%		? Intact adjacent Erosion <4m deep	A unit <30cm on orange clay
			Hillslope	215-225m	Track	350x0.5m	60-70%			Grey A unit; clay not exposed
			Hillslope	210m	Track	50x0.5m	20-100%			Grey A unit; clay not exposed
			Gully	205m	Sheet	10x5m	90%			Grey A unit; clay not exposed
			Gully	185-200m	Gully erosion	500x2m	40-90%			Remnant-absent A unit on clay
			Gully	185-200m	Gully erosion	450x1-3m	0-70%			Remnant-absent A unit on clay
Same exposure			Hillslope	230-245m	Track	650x0.5-2m	20-80%			Loose dusty silt with a little sand
			Ridge	230m	Track	100x0.5-2m	20-80%			
			Gully	190-200m	Gully erosion	70x1m	20-80%			A unit <10cm on gravelly clay
			Gully	185m	Gully erosion	10x1m	80%			A unit <10cm on gravelly clay
			Gully	185m	Gully erosion	40x1m	20-40%			A unit <10cm on gravelly clay
Assoc. C1			Gully	170m	Gully erosion	60x1-2m	60-80%			
C1	^{2}9704 ^{64}2919	13	Gully	170m	Gully erosion	18x2m	100%	Some artefacts *in situ* in A unit	Some intact; transmission line	A unit 10-20cm thick on clay
			Gully	170m	Gully erosion	100x1-2m	80%			Remnant A unit on gravelly clay
C2, C3	^{2}9683 ^{64}2928 ^{2}9680 ^{64}2932	2	Gully	175m	Gully erosion	220x2m	50-90%	On gravelly clay		A unit 10-20cm thick on clay
C4	^{2}9679 ^{64}2938	1	Gully	175m	Gully erosion	100x1-2m	80-90%	On clay just below A unit		A unit 10cm thick on gravelly clay
C5	^{2}9665 ^{64}2942	13	Gully	180m	Gully erosion	8x2m	80-90%	Some artefacts *in situ* in A unit	Partly intact feature	Buff A unit 20cm thick on orange clay
C6	^{2}9641 ^{64}2937	1	Gully	195m	Gully erosion	10x3m	40-60%	On clay	? Ploughed	Gravelly clay only
C7	^{2}9645 ^{64}2940	2	Gully	190m	Gully erosion	10x4m	70%	On clay	? Ploughed	A unit 10cm thick on clay
C8	^{2}9628 ^{64}2937	1	Gully	200m	Gully erosion	10x3m	40-60%	On clay	? Ploughed	Gravelly clay only
C9	^{2}9620 ^{64}2940	2	Gully	200m	Gully erosion	10x3m	70-80%	On clay	? Ploughed	A unit 10cm thick on clay
Assoc. C6-11			Gully	185-215m	Gully erosion	1100x2-4m	20-80%		? Intact strip	A unit 20cm thick on clay
C10	^{2}9612 ^{64}2938	1	Gully	205m	Gully erosion	10x3m	80%	On clay	? Intact strip	A unit 20cm thick on clay
C11	^{2}9606 ^{64}2938	2	Gully	210m	Gully erosion	10x3m	80%	On clay	? Intact strip	A unit 20cm thick on clay
C12	^{2}9610 ^{64}2922	1	Hillslope	215m	Track	10x1-2m	50%	On track	? Ploughed	Remnant A unit 2-3cm thick on clay
C13	^{2}9615 ^{64}2931	5	Hillslope	210m	Track	3x2m	40-50%	On track	? Ploughed	
Assoc. C12-13			Hillslope	180-215	Track	750x1-2m	40-60%			
			Hillslope	215m	Grassy area	12x5m	50-80%		Ploughed	A unit 10-20cm thick on clay
			Hillslope	210m	Ants nest	2x1m	80%		Ploughed	
			Hillslope	210m	Track	50x1m	20%		Ploughed	Fine gravels on nest
			Hillslope	210m	Dam	50x1-2m	10-60%		Dug out	Mixed clay
			Hillslope	210m	Drill hole	5x5m	40%		Ploughed	Mixed clay
			Hillslope	215m	Grassy area	215m	30%		Ploughed	Mixed clay

Table B4 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Hillslope	220m	Track	20x1m	40%		Ploughed	Mixed clay
			Hillslope	220m	Grassy area	10x5m	40%		Ploughed	Mixed clay with gravels
			Hillslope	220m	Grassy area	10x5m	10-20%		Ploughed	Mixed clay with gravels
			Hillslope	210m	Grassy area	50x50m	10-20%		Ploughed	Mixed A unit and clay
			Hillslope	215m	Grassy area	10x4m	20-30%		Ploughed	A unit
C14	^{2}9601 ^{64}2907	1	Gully	210m	Gully erosion	10x5m	40-50%	On clay	Ploughed	Clay only
C15	^{2}9604 ^{64}2906	1	Gully	210m	Gully erosion	10x5m	40-50%	On clay	Ploughed	Clay only
Assoc. C14,15			Gully	210-215m	Gully erosion	130x5m	40-50%		Ploughed	Clay only
C16	^{2}9695 ^{64}2905	1	Gully	215m	Gully erosion	110x1-4m	10-80%	On clay	Ploughed	Mixed thin A unit on clay
			Gully	205m	Gully erosion	100x3m	40%		Ploughed	Mixed A unit and clay
			Gully	205m	Dam wall	40x4m	50%		Dug out	Mixed clay
C17	^{2}9616 ^{64}2902	3	Gully	205m	Gully erosion	20x4m	60%	Base of erosion	Eroded, ploughed	Mixed A unit and clay
Assoc. C17			Gully	205m	Gully erosion	50x3m	40%		Ploughed	Mixed A unit 25cm thick on clay
C18	^{2}9622 ^{64}2901	1	Gully	200m	Dam	10x1m	80%	On dam wall	Trampled	Mixed A unit and clay
Assoc. C18			Gully	200m	Dam	40x5m	70%		Trampled	Mixed A unit and clay
C19	^{2}9627 ^{64}2896	2	Gully	200m	Gully erosion	25x6m	40%	On gully wall	Trampled	Mixed clay
Assoc. C19			Gully	200m	Gully erosion	50x2m	30%		Trampled	Remnant mixed A unit on clay
			Hillslope	205-210m	Track	150x3m	50%			
C20	^{2}9648 ^{64}2893	17	Gully	195m	Gully erosion	60x2m	60%			Buff silt A unit on clay
C21	^{2}9658 ^{64}2891	4	Gully	190m	Gully erosion	30x1.5m	60%			Buff silt A unit on clay
C22	^{2}9655 ^{64}2889	1	Gully	190m	Gully erosion	10x3m	50%			Buff silt A unit on clay
Assoc. C20-22			Gully	190-195m	Gully erosion	140x2m	30-60%			Buff silt A unit to 20cm thick in places
C23	^{2}9662 ^{64}2887	3	Gully	190m	Gully erosion	10x8m	30-60%			Buff A unit 2-3cm on clay
C24	^{2}9681 ^{64}2884	1	Hillslope	185m	Sheet	5x4m	40%			Buff A unit 2-3cm on clay
Assoc. C24			Hillslope	180-185m	Sheet	150x50m	40%			Buff A unit 2-3cm on clay
C25	^{2}9670 ^{64}2855	3	Hillslope	190m	Sheet	20x15m	50%	On surface		A unit <2cm on clay
C26	^{2}9711 ^{64}2919	1	Gully	165m	Gully erosion	10x2m	0-80%	On clay	? Intact strip	A unit c.20cm thick on clay
Assoc. C26			Gully	165m	Gully erosion	100x2m	30%		? Intact strip	
C27, C28	^{2}9711 ^{64}2905 ^{2}9720 ^{64}2900	2	Hillslope	170m	Drain	490x0.5-2m	<5-10%	On drain	Dug out	Mixed clay
C29	^{2}9725 ^{64}2880	3	Hillslope	175m	Drain	310x1-3m	40-80%	On & in drain	Dug out	Mixed clay
C30	^{2}9730 ^{64}2880	1	Hillsope	165m	Drain	360x1m	20%	On drain	Dug out	Mixed clay
			Hillslope	160m	Drain, dam	150x3m	20%			Mixed clay
C31, C32	^{2}9736 ^{64}2884 ^{2}9734 ^{64}2888	2	Hillslope	160m	Drain	100x2m	30-40%	On drain	Dug out	Mixed clay
Assoc. C31-32			Gully	160m	Drain	50x2.5%	30%		Dug out	Mixed
			Gully	160m	Gully erosion	50x2m	40-80%			A unit 20-30cm on clay
			Gully	160m	Dam	50x3-4m	80%			Mixed
			Gully	160m	Gateway	5x3m	80%			A unit 30cm on clay
			Gully	155m	Gully erosion	100x1m	80%			A unit 20-30cm on clay

Table B4 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
C33	^{2}9750 ^{84}2888	1	Gully	155m	Gully erosion	2x2m	60%			Buff A unit 45-50cm on orange clay
Assoc. C33			Gully	150-155m	Gully erosion	250x2m	60%			
Assoc. C33			Gully 0.5km	150m	Gully erosion	50x2m	60%			
{ Same exposure }			Gully	150-155m	Gully erosion	250x2m	40%			Buff A unit 10-15cm on orange clay
			Gully 0.5km	150m	Gully erosion	50x2m	40%			
Same transect			Hillslope Bluffs 0.5km	160m	Grassy area	200x2m 100x2m	70%		? Ploughed	A unit 2-3cm on clay
			Hillslope Bluffs 0.5km	170-175 165m	Grassy area	150x3m 100x3m	30%		? Ploughed	A unit 2-3cm on clay
			Hillslope	170-175m	Grassy area	300x3m	30%		? Ploughed	A unit 2-3cm on clay
			Hillslope	160-165m	Grassy area x2	150x3m (x2)	30%		? Ploughed	A unit 2-3cm on clay
			Hillslope	155-170m	Grassy area	300x3m	30%		? Ploughed	A unit 2-3cm on clay
			Bluffs 0.5km	155-165m	Grassy area	250x3m	60%		? Ploughed	A unit 2-3cm on clay
			Bluffs 0.5km	150-160m	Track	150x3m	<40%		Dressed road	Introduced materials on clay

Table B5: Catchment D - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Hillslope	225m	Track	100x0.5-2m	20-80%			Loose dusty silt with a little sand
			Hillslope	220m	Drill hole	20x20m	80-90%		Dug out	Clay nodules
			Hillslope	215m	Sheet erosion	50x20m	80%		Trampled	Dark silt under trees
D1	^{2}9612 ^{64}3086	1	Hillslope	260m	Grassy area	10x10m	<5%	On grass		Buff A unit barely visible
			Gully	235-250m	Gully erosion	180x1-4m	40-100%			Buff A unit over orange clay
D2	^{2}9652 ^{64}3061	2	Gully	225m	Gully erosion	10x4m	90%	Upper wall	Eroded	Buff A unit over orange clay
Assoc. D2			Gully	215-225m	Gully erosion	190x4-5m	<2-100%			Buff A unit over orange clay
D3	^{2}9720 ^{64}3068	1	Gully	195m	Gully erosion	150x1m	0-90%	Lower wall	Redeposited	Orange clay
D4	^{2}9718 ^{64}3060	1	Hillslope	195m	Grassy area	20x20m	<5%	Amongst grass	Grazed	Not visible
D5	^{2}9715 ^{64}3040	2	Hillslope	205m	Ants nest	12x3m	90%	On ants nest	Disturbed	Packed clay, pellets & slope wash
D6	^{2}9714 ^{64}3033	1	Gully	200m	Dam	80x2m	<10-90%	On dam	Dug out	Mixed clay
			Gully	200m	Gully erosion	250x3m	0-90%			Buff A unit on orange clay
			Hillslope	200-205m	Drain	60x1m	90-100%		Dug out	Mixed A unit and clay
			Hillslope	240m	Drain	50x1m	80-90%		Dug out	Mixed A unit and clay
D7	^{2}9696 ^{64}3079	2	Gully	200m	Gully erosion	4x1m	70%	*In situ* in A unit	Intact	Buff A unit 30cm thick on orange clay
Assoc. D7			Gully	200-210m	Gully erosion - discontinuous	Total 80x1m	60-100%		Intact beside deep erosion	Buff A unit 30cm thick on orange clay
			Gully	215-225m	Gully erosion	360x0.5-4m	50%		<4m deep	Buff A unit 30cm thick on orange clay
Associated exposures			Gully	200m	Dam drain	35x1m	60%			Grey clay
			Gully	200m	Dam	40x6m	c.35%, <90%			Grey silt on gravelly orange clay
D8	^{2}9697 ^{64}3083	1	Gully	200m	Gully erosion	15x6m	c.35%, <90%	Surface lag		Grey silt on gravelly orange clay
			Gully	210m	Gully erosion	150x4m	10-15%			Orange clay
D9	^{2}9677 ^{64}3082	1	Gully	215m	Gully erosion	3x4m	10-15%	Surface lag	Eroded out	Orange clay
			Gully	220-225m	Track	150x0.5m	90-100%			Grey A unit only
			Gully	230m	Dam	90x3m	60-70%		Dug out, trampled	Grey 10cm thick on red; mixed on wall
			Hillslope	230-240m	Track	150x1m	50-80%			Clay only
D10	^{2}9730 ^{64}3087		Hillslope	200m	Track	30x4m	70-80%	On surface		Buff A unit <15cm thick on clay
Assoc. D10			Hillslope	190-210m	Track	520x1-4m	70-80%			
D11	^{2}9756 ^{64}3056	5	Gully	185m	Track	6x3m	60-70%	On track		Buff A unit <5cm on clay
Assoc. D11			Gully	185-190m	Track	300x3m	70%			
D12	^{2}9740 ^{64}3061	1	Gully	190m	Ants nest	2x2m	60-70%	On ants nest		Pellets; silt and clay
Assoc. D12,13			Gully	185-190	Gully erosion	300x1-10m	70%			Buff A unit <5cm thick on clay
D13	^{2}9749 ^{64}3057	3	Gully	185m	Gully erosion	10x2m	60-70%	On surface	Eroded	Buff A unit <5cm thick on clay
D14	^{2}9740 ^{64}3020	1	Gully	190m	Ants nest	2x1m	80%	On ants nes		Buff A unit 15cm thick on clay
Assoc. D14			Gully	175-195m	Gully erosion	300x1-2m	40%			Buff A unit 10cm thick on clay
D15	^{2}9754 ^{64}3011	1	Gully	185m	Gully erosion	3x2m	30%	On erosion		Buff A unit 20cm thick on clay
Assoc. D15,16			Gully	175-195m	Gully erosion	300x1-2m	40%			Buff A unit 15cm thick on clay
D16	^{2}9762 ^{64}3011	6	Gully	180m	Gully erosion	15x12m	40-50%	On erosion		Buff A unit 20cm thick on clay
			Hillslope	180-200m	Track, grass	250x10m	30%			Buff A unit 2-3cm thick on clay
			Hillslope	170-195m	Track, grass	470x10m	30%			Buff A unit 2-3cm thick on clay

Table B5 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
D17	^{2}9800 ^{64}3020	3	Hillslope	170m	Track	30x10m	30%	On surface		Buff A unit 2-3cm thick on clay
Assoc. D17			Hillslope	165-170m	Track	250x10m	30%			
Assoc. D17			Gully	160-175m	Track	300x10m	30%			
D18	^{2}9793 ^{64}3013	1	Gully	165m	Gully erosion	10x3m	80%			Buff A unit 30cm thick on clay
Assoc. D18			Gully	165-170m	Gully erosion	450x3m	80%			
D19	^{2}9808 ^{64}3008	2	Gully	165m	Gully erosion	10x2-3m	80-90%			Buff A unit 20cm thick on clay
Assoc. D19			Gully	165-170m	Gully erosion	450x2-3m	80-90%			
D20	^{2}9839 ^{64}2992	1	Hillslope	160m	Track	300x2m	30%			Buff A unit 2-3cm thick on clay
			Gully	160-180m	Gully erosion	450x2m	50%			Buff A unit 20cm thick on clay
D21	^{2}9849 ^{64}3003	1	Gully	160m	Gully erosion	10x3m	80%	On surface		Buff A unit 20cm thick on clay
D22	^{2}9850 ^{64}3009	8	Gully	165m	Gully erosion	10x2m	80%	On surface		Buff A unit 20cm thick on clay
D23	^{2}9849 ^{64}3016	9	Gully	170m	Gully erosion	4x2m	80-90%	On clay		Buff A unit <15cm thick on clay
D24	^{2}9845 ^{64}3026	2	Gully	180m	Gully erosion	10x2m	80%	On surface		Buff A unit <15cm thick on clay
Assoc. D21-24			Gully	160-180m	Gully erosion	310x3m	80%			Buff A unit 20cm thick on clay
			Hillslope	180-190m	Track	350x2m	30%			Buff A unit 2-3cm thick on clay

Table B6: Catchment E - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
E1	^{2}9623 ^{64}3135	1	Gully	230m	Ants nest	6x3m	80%	On ants nest		Orange clay
			Gully	230-240m	Gully erosion	300x1-3m	30-40%			Grey silt on clay
			Gully	230m	Gully erosion	50x1-2m	40-60%		Mixed from dam construction?	Grey A unit 20cm thick on brown clay
E2	^{2}9625 ^{64}3140	6	Gully	230m	Sheet erosion	50x50m	0-100%	On A unit	Partly intact	Buff A unit (unknown thickness) on clay
			Gully	230m	Gully ersoion	50x1-2m	0-60%		Eroded	Thin buff A unit on clay
			Gully	225m	Dam	80x3m	80%			Mixed clay
			Gully	225m	Gully erosion	30x4m	60%			
E3	^{2}9635 ^{64}3145	1	Gully	225m	Sheet erosion	20x5m	20-40%			Rocky yellow-orange A unit only
E4	^{2}9650 ^{64}3145	44	Gully	220m	Dam	200x3m	60-100%	On A unit & clay	? Some intact	Thick grey-buff A unit on clay
E5	^{2}9655 ^{64}3171	1	Gully	225m	Track	10x2m	60%	On track		A unit only
Assoc. E5			Hillslope	225m	Track	180x1-2m	20-80%			A unit only
			Gully	225m	Dam	40x1-2m	80%			Mixed clay
			Hillslope	230-235m	Track	100x0.6	70%			Buff A_1 unit only
			Hillslope	225-240m	Track (x2)	340x0.3 (x2)	0-80%			? Remnant A unit on clay
E6	^{2}9663 ^{64}3151	1	Gully	215m	Track	10x1-3m	90%			Grey-brown sandy A unit on clay
E7	^{2}9673 ^{64}3154	1	Gully	210m	Sheet erosion	8x0.5m	100%			
E8	^{2}9680 ^{64}3150	3	Gully	210m	Sheet erosion	4x2m	90%			
E9	^{2}9689 ^{64}3161	1	Gully	200m	Gully erosion	10x4m	90%			Grey brown sandy A unit on clay
E10	^{2}9689 ^{64}3157	3	Gully	205m	Track	5x2m	90%			Grey sandy A unit
Assoc. E8-10			Gully	190-210m	Gully erosion	800x5m	20%			Grey sandy A unit on clay
E11	^{2}9705 ^{64}3172	7	Gully	195m	Gully ersosion	10x4m	90%			
Assoc. E11			Gully	195m	Gully erosion	100x2m	50%			A unit on clay
E12	^{2}9713 ^{64}3146	8	Gully	200m	Gully erosion	10x4m	90%	1 on A unit; others on clay	? Partly intact	A unit <30cm thick on clay
Assoc. E12			Gully	195-200m	Gully erosion	200x1-2m	60-90%			Sandy silt A unit 20cm thick on clay
E13	^{2}9719 ^{64}3158	2	Gully	190m	Gully erosion	4x4m	90%			Sandy silt A unit 20cm thick on clay
			Gully	190m	Dam	80x4m	20%			Mixed A unit and clay
			Gully	190m	Gully erosion	100x10m	40%			Brown sandy A_1 10cm thick, on compact silty A_2 unit 20cm thick on orange clay
			Gully	195m	Gully erosion	100x1m	40%			" " "
			Gully	205m	Dam	50x4m	20%		Trampled	Brown sandy A_1 10cm thick, on compact silty A_2 unit >50cm thick on orange clay
			Gully	205m	Gully erosion	60x5m	60%			" " "
			Hillslope	195-205m	Grassy area	150x5	10-90%			A unit only
			Gully	195m	Gully erosion	80x20m	50%			A_1 10cm thick, on A_2 unit 20cm thick on orange clay
E14	^{2}9733 ^{64}3155	1	Hillslope	190m	Track	10x3m	40%	On track		Brown sandy compact A unit
E15	^{2}9742 ^{64}3180	1	Hillslope	190m	Sheet erosion	15x8m	80%	Beside ants nest		Grey brown A unit
			Hillslope	190m	Sheet erosion	15x8m	80%			
			Hillslope	225m	Track	250x1-2m	20-80%			
E16	^{2}9750 ^{64}3184	1	Hillslope	195m	Ants nest	2x2m	100%	Beside nest		Brown A unit
Assoc. E14,17										

Table B6 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
E17	^{2}9746 ^{64}3191	1	Hillslope	200m	Track	10x3m	40%			Brown sandy compact A unit
E18	^{2}9740 ^{64}3155	4	Gully	190m	Gully erosion	8x1.5m	50%	On side wall		2-3cm slope wash on clay
E19	^{2}9774 ^{64}3149	6	Gully	180m	Gully erosion	20x7m	60-95%	Bank, wall & floor of gully		Alluvium?; Buff A unit on clay
			Hillslope	170m	Track	40x0.3m	50%			Buff A unit
			Hillslope	170m	Sheet erosion	10x3m	30%			Buff A unit on clay
			Gully	165m	Gully erosion	250x2m	10-20%			Alluvium; Buff A unit on clay
			Gully	165m	Gully erosion	70x5m	20%			Alluvium; Buff A unit on clay
			Hillslope	195m	Track	70x4m	30%			Orange clay only
			Hillslope	195-205m	Gully erosion	200x2-3m	30-80%			Gravelly clay
E20	^{2}9793 ^{64}3102	2	Gully	200m	Gully erosion	10x2.5m	20%			Buff A unit on clay
E21	^{2}9838 ^{64}3117	1	Gully	170m	Gully erosion	10x2m	30%			Orange clay
Assoc. E20-21			Gully	170-200m	Gully erosion	690x2-4m	30%			Some A unit, on clay
E22	^{2}9862 ^{64}3100	1 7 1	Hillslope	165m	Sheet erosion Track Sheet erosion	10x10m 8x1m 1.5x0.8m	90% 80% 80%	On surface		Eroded and redeposited silt 2-3cm thick on clay
Assoc. E22			Hilllslope	165m	Track	80x5m	30%			
			Hillslope	165m	Track	30x1-2m	10%			
E23	^{2}9864 ^{64}3105	1	Bluffs 0.5km	165m	Track	10x0.3m	100%	On surface		Loose silt 1-2cm thick on clay
			Gully 0.5km Bluffs 0.5km	160m 160-165	Track	100x1-2m 100x1-2m	20%			Loose sandy soil 1-2m thick on clay
E24	^{2}9892 ^{64}3106	1	Gully 0.5km	155m	Track	70x0.3m	100%			Buff A unit
			Gully 0.5km	150-155m	Gully erosion	450x1-2m	5-100%			Buff A unit on orange clay
			Gully 0.5km	155m	Gully erosion	45x2m	10%			Buff A unit where exposed
E25	^{2}9873 ^{64}3082	1	Hillslope	180m	Sheet erosion	50x5-6m	70-80%	On surface		Orange clay
			Gully	175m	Gully erosion	30x2m	40%			A unit <10cm thick on pebbly clay
			Hillslope	170m	Ants nest	3x2m	80%			Pellets, fine gravels
E26	^{2}9891 ^{64}3091	1	Bluffs 0.5km	170m	Sheet erosion	20x10m	0-40%			A unit only
E27	^{2}9908 ^{64}3101	10	Gully 0.5km	150m	Dam	70x5m	5-100%	On slope	Trampled	Mixed clay
E28	^{2}9915 ^{64}3100	1	Gully 0.5km	150m	Track	50x0.3m	90%	On surface		Buff A unit only
E29	^{2}9915 ^{64}3092	1	Bluffs 0.5km	155m	Sheet erosion	5x2m	90%	On clay		A unit <10cm thick on clay
			Bluffs 0.5km	160m	Sheet	10x10m	50%			A unit <10cm thick on clay
			Bluffs 0.5km	165m	Sheet	10x5m	50%			A unit <10cm thick on clay
			Bluffs 0.5km	160m	Sheet	20x10m	50%			A unit <10cm thick on clay
E30	^{2}9883 ^{64}3125	4	Bluffs 0.5km	160m	Track	20x2m	80%	On track	Worn	Buff silt and gravels
E31	^{2}9896 ^{64}3122	3	Bluffs 0.5km	155m	Track	15x2m	80%	On surface	Worn	Buff silt and gravels
Assoc. E30-31			Bluffs 0.5km	155-160m	Track	330x2m	80%			Buff silt and gravels
			Bluffs 0.5km	155m	Track	80x0.3m	80%			
E32	^{2}9916 ^{64}3126	2	Bluffs 0.5km	160m	Track	17x0.3m	90%	On track	Trampled	Minimal A unit on clay
Assoc. E32			Bluffs 0.5km	155-165m	Track	120x0.3m	60%			Minimal A unit on clay

Table B6 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
E33	^{2}9925 ^{64}3131	2	Bluffs 0.5km	155m	Track	10x0.3m	90%	On track	Trampled	Minimal A unit on clay
Assoc. E33			Bluffs 0.5km	155-160m	Track	150x0.3m	40%			
			Hunter flats	150m	Track	300x0.5m	70%			Red alluvium
E34	^{2}9865 ^{64}3150	1	Hillslope	180m	Drain	10x10m	10%			
Assoc. E34			Hillslope Gully	180m 180m	Drain Drain	550x10m 100x10m	10-20% 10%	On drain	Dug out	Mixed A unit and clay - mainly clay; A unit <5cm beside drain
			Hillslope	175m	Drain	40x10m	40%			Mixed A unit and clay
E35	^{2}9849 ^{64}3156	1	Hillslope	190m	Drain	10x10m	30%			
Assoc. E35-37			Hillslope	190	Drain	120x10m 370x10m	70% 30%			Mixed clay on drain. A unit <5cm thick beside drain
E36	^{2}9838 ^{64}3168	1	Hillslope	190m	Drain	15x1.5m	70%			
E37	^{2}9829 ^{64}3170	1	Hillslope	190m	Drain	5x1m	60%			
			Gully	175m	Dam	100x1-2m	20-30%			A unit <5cm thick, on clay
			Gully	180m	Gully erosion	200x1-2m	20-30%			A unit <5cm thick, on clay
			Hillslope Gully	195-220m 190m	Track	230x10m 50x10	25%			A unit <5cm thick, on clay
E38	^{2}9791 ^{64}3196	2	Gully	190m	Gully erosion	25x5m	60%	On clay		A unit <15cm thick on clay
E39	^{2}9779 ^{64}3204	1	Gully	195m	Gully erosion	10x4m	80%	On clay		A unit <15cm thick on clay
Assoc. E38-39			Gully	185-195m	Gully erosion	300x1-2m	60%			A unit <15cm thick on clay
			Gully	185-195m	Gully erosion	300x3m	20%			A unit <15cm thick on clay
			Hillslope	185m	Track	150x1m	95%			A unit <5cm thick on clay
			Hillslope	185m	Drain	150x1m	95%			A unit <5cm thick on clay
			Hillslope	190m	Track	200x0.3m	90%			A unit <5cm thick on clay
			Hillslope	210-240m	Track	800x3m	60%			Grey A unit; some red clay
			Gully	200m	Gully erosion	50x1m	50%			
			Gully	200-205m	Gully erosion	200x2m	20-80%			
			Hillslope	230m	Dam	60x4m	30%			A unit 30cm adjacent to dam
			Hillslope	220m	Gateway	20x20m	95%		Trampled	Sandy A unit
			Hillslope	220m	Dam	50x5m	50%		Mixed, trampled	Mixed brown sandy soil

Table B7: Catchment F - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Gully 0.5km	160m	Dam	100x6m	80%			Mixed gravels and clay
			Gully	170m	Dam	100x2-10m	80%			Mixed gravels and clay
			Gully	175m	Sheet erosion	20x3m	80%			Mixed A unit & clay 20cm thick on clay
			Gully	175m	Sheet erosion	20x4m	30-40%			A unit only
			Gully	175-180m	Gully erosion	200x5-6m	20-30%			Mixed A unit on clay
F1	2 9951 64 3223	1	Gully	175m	Gully erosion	100x1m	80%	On top of A unit		Mixed A unit & clay 20cm thick on clay
F2	2 9946 64 3233	1	Gully	180m	Gully erosion	100x1-2m	60-80%			Mixed A unit & clay 20cm thick on clay
F3	2 9931 64 3247	1	Gully	185m	Gully erosion	200x3m	80%	On clay		Mixed gravelly A unit 20cm thick on gravelly clay
			Hillslope	190m	Sheet erosion	5x4m	50-100%			Gravelly A unit
			Hillslope	185m	Trough	15x1m	60%		Trampled	Loose gravelly silt
			Hillslope	190m	Quarry	100x50m	80%			Gravels; A unit removed
F4, F5	2 9862 64 3240 2 9958 64 3239	1 + 1 = 2	Hillslope	195m	Drain	50x8m	20%			Brown silty A unit on clay
F6	2 9859 64 3233	2	Gully	190m	Gully erosion	15x15m	70%	Surface wash	Badly eroded	A unit on clay
F7	2 9855 64 3228	4	Gully	190m	Gully erosion	30x15m	80%	1 in situ in A unit; 3 on clay	Badly eroded	A unit 20cm thick on clay
Assoc. F6-7			Gully	190m	Gully erosion	60x60m	60%		Badly eroded	Remnant A unit on clay
F8	2 9861 64 3226	8	Gully	185m	Gully erosion	20x15m	80%		Badly eroded & trampled	Eroded A unit on clay
Assoc. F8			Gully	185m	Gully erosion	50x2-5m	80%			
F9	2 9870 64 3226	1	Gully	185m	Gully erosion	10x1-2m	70%			Mixed eroding A unit & clay
F10	2 9975 64 3225	1	Gully	180m	Gully erosion	6x3m	80%			Mixed eroding A unit & clay
F11	2 9880 64 3220	1	Gully	180m	Gully erosion	10x3m	80%			Mixed eroding A unit & clay
F12	2 9884 64 3220	1	Gully	175m	Gully erosion	30x8m	80%			Mixed eroding A unit & clay
F13	2 9885 64 3217	1	Gully	180m	Gully erosion	6x6m	90%			Mixed eroding A unit & clay with gravels & cobbles
Assoc. F13			Gully	50x2m	Gully erosion	50x2m	90%			
			Gully	180m	Gully erosion	15x3m	40-50%			A unit
			Gully	175m	Track	100x0.3m	60-70%			A unit
F14	2 9896 64 3201	2	Gully	175m	Gully erosion	20x1-2m	40-80%			A unit c.20cm thick on clay
			Gully	170m	Dam	50x1-2m	80%			Mixed gravelly clay
			Gully Hillslope	170m 175-185m	Track	150x2m 190x2m	20%			Buff A unit <3cm thick on orange clay
F15	2 9898 64 3179	1	Hillslope	180m	Sheet erosion	5x3m	20%			Buff A unit <2cm thick on clay
F16	2 9902 64 3170	1	Bluff 0.5km	175m	Drain	200x10m	25%			Mixed A unit and clay
Assoc. F16			Hillslope	175m	Drain	100x10m	25%			
			Bluff 0.5km	170m	Track	100x3m	90%			Clay only
			Gully 0.5km	160m	Dam	100x5m	80%			A unit on clay
			Hillslope	200m	Dam	30x3m	20-30%			Mixed clay
			Hillslope	195m	Track	50x2m	70-100%			Clay; some introduced gravels
			Hillslope	195m	Ants nest	5x2m	80%			Pellets & fine gravels; clay
			Hillslope	210m	Dam	50x2m	0-60%			Mixed clay
			Hillslope	215m	Drain	200x3m	0-60%			Mixed clay
F17	2 9833 64 3259	1	Hillslope	225m	Grassy area	10x3m	20%			Mixed clay
Assoc. F17			Hillslope	210-225m	Grassy area	200x3m	0-40%			Mixed clay
			Hillslope	220m	Dam	30x2m	40%			Clay
			Hillslope	225m	Ants nest	2x1m	80%			Pellets & fine gravels
			Ridge	190m	Dam	40x2m	80-90%			Some A unit; mostly clay

Table B8: Catchment G - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
G1 G2 G3 G4 G5 Assoc. G1-5	^{2}9918 ^{64}3362 ^{2}9916 ^{64}3356 ^{2}9915 ^{64}3349 ^{2}9929 ^{64}3360 ^{2}9930 ^{64}3368	1 1 2 1 5	Bluffs & Hillslopes 0.5km from Hunter flat	} } 170m } } 160m	Track	700x3m	60%			A unit <1cm thick on clay
			Hunter flat	160m	Track	600x2m	40%			Alluvium
			Bluffs 0.5km Hillslope	160-185m 185-190m	Track	590x2m 100x2m	90%			A unit c.10cm thick on clay
			Hillslope	190m	Quarry (gravels)	50x20m	40%			Thin silt amongst cobbles
			Bluffs 0.5km	175m	Track	150x0.2m	30%			Fine sand and hard grey clay
			Gully 0.5km	170m	Dam	50x3m	90%			Grey clay A unit on red clay
			Gully	175m	Gully erosion	200x2m	30%			Remnant A unit on clay; some slope wash
G6	^{2}9913 ^{64}3329	1	Gully	175m	Gully erosion	12x2m	40%	On clay		Clay
G7	^{2}9919 ^{64}3334	1	Gully	170m	Gully erosion	40x5m	40%	On clay		Clay
Assoc. G6-7			Gully	170-180m	Gully erosion	150mxc.2m	15-20%			Mixed A unit and clay
			Hillslope	180m	Sheet erosion	30x25m	40%			Loose brown A unit
			Hillslope	175m	Track	150x5m	0-70%			Brown-grey A unit
			Bluffs 0.5km	170m	Track	75x0.5m	70%			Brown-grey A unit
			Bluffs 0.5km	165m	Track	100x0.3m	30%			Grey A unit on clay
			Bluffs 0.5km	170m	Drain	40x10-12m	70%			Mixed A unit & clay on clay
			Hunter flats	160m	Ploughed paddock	220x160m	90%			Dark brown clay alluvium
G8	^{2}9896 ^{64}3285	2	Hillslope	190m	Sheet erosion	100x30m	30-40%			Orange clay only
			Hillslope	220m	Sheet erosion	7x1m (x3)	80%			Deflated A unit

Table B9: Catchment H - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Hillslope	235-240m	Track	160x3m	80%			Grey A unit & some clay exposed
H1	29700 643270	1	Gully	230m	Gully erosion	10x2m	10%			Grey A unit on clay
			Gully	220m	Gully erosion	200x1m	50%			Grey A unit on clay
			Gully	215m	Dam	100x1-2m	60%			Mostly orange clay
			Gully	210m	Gully erosion	210m	<50%			Mostly orange clay
			Hillslope	225m	Ants nest	10x6m	90%			A unit 10-20cm on clay
			Hillslope	225m	Ants nest	2x1m	90%			A unit
			Hillslope	220m	Track	30x10m	90%			A unit
			Hillslope	215m	Ants nest (x2)	2x2m (x2)	90%			Fine gravels and pellets
			Hillslope	225m	Sheet erosion; ants nest	5x1-3m	80%			Remnant A unit and clay
			Hillslope	220m	Ants nest	2x1.5m	80%			Fine gravels, pellets
			Hillslope	215m	Sheet erosion	50x30m	40-60%			A unit 10-20cm on clay; gravels
			Hillslope	215m	Sheet erosion	30x10m	40-80%			A unit 10-20cm on clay; gravels
			Hillslope	215m	Ants nest	1.5x1.5m	80%			Fine gravels, pellets
			Hillslope	210-215m	Drain	50x1-2m	0-80%			A unit 10-20cm on clay; gravels
			Hillslope	210m	Dam	30x1-2m	80%			A unit 10-20cm on clay; gravels
			Hillslope	215m	Sheet	50x30m	60-80%		Ploughed	Buff A unit silt, very compact
			Gully	185m	Gully erosion	25x1-2m	20%			A unit on clay
H2	29770 643395	2	Gully	185m	Dam	40x5m	90%	On dam edge	Trampled	Redeposited silt on clay
H3	29768 643399	1	Gully	185m	Dam	40x2-3m	80%	On dam edge	Trampled	Loose mixed A unit & clay
H4	29771 643401	3	Gully	185m	Dam	50x5m	80-90%	On A unit	Trampled	Remnant A unit on clay
Assoc. H2-H4			Gully	185m	Dam	30x1-5m	70-90%			Mixed A unit & clay
			Gully	185m	Dam	100x1m	70%			Mixed clay and gravels
			Hillslope	190m	Track	60x0.3m	80%		Ploughed	Buff A unit
			Hillslope	180-185m	Track	300x0.3m	80%			Loose sandy soil
			Hillslope	180m	Track	200x4m	60-80%			Mixed A unit and clay
H5	29811 643430	1	Hillslope	175m	Grassy area	0.2x0.2m	30%			Mixed A unit and clay
H6	29829 643411	9	Gully	175m	Ants nest	10x10m	20%			Reddish silt
H7	29792 643404	2	Gully	180m	Gateway	20x3m	90%			Thin brown A unit on clay
H8	29795 643422		Hillslope	180m	Track	580x1-2m	80%			Mixed A unit and clay
H9	29788 643367			195m						
H10	29784 643347			200m						
Assoc. H8-10				180-200m						
			Gully	180m		50x2m				
			Hillslope	200m	Sheet erosion	40x40m	25%			
H11	29835 643402	2	Hillslope	170m	Ants nest	2.5x2.5m	30%			Mixed red clay with gravels
			Hillslope	170m	Ants nest	3x3m	30%			Mixed clay
H12	29833 643383	3	Gully	180m	Gateway	5x5m	75%	On clay	Trampled	Orange sandy clay
H13	29867 643388	1	Hillslope	175m	Ants nest	10x4m	60%			Redeposited A unit on mixed clay
			Hillslope	180m	Ants nest	2x2m	30%			Redeposited A unit on mixed clay
			Hillslope	185m	Ants nest	2x1.5m	30%			Redeposited A unit on mixed clay
			Gully	170m	Track	20x3m	80%			Red clay
			Hillslope	200m	Sheet erosion	20x5m	50%			A unit only exposed
			Hillslope	190m	Drain	60x10m	80%			A unit and clay
H14	29805 643344	1	Gully	185m	Gully erosion	20x10m	40%			

Table B10: Catchment I - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Gully	270m	Gully erosion	20x10m	50-60%			Friable brown clay
			Gully	270-275m	Gully erosion	200x2m	c.20%			Friable brown clay
			Gully	280m	Gully erosion	50x2-3m	40-80%			Brown clay
I1	^{2}9535 ^{64}3182	5	Gully	265m	Gully erosion	20x1-4m	60-80%	On A unit & clay	Trampled	A unit 10cm thick on clay
Assoc. I1			Gully	270-285m	Gully erosion	280x1-2m	40%			A unit 10-20cm thick on clay
I2	^{2}9544 ^{64}3181	5	Hillslope	260m	Sheet, ants nest	25x3-6m	20-100%	On clay & nest	? Bulldozed	Clay only
I3	^{2}9540 ^{64}3171	1	Hillslope	275m	Track	10x0.3m	40%	On surface	Trampled	A unit; clay not exposed
Assoc. I3			Hillslope	270-275m	Track	60x0.9m	0-60%		Trampled	A unit; clay not exposed
			Gully	270-285m	Gully erosion	280x1-4m	20-60%			Grey A unit 10cm thick on red-brown clay
			Gully	260m	Dam	50x2m	20-80%		Bulldozed	Mixed brown clay
			Gully	250m	Gully erosion	5x1m	20%			
			Gully	250m	Gully erosion	10x1-2m	60-80%			A unit <20cm thick on clay
			Gully	250m	Gully erosion	20x1-2m	40-60%			Brown clay
			Gully	250m	Sheet erosion	20x10m	0-40%			Orange clay
			Hillslope	255m	Track	50x0.3m	80%			Buff A unit
			Gully	255m	Ants nest	3x2m	80%			Buff A unit
			Hillslope	250m	Ants nest	5x3m	80%			Buff A unit; pellets & fine gravels
			Gully	255m	Sheet erosion	100x1-2m	20-40%			Orange clay
			Gully	245m	Gully erosion	20x2-3m	40-60%			Thin A unit on orange-brown clay
			Gully	245m	Track	40x0.5-2m	60%			
			Hillslope	240-245m	Track	50x0.5-2m	80%			A unit c. 20cm thick
			Hillslope	235-250m	Track	200x1-2m	20-80%			Thin A unit on clay at higher elevations; only A unit exposed lower down hillslope
			Gully	260-270m	Gully erosion	150x2m	20-40%			Brown-black clay; No A unit
			Gully	260-270m	Gully erosion	150x2m	20%			Brown-black clay; No A unit
			Gully	235m	Ants nest	1x1m	70%			
I4	^{2}9569 ^{64}3241	7	Gully	235m	Track, gully erosion	30x1-4m	80-90%	On A unit & clay	Intact adjacent	A unit 20cm thick on clay
Assoc. I5			Hillslope	240-250m	Track	320x0.3-4m	0-80%			Deflated A unit
I5	^{2}9590 ^{64}3140	14	Hillslope	255m	Track	4x4m	100%	On surface	Worn	Deflated A unit only
			Hillslope	240m	Gateway	2x2m	80%		Trampled	Loose mixed soil
			Hillslope	235m	Ants nest	2x2m	80%			Pellets, fine gravels
			Hillslope	230-235m	Track	150x0.3-1m	80%			Deflated A unit & gravels
			Hillslope	250m	Track	250x1m	80%		Mixed	Loose red A unit and clay
			Hillslope	245m	Gateway	20x20m	60-80%		Trampled	Red clay
I6	^{2}9632 ^{64}3227	1	Gully	245m	Track	60x0.5-1m	80%	On surface	Trampled	Mixed red A unit and clay
			Gully	245m	Track	30x10m	0-80%			Mixed red A unit and clay
			Gully	245m	Dam	100x3m	80%			Mixed clay
			Gully	240m	Ants nest	2x2m	80%			Pellets, fine gravels
			Gully	235m	Gully erosion	40x1-2m	70%			Orange clay
I7	^{2}9632 ^{64}3257	1	Gully	230m	Dam	80x2-3m	60-80%	On slumped deflated A unit	Trampled	A unit 20-30cm thick on yellow-orange clay
			Gully	225m	Track	30x2-3m	30-80%			A unit 20cm thick on clay
			Gully	225m	Gully erosion	40x1-2m	60-80%			A unit 20cm thick on clay

Table B10 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
I8	^{2}9482 ^{64}3198	1	Gully	280m	Sheet erosion	50x12m	10%			Buff A on clay; & slope wash
I9	^{2}9494 ^{64}3204	1	Gully	270m	Sheet erosion	20x5m	10%			Buff A on clay; & slope wash
I10	^{2}9504 ^{64}3191	1	Hillslope	285m	Track	10x0.5m	30%	On surface		Mainly clay
I11	^{2}9506 ^{64}3210	2	Hillslope	270m	Track	10x0.12m	10%	On surface		Buff A unit on clay
I12	^{2}9509 ^{64}3221	1	Hillslope	260m	Track	10x0.5m	30%	On surface		Buff-pale clay
Assoc. I10-12			Hillslope	250-295m	Track	770x0.3-2m	<2-30%			Mostly orange clay
			Ridge	335-340m	Track	250x2m	20%			Remnant A unit on clay
			Ridge	340m	Grassy area	10x1-2m	0-100%			
			Hillslope	325m	Sheet erosion	50x30m	40%			Remnant A unit on clay
			Hillslope	320-335m	Gully erosion	800x5m	30%			
			Gully	300m	Grassy area	20x10m	40%			Orange clay
			Gully	290m	Grassy area	80x2-3m	30-40%			Mixed clay
			Gully	270-275m	Gully erosion	200x1-2m	20-40%			
			Gully	260-285m	Gully erosion	420x3m	50%			Orange clay
I13	^{2}9519 ^{64}3248	8 1	Gully Gully	245-250m 245m	Track Gully erosion	100x0.1-10m 6x4m	10-40% 50%	Upper wall		Silty clay
I14	^{2}9493 ^{64}3251	12	Gully	255m	Dam	50x8m	50%	On east side	Trampled	Orange clay; no A unit
I15	^{2}9505 ^{64}3250	1	Gully	250m	Trough	4x2m	80%	On surface	Trampled	Buff silt
I16	^{2}9524 ^{64}3260	4	Hillslope	240m	Track	10x2m	30%	On track		A unit <5cm thick on clay
I29	^{2}9526 ^{64}3275	1	Hillslope	250m	Track	10x2m	30%	On track		A unit <5cm thick on clay
Assoc. I29, 16			Hillslope	245-250m	Track	120x2m	40%			A unit <5cm thick on clay
I17	^{2}9536 ^{64}3252	3	Gully	240m	Gully erosion	1x1m	90%	On surface		Buff A unit on orange clay
I18	^{2}9545 ^{64}3257	3	Gully	235m	Gully erosion	5x0.5m	70%	On gully bank		
I19	^{2}9554 ^{64}3262	44	Gully	235m	Gully erosion	20x2m	15-20%	On surface	Rabbit diggings	
I20	^{2}9553 ^{64}3267	1	Gully	230m	Gully erosion	8x1m	90%	In gravel lens in gully wall	Redeposited	
I21	^{2}9561 ^{64}3270	3	Gully	230m	Gully erosion	8x0.5m	<5-10%	On surface		Eroded buff A unit
I22	^{2}9560 ^{64}3265	1	Gully	225m	Gully erosion	10x10m	<5%	On surface		
Assoc. I17-22			Gully	225-240m	Gully erosion	900x5m	c.30% (0-100%)			Buff A unit on clay.
I23	^{2}9567 ^{64}3248	1	Gully	230m	Gully erosion	1.5x0.5m	95%	On gully floor	Redeposited	
I24	^{2}9563 ^{64}3250	1	Gully	230m	Gully erosion	2x1m	95%	In gravel lens in gully wall	Redeposited	
I25	^{2}9560 ^{64}3253	1	Gully	230m	Sheet erosion	0.2x0.1m	90%	On gully bank		Buff A unit
I26	^{2}9564 ^{64}3259	6	Gully	225m	Ants nest	5x2m	95%	Surface slope wash		A unit
I27	^{2}9563 ^{64}3263	1	Gully	225m	Gully erosion	20x10m	20%			
I28	^{2}9569 ^{64}3267	4	Gully	225m	Gully erosion	50x10m	80%	Base of wall	Ploughed	Slope wash on orange clay
			Gully	225m	Track	60x1.5m	25%			Buff - pale clay
I30	^{2}9563 ^{64}3292	5	Hillslope	250m	Sheet erosion	10x5m	20%	On surface		Mixed brown sandy A unit
			Hillslope	220m	Drain	200x12m	25%			Mixed orange clay
I31	^{2}9601 ^{64}3331	3	Hillslope	225m	Sheet erosion	10x3m	20%	Near tree		Thin brown A unit

Table B10 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
I32	^{2}9600 ^{64}3299	3	Gully	215m	Gully erosion	3x3m	80%	On surface	Mixed A unit	Reworked A unit & wash on clay
I32		1	Gully	215m	Ants nest	3x3m	95%			
I33	^{2}9594 ^{64}3299	13	Gully	215m	Gully erosion	70x30m	40-70%	Gully side & terrace surface		Disturbed A unit on clay; some wash
Assoc. I32-33			Gully	215m	Gully erosion	400x2-3m	30-40%			A unit on clay
			Gully	215m	Dam	20x1m	30-40%			
I34	^{2}9596 ^{64}3308	3	Gully	215m	Drain	10x12m	70-100%			A unit on clay
I35	^{2}9607 ^{64}3316	1	Gully	215m	Drain	10x0.5m	95%			
I36	^{2}9619 ^{64}3328	4	Hillslope	215m	Drain	4x0.5m	95%		Disturbed	A unit on clay
Assoc. I34-36			Hillslope	215m	Drain	150x0.5m	95%			
			Gully			300x10m				
I37	^{2}9634 ^{64}3325	26	Gully	200m	Track	40x2m	70-95%	On track		Buff A unit
Assoc. I37			Gully	200m	Track	375x2m	20%			
I38	^{2}9670 ^{64}3358	2	Gully	195m	Gully erosion	1x1m	80%	Gully wall		A unit on clay
I39	^{2}9667 ^{64}3361	1	Gully	195m	Gully erosion	10x1m	60%	Gully wall		A unit
I40	^{2}9678 ^{64}3374	2	Gully	190m	Gully erosion	1x0.3m	80%	Gully wall		A unit
I41	^{2}9690 ^{64}3381	1	Gully	190m	Gully erosion	3x0.5m	90%	On bank		A unit
I42	^{2}9697 ^{64}3390	11	Gully	190m	Gully erosion	20x20m	100%	Bank & wall		A unit on clay
Assoc. I38-42			Gully	190-195m	Gully erosion	400x1-2m	10-20%			A unit on clay
I43	^{2}9708 ^{64}3389	1	Hillslope	190m	Track	10x0.3m	20-30%	Trampled		
Assoc. I43			Hillslope	190-210m	Track	560x0.3m	20-30%			

Table B11: Confluence IJ - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
IJ1	[2]9711 [64]3412	1	Confluence	180m	Sheet erosion	10x10m	40-50%	Gully wash		Brown silt
IJ2	[2]9710 [64]3420	5	Confluence	180m	Gully erosion	10x10m	60-70%	Gully wash		Brown silt
IJ3	[2]9712 [64]3426	22	Confluence	180m	Ants nest	3x2m	100%	Beside nest		Sandy clay
IJ4	[2]9704 [64]3422	63	Confluence	180m	Gully erosion	50x5m	60-80%	Mostly on clay	Trampled	A unit very thin on clay
IJ5	[2]9701 [64]3428	30	Confluence	180m	Gully erosion	30x10m	50%			A unit very thin on clay
IJ6	[2]9692 [64]3427	1	Confluence	180m	Gully erosion	1x1m	50%			
IJ7 Assoc. IJ7	[2]9682 [64]3431	3	Confluence	180m 180m	Track Sheet	100x0.5m 2x1m	80% 80%	On A unit	Trampled	A unit only visible
IJ8	[2]9658 [64]3416	31	Confluence	185m	Gully erosion	150x3m	80%	On A unit & clay	Trampled, eroded	A unit <10cm thick on clay
Near IJ8			Confluence	185m	Gateway	2x2m	80%		Trampled	A unit only visible
Between IJ8 & IJ9			Confluence	185m	Gully erosion	50x3-4m	50%		Trempled, eroded	A unit on clay
IJ9	[2]9671 [64]3429	11	Confluence	185m	Gully erosion	30x2-3m	40-60%	On A unit	Trampled	A unit c.20cm thick
IJ10	[2]9677 [64]3435	3	Confluence	185m	Gully erosion	10x3-4m	80%	On clay	Intact only beside gully	A unit 20cm thick on orange clay

Table B12: Catchment J - artefact location and exposure data

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
			Hillslope	290m	Sheet erosion	20x3-5m	40%			Clay only
			Gully	285m	Gully erosion	50x20m	20-80%			
			Gully	280m	Gully erosion	30x10m	60-80&			Very thin A unit on clay
J1	29450 63276	1	Gully	265m	Gully erosion	25x0.5-4m	10-80%	On A unit		A unit 10cm thick on clay
J2	29460 63303	1	Gully	250m	Gully erosion	10x4-5m	30-40%			A unit <10cm thick, on clay
J3	29463 63305	1	Gully	250m	Gully erosion	10x2m	20-40%	On clay		Clay only; no A unit
Assoc. J2-J3			Gully Gully	250-260m 255m	Gully erosion Dam	290x4-5m 100x2m	30-40% 30-40%			
			Hillslope	270m	Ants nest	3x2m	80%			Fine gravels, pellets
			Hillslope	265m	Grassy area	200x3m	40%			Deflated clay; no A unit
			Hillslope	265m	Drain	150x2m	20-60%			Deflated clay; no A unit
			Hillslope	260m	Drain	200x2m	20-60%			Deflated clay; no A unit
J4	29477 63306	18	Hillslope	250m	Track, sheet	50x30m	40%	On clay	Trampled, poor	Orange clay; no A unit
J5	29489 63301	3	Hillslope	255m	Grassy area	30x5m	35%		Sheet wash	Buff A unit on clay
J6	29402 63296	4	Hillslope	260m	Track	30x15m	35%		Sheet wash	Buff a unit on clay
Assoc. J4-J6			Hillslope	255-260m	Track	500x5m	25-40%			
J7	29501 63323	3	Gully	235m	Dam	150x6m	90%			A unit <5cm thick on clay
J8	29494 63345	1	Hillslope	240m	Grassy area	300x5m	40%	Amongst grass	Ploughed	Orange clay
			Hillslope	245m	Grassy area	300x5m	40%		Ploughed	Orange clay
J9	29499 63363	1	Gully	240m	Grassy area	50x30m	30%	Amongst grass	Ploughed	Mixed clay
J10	29512 63360	1	Hillslope	240m	Grassy area	10x10m	30%	Amongst grass	Ploughed	Mixed clay
Assoc. J10			Hillslope	240-245m	Grassy area	90x10m	30%		Ploughed	Mixed clay
			Hillslope	225-235m	Track	240x2m	80%			
J11	29515 63305	1	Gully	240m	Gully erosion	10x1m	15%	Amongst grass		Very thin A unit on clay
J12	29516 63312	2	Gully	240m	Gully erosion	12x3m	40%	On surface		Clay only
Assoc. J11-12			Gully	240m	Gully erosion	200x2m	15-20%			Thin A unit on clay
J13	29531 63339	1	Hillslope	230m	Sheet erosion	60x50m	20%	On surface		Very little A unit; mostly clay
J14	29547 63314	1	Hillslope	255m	Track	10x5m	95%	On surface		Thin brown soil
Assoc. J14			Hillslope	250-255m	Track	340x1-2m	60%			Thin brwon soil on orange clay
J15	29545 63307	1	Hillslope	255m	Track	20x10m	80%	On surface		Sandy orange clay
J16	29545 63319	2 1	Hillslope	250m	Track	3x2m 1x1m	40% 5%	On surface		Sandy orange clay Mixed A unit
J17	29544 63336	1	Hillslope	230m	Track	10x0.3m	25%			Mixed A unit & some clay
Assoc. J15-17			Hillslope	225-255m	Track	450x2-10m	30%			Sandy orange clay
J18	29551 63342	1	Hillslope	230m	Grassy area	10x3m	20%			
J19	29516 63342	7	Gully	225m	Gully erosion	30x5m	40%	On surface		Thin A unit on clay
J20	29522 63345	1	Gully	225m	Track	50x0.3m	80%	On A unit & clay		A unit <15cm thick on clay
J21	29520 63340	6	Gully	225m	Gully erosion	30x3m	40&	On A unit		A unit <40cm thick on clay
Assoc. J19-21			Gully	220m	Gully erosion	600x1m	30%			A unit mostly <15cm thick on clay
J22	29547 63351	1	Gully	215m	Track	10x1.5m	80%	On surface		A unit <5cm thick on clay
J23	29554 63354	1	Gully	215m	Dam	250x10m	80%	On dam wall		Mixed soils
J24	29554 63361	2	Gully	215m	Gully erosion	2x2m	50%	On surface		A unit <5cm thick on clay

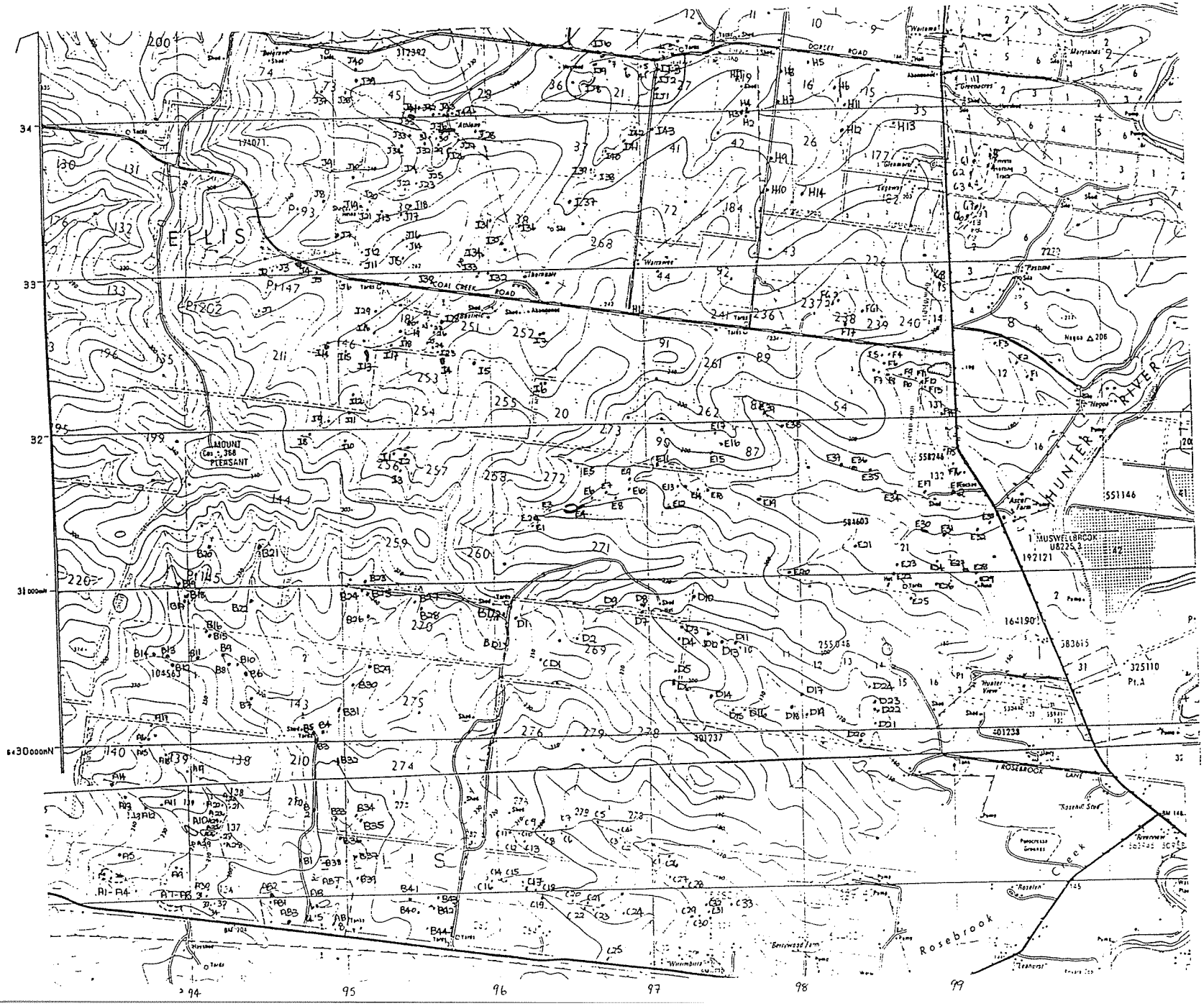
Table B12 ... continued

Location	Grid reference	No. of finds	Land unit	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
J25	^{2}9563 ^{64}3363	6	Gully	215m	Gully erosion	30x20m	70%	On A unit		A unit <2cm thick on clay
J26	^{2}9575 ^{64}3375	13	Gully	210m	Gully erosion	120x60m	30%	On A unit		A unit <10cm thick on clay
J27	^{2}9582 ^{64}3383	3	Gully	210m	Gully erosion	15x15m	30%	On surface		A unit <10cm thick on clay
J28	^{2}9594 ^{64}3389	6	Gully	205m	Gully erosion	60x4m	40%	On surface	Ploughed	Mixed
Assoc. J24-28			Gully	205-215m	Gully erosion	740x2m	30%			
J29	^{2}9568 ^{64}3380	18	Gully	210m	Grassy area	100-80m	30%	On surface		A unit <3cm thick on clay
J30	^{2}9567 ^{64}3384	2	Gully	210m	Grassy area	4x2m	30%	2m from fence		Thin A unit on clay
J31	^{2}9553 ^{64}3386	2	Gully	210m	Grassy area	4x2m	30%	On surface		Thin A unit on clay
J32	^{2}9560 ^{64}3381	1	Gully	215m	Track	10x0.3m	90%	On surface		Thin A unit on clay
J33	^{2}9550 ^{64}3387	44	Hillslope	220m	Grassy area	50x50m	30%	On surface		Thin A unit on clay
J34	^{2}9545 ^{64}3380	2	Hillslope	230m	Grassy area	10x15m	25%	On surface		Thin A unit on clay
Assoc. J29-34			Hillslope	210-240m	Grassy area	1620x5m	20%			A unit <3cm thick on clay
			Hillslope	215-225m	Grassy area	360x10m	30%			A unit <10cm thick on clay
J35	^{2}9540 ^{64}3397	56	Gully	215m	Track	200x2m	80%	On track	Worn	A unit; clay in places
J36	^{2}9575 ^{64}3389	22	Gully	210m	Track	50x10m	0-100%	On tracks	Deflated	A unit only
			Gully	230m	Track	50x1m	50%			Grey; A unit <10cm thck on clay
			Gully	230m	Ants nest	2x2m	80%			Buff A unit 20cm thick on clay
J37	^{2}9494 ^{64}3415	1	Gully	230m	Gully erosion	10x2m	50%	On A unit		Grey; A unit <10cm thck on clay
Assoc. J37			Gully	225-230m	Gully erosion	80x2m	50%			Grey; A unit <10cm thck on clay
			Gully	225m	Track	10x2m	80%			Grey; loose A unit on clay
J38	^{2}9508 ^{64}3413	1	Gully	220m	Ants nest	2x2m	90%			Grey-brown A unit
J39	^{2}9514 ^{64}3422	5	Hillslope	225-230m	Grassy area	50x10m	20-40%	On surface	Ploughed	Brown-orange clay
J40	^{2}9514 ^{64}3430	1	Hillslope	235m	Drain	150x2m	70%	On drain	Ploughed	Brown-orange clay
			Gully	220m	Ants nest	2x2m	80%			Grey-brown A unit
			Gully	220m	Gully erosion	5x3m	80%			A unit 20cm thick on clay
J41	^{2}9552 ^{64}3401	13	Gully	210m	Gully erosion	20x20m	40-60%	On ants nest, A unit & clay	Eroded	A unit <10cm thick on clay
J42	^{2}9567 ^{64}3402	16	Gully	205m	Ants nest	5x3m	90%	On nest	Very disturbed	A unit only
J43	^{2}9573 ^{64}3401	49	Gully	205m	Drain	40x7m	90%	On drain bank	Dug out	A unit wash
J44	^{2}9575 ^{64}3401	3	Gully	205m	Track	10x3m	90%	On track	Very worn	Buff silt
Assoc. J44			Hillslope	210-215m	Track	500x2-3m	60-80%			Dusty silt on gravelly clay

Table B13: Catchment Watersheds - artefact location and exposure data

Water-shed	Location	Grid reference	No. of finds	Height asl	Type of exposure	Extent *length x width*	Estimated visibility	Artefact context	Condition	Soils
A				265-270m	Track	400x5m	95%			Brown mixed A unit on clay
				285m	Sheet erosion	100x50m	60%			Gravelly clay
BC				240m	Track	200x2m	30-90%			Buff A unit on clay
				220m	Grassy area	50x5m	40%			Mixed
				225m	Grassy area	10x5m	40%			
				225m	Sheet erosion	2x1m	50%			A unit
				225m	Sheet erosion	3x1m	100%			Clay
BD	BD1	^{2}9606 ^{64}3060	1	270m	Gateway, track	15x15m	50%			Thin brown silt on orange clay
				270m	Track	150x3m	60%		A unit missing	Orange clay only
	BD2	^{2}9605 ^{64}3079	2	265m	Grassy area	20x20m	70%			Thin brown silt on clay
BE				270m	Track	150x3m	60%		Glass, brick etc	
				270m	Grassy area	15x10m	70%		A unit missing	Orange clay only
BI				295m	Grassy area	5x1m	90%			Silty A unit on brown clay
				290m	Grassy area	50x10m	10%		A unit missing	Thin A unit on orange clay
				290m	Grassy area	150x10m	30%		A unit missing	Thin A unit on orange clay
				285m	Track	60x30m	30%		A unit missing	Orange clay
				290m	Track	100x3m	10%		A unit missing	Orange clay
				315m	Track	150x2m	<2-30%			Minimal A unit; mostly clay
CD				230m	Track	200x1m	<20-80%			Loose dusty silt with slight clay
	CD1	^{2}9629 ^{64}3049	1	240m	Track	10x2m	95%		Trampled	Fine dusty buff A, some clay
				215-265m	Track	900x2m	95%			Fine dusty buff A, some clay
DE				195m	Track	150x2m	30%			A unit 2-3cm thick on clay
				205m	Track	150x10m	30%			A unit <3cm thick on clay
				210m	Track	50x1-4m	70%			A unit <15cm thick on clay
				195-205m	Track	200x10m	40%			A unit <3cm thick on clay
				230-240m	Track	350x0.6cm	0-80%			Remnant A unit on clay
EF				185m	Track	50x2m	20%			A unit <3cm on clay
	EF1	^{2}9885 ^{64}3150	1	180m	Track	10x3m	90%			Clay only
(Bluff 0.5km)	EF2	^{2}9902 ^{64}3150	1	180m	Track	10x3m	90%			Clay only
				175-180m	Track	200x3m	90%			Clay only
				220m	Track	50x10m	25%			A unit <5cm thick on clay
EH				225m	Feed area	8x6m	90%			Compact red-brown sand; sandstone bits
				230m	Dam	50x5m	20-40%			Mixed red-yellow sand & clay
				245m	Track	150x3m	80%			Grey A unit on red clay
FG	FG1	^{2}9846 ^{64}3268	1	225m	Track	10x2m	70-100%			Mixed A unit and clay
				200-225m	Track	460x2m	70-100%			Mixed A unit and clay
				225-230m	Track	70x1-2m	80-90%		Ploughed	Mixed A unit and clay
	FG2	^{2}9825 ^{64}3273	1	230m	Track	250x1-3m	90%	Track surface	Ploughed	Mixed A unit and clay
	FG3	^{2}9829 ^{64}3275	2	230m	Track	2x2m	90%	On A unit		Very compact A unit with gravels
Assoc. FG3				230m	Track	100x2m	90%			
				200m	Track	200x2m	90%			Buff A unit 10cm thick on clay
FH				230m	Ants nests (x2)	4x2m (x2)	90%			Fine gravels & pellets
				230m	Ants nest	3x2m	90%			Fine gravels & pellets
GH				210m	Grassy area	80x80m	35%			Silt 2-3cm thick on clay
HI	HI1	^{2}9765 ^{64}3417	1	195m	Track	60x3m	80%		Ploughed	Thin A unit on clay
IJ				255m	Track	150x2m	30%			A unit <5cm thick on clay
				225-240m	Track	500x2m	30%			Thin brown soil

Map 10: Artefact locations on composite Muswellbrook & Aberdeen 1:25,000 scale map sheets



APPENDIX C:

DESCRIPTIONS OF LOCATIONS

WITH ARTEFACT CONCENTRATIONS

This appendix provides more detailed descriptions of more substantial artefact locations (which might be called "sites") to complement the summary statistics given in Appendix B.

National Parks and Wildlife Service site forms have been prepared for these substantial sites, or complexes of locations where it is considered that exposed artefacts might be linked by archaeological deposits. In keeping with usual procedures NPWS site forms have not been completed for very sparse or "isolated" finds.

NPWS site forms:

Location/complex	AMG grid reference
A1-A4	2 9350 64 2911
A7-A8	2 9385 64 2897
A33-A34	2 9404 64 2907
B21	2 9448 64 3123
B22	2 9441 64 3089
B23	2 9513 64 3102
B32	2 9495 64 2986
B36	2 9496 64 2938
B29	2 9516 64 3047
C1	2 9704 64 2919
C5	2 9665 64 2942
C20	2 9648 64 2893
E2	2 9625 64 3140
E4	2 9650 64 3145
E6-E12	2 9690 64 3160
E19	2 9774 64 3149
E22	2 9862 64 3100
F7-F8	2 9861 64 3226
H6	2 9829 64 3411
I1-I3	2 9540 64 3180
I4, I17-I27	2 9550 64 3260
I5	2 9590 64 3240
I14	2 9493 64 3251
I37	2 9634 64 3325
I42	2 9697 64 3390
IJ1-10	2 9690 64 3440
J4	2 9477 64 3306
J19-J35	2 9560 64 3375
J41	2 9552 64 3401
J42-J44	2 9567 64 3402

MT PLEASANT SITE RECORDING FORM

Site name: **A1-A4** NPWS # Recorded by: E Rich, B.French Date: 25.5.94

Map Name: Muswellbrook Scale: 1:25,000 Grid reference: $^{2}9350$ $^{64}2911$

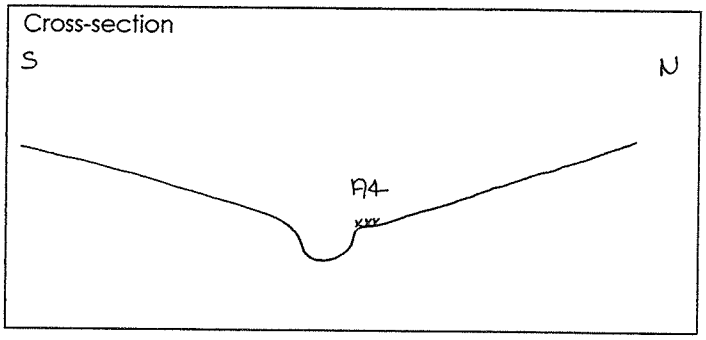
County: Brisbane Parish: Ellis Portion No: 142

Landform: Upper gully

Soils & geomorphology: Thin buff A unit generally <10cm thick.

Land use/condition: Hillslopes ploughed; narrow strip beside gully not ploughed.

Cross-section



Type of exposure: Gully erosion, dam, contour drain

Extent of exposure: c.500m long c.1-20m wide c.1-3m deep

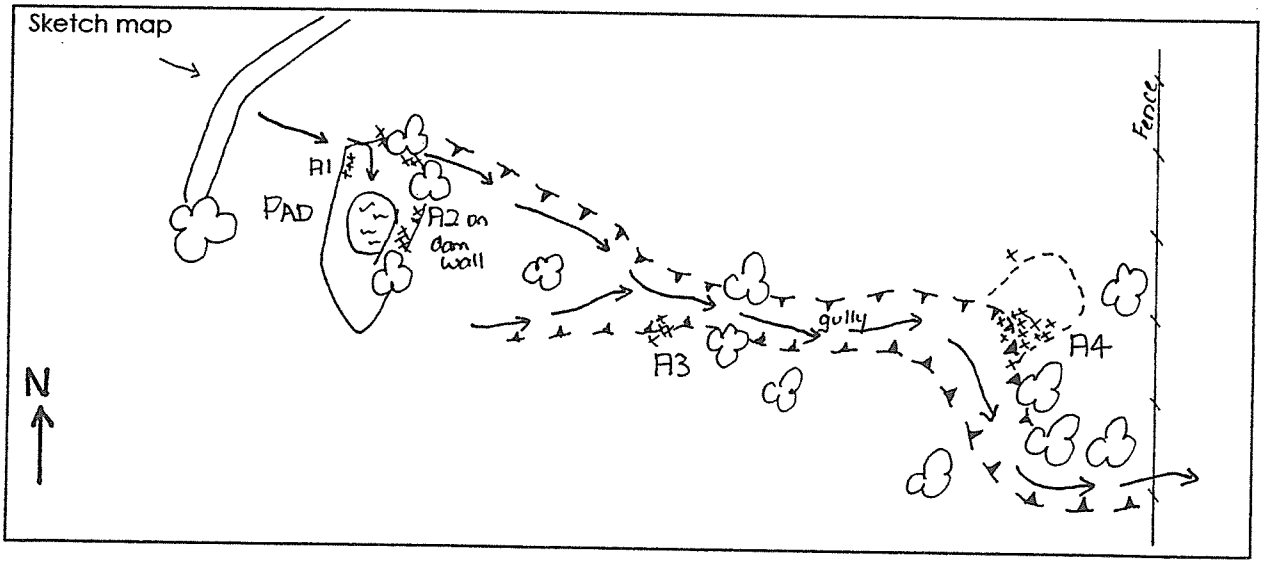
Extent of finds: total 60m long 2-20m wide Extent of PAD: c.200m long 5m wide

No of recorded artefacts: 41 Artefact types include: pebble tool, axe, RU pieces, debitage

Spatial structure of finds: Artefacts occur in four spatially discrete locations, indicating separate activity areas which might be indicative of separate occupation events.

Describe features: A3 had a few orange indurated mudstone artefacts from a single knapping event.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **A7-A8** NPWS # Recorded by: E Rich, B.French Date: 25.5.94

Map Name: Muswellbrook Scale: 1:25,000 Grid reference: $^{2}9385$ $^{64}2897$

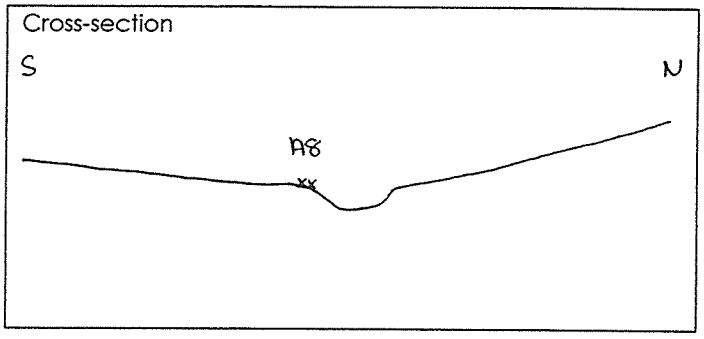
County: Brisbane Parish: Ellis Portion No: 14

Landform: Upper-middle reaches of gully

Soils & geomorphology: Thin buff A unit generally 20cm thick at A8; thinner at A7.

Land use/condition: Hillslopes ploughed; narrow strip beside gully might not be ploughed. Track crosses location A8.

Cross-section



Type of exposure: Gully erosion, track.

Extent of exposure: c.150m long c.1-10m wide c.1m deep

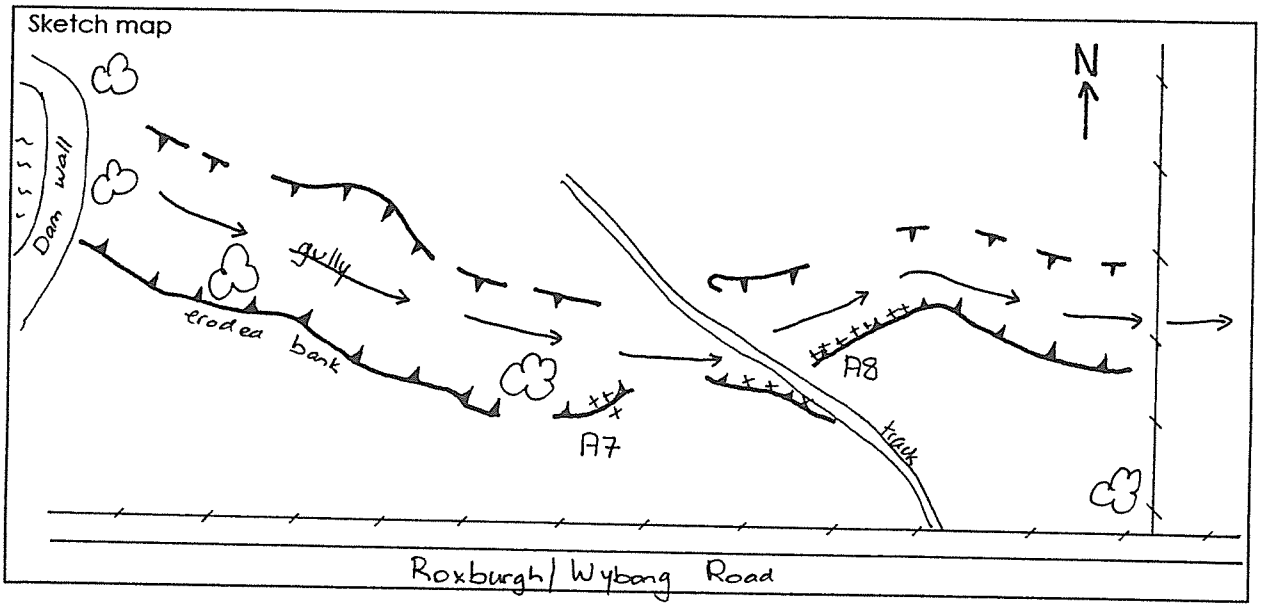
Extent of finds: c.150m long 1m wide Extent of PAD: c.150m long 5m wide

No of recorded artefacts: 12 Artefact types include: one RU flake, debitage

Spatial structure of finds: Artefacts probably form a continuous scatter along the bank of the gully.

Describe features: None observed.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **A33-A34** NPWS # Recorded by: E Rich Date: 20.4.95

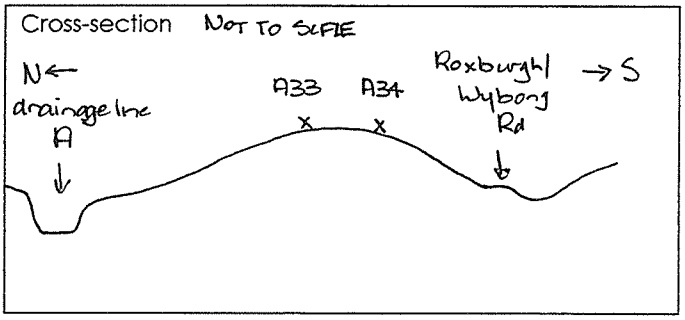
Map Name: Muswellbrook Scale: 1:25,000 Grid reference: A33 ^{2}9404 ^{64}2907 and
A34 ^{2}9403 ^{64}2903

County: Brisbane Parish: Ellis Portion No: 136

Landform: Over top of spur

Soils & geomorphology: Ploughed A unit.

Land use/condition: Paddock ploughed Artefacts exposed on graded track. Two concentrations visible, but appear horizontally dispersed and artefacts broken.



Type of exposure: Graded track. Visibility: 80-90%

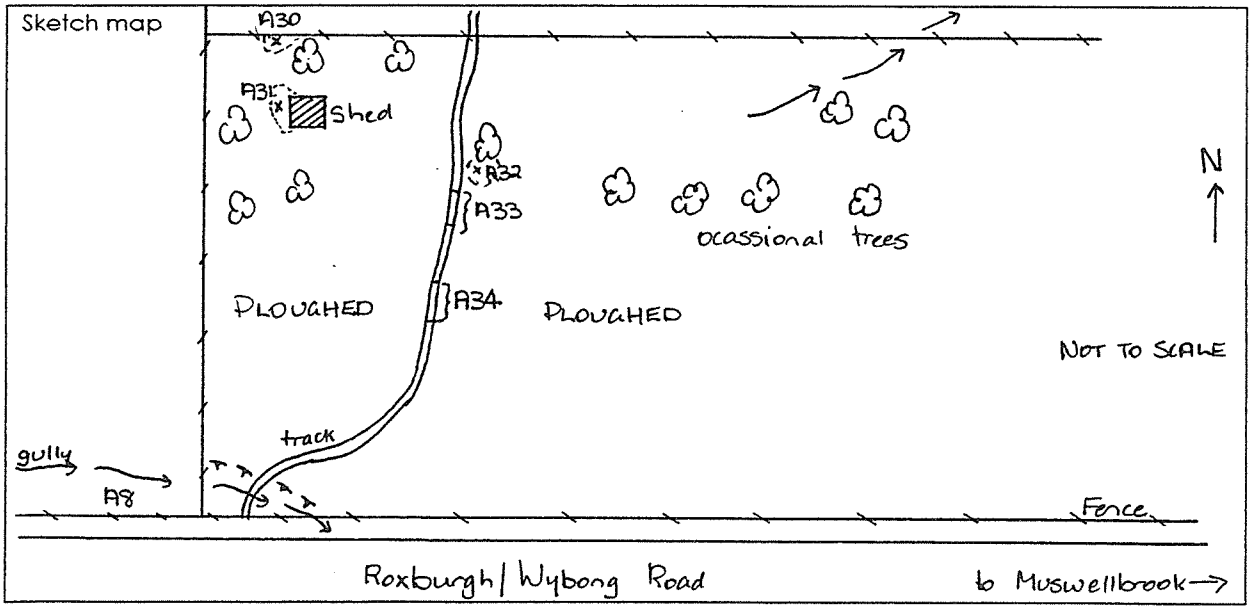
Extent of exposure: c.200m long c.2-3m wide 10-20cm deep

Extent of finds: A33: 20m long 3m wide Extent of PAD: 0m long 0m wide
A34: 12m long 2m wide

No of recorded artefacts: 60 & 19 Artefact types include: debitage only

Spatial structure of finds: Two concentrations of finds, c.30m apart.

Describe features: Artefacts probably form two discrete knapping events; A33 of silcrete and A34 of indurated mudstone.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **B21** NPWS # Recorded by: J.Klaver, P.Saunders Date: 25.5.94

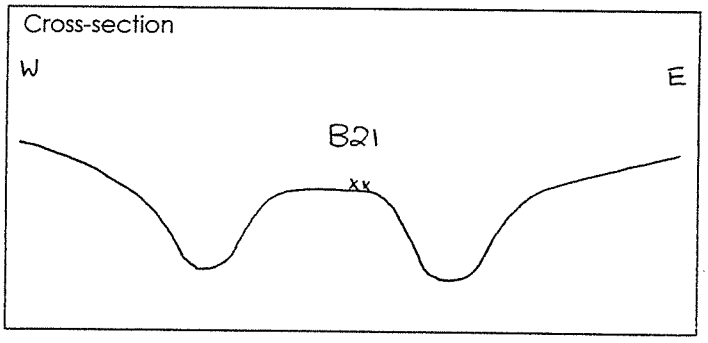
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9448$ $^{64}3123$

County: Brisbane Parish: Ellis Portion No: 145

Landform: Upper gully - confluence

Soils & geomorphology: Thin buff A unit c.10-15cm thick on red clay.

Land use/condition: Previously cleared; now grazing & regenerating woodland.



Type of exposure: Sheet erosion across spur, ants nest

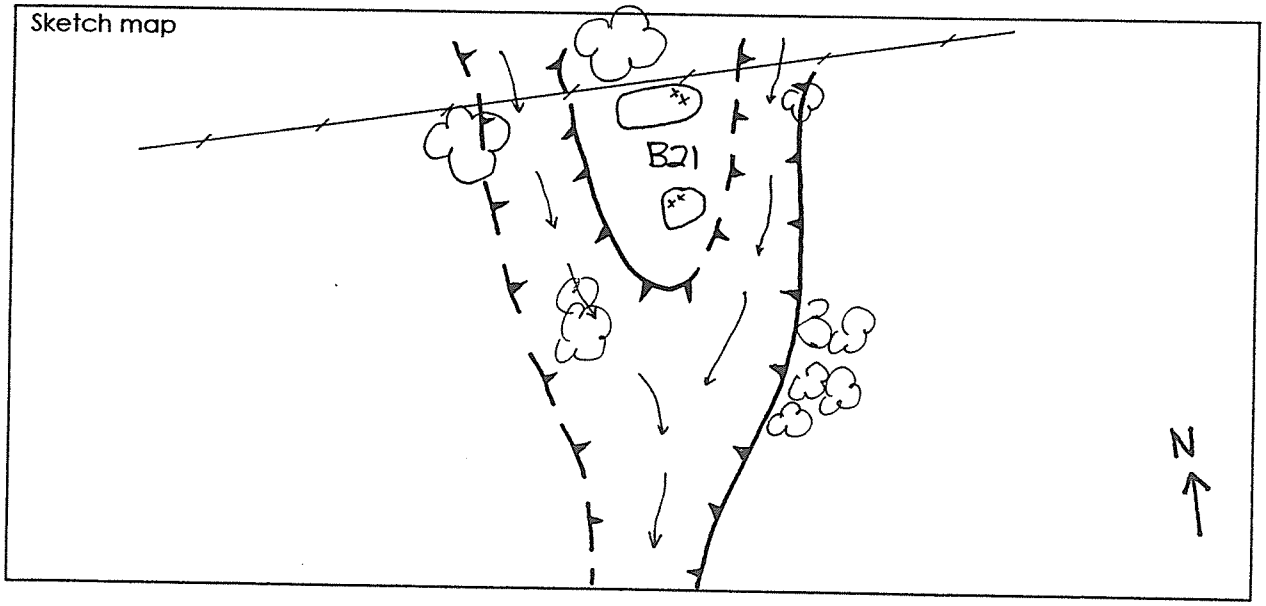
Extent of exposure: 20m long 4m wide c.10-15cm deep
9m long 6m wide

Extent of finds: 10x2m 3x3m Extent of PAD: c.40m long 30m wide

No of recorded artefacts: 4 Artefact types include: 3 cores, one other piece

Spatial structure of finds: Artefacts occur in two locations. Potential for further sparse scatter of finds.

Describe features: No features.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: B22 NPWS # Recorded by: J.Klaver, P.Saunders Date: 25.5.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9441$ $^{64}3089$

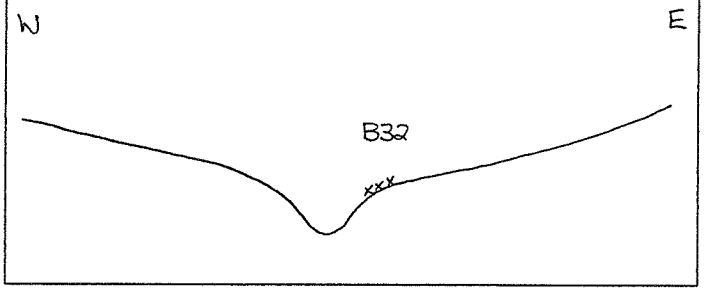
County: Brisbane Parish: Ellis Portion No: 145

Landform: Upper gully

Soils & geomorphology: A unit very thin to absent. Artefacts on clay.

Land use/condition: Previously cleared, possibly ploughed; now used for grazing.

Cross-section



Type of exposure: Gully erosion

Extent of exposure: 40m long 15m wide ?m deep

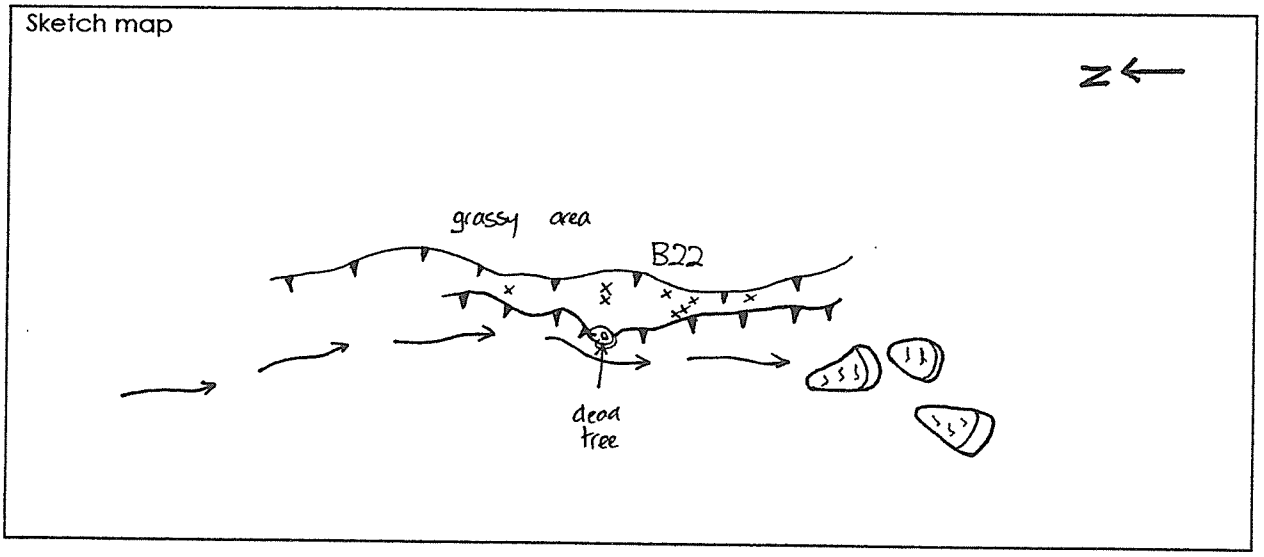
Extent of finds: 30m long ?m wide Extent of PAD: 0m long 0m wide

No of recorded artefacts: 8 Artefact types include: 2 cores, debitage

Spatial structure of finds: Artefacts scattered along the bank of the gully.

Describe features: No features.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **B23** NPWS # Recorded by: J.Klaver, R.Stocks Date: 26.5.94

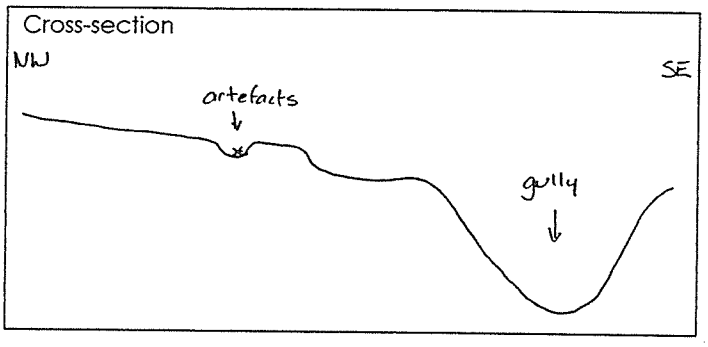
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9513$ $^{64}3102$

County: Brisbane Parish: Ellis Portion No: 259

Landform: Upper gully

Soils & geomorphology: A unit very thin to absent.

Land use/condition: Previously cleared, possibly ploughed; now used for grazing.



Type of exposure: Gully erosion, stock track.

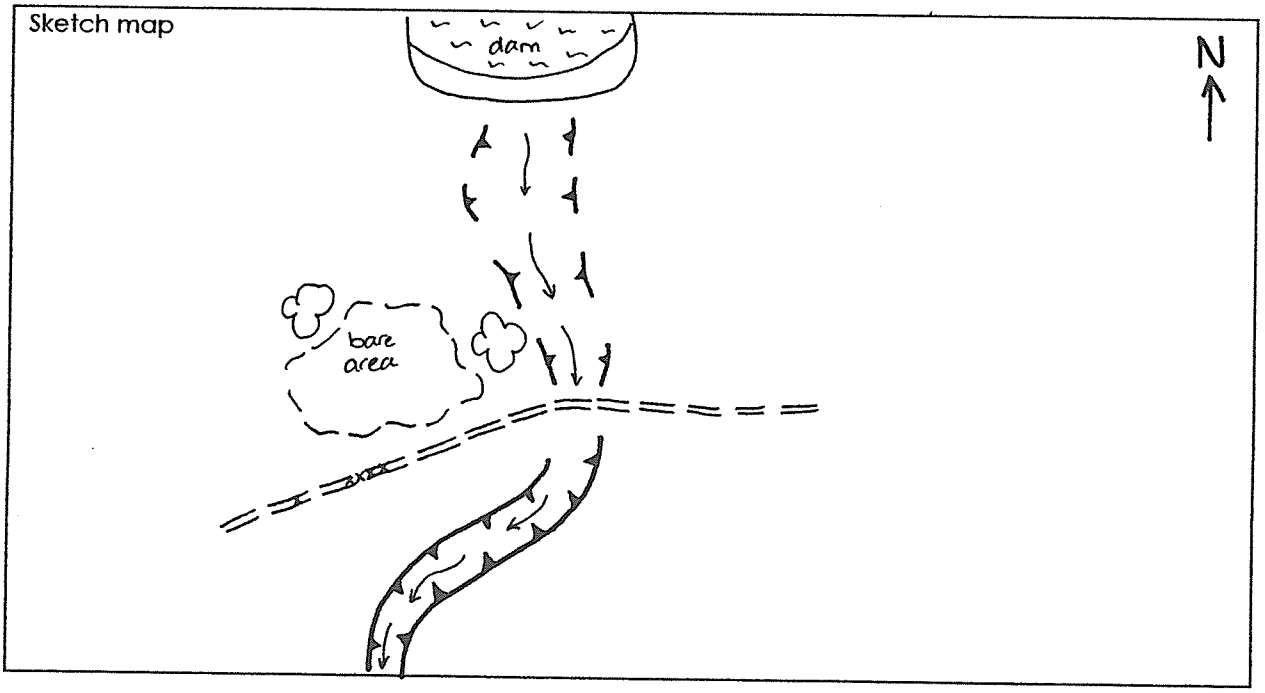
Extent of exposure: 300m long 20cm wide ?m deep

Extent of finds: 5m long 20cm wide Extent of PAD: 0m long 0m wide

No of recorded artefacts: 5 Artefact types include: 1 core, debitage

Spatial structure of finds: Artefacts clustered on cattle track.

Describe features: No features.



Report: Rich, E. 1995 Mt Pleasant Coal Lease: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **B29** NPWS # Recorded by: J.Klaver, R.Stocks Date: 26.5.94

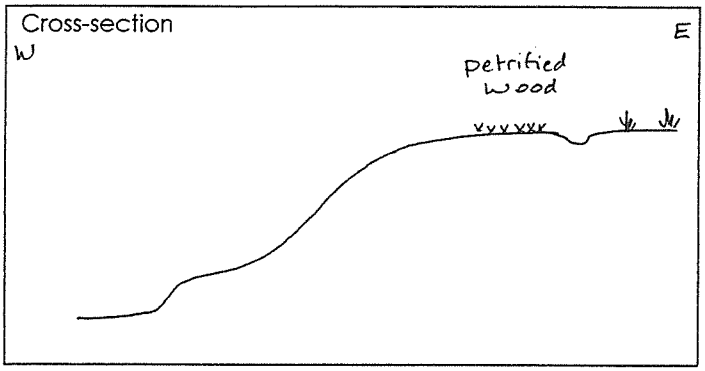
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9516$ $^{64}3047$

County: Brisbane Parish: Ellis Portion No: 275

Landform: Upper-middle reaches of gully.

Soils & geomorphology: A unit on clay. Below gently sloping hill.

Land use/condition: Previously cleared, creek margins not ploughed. Now used for grazing.



Type of exposure: Gully erosion, stock track.

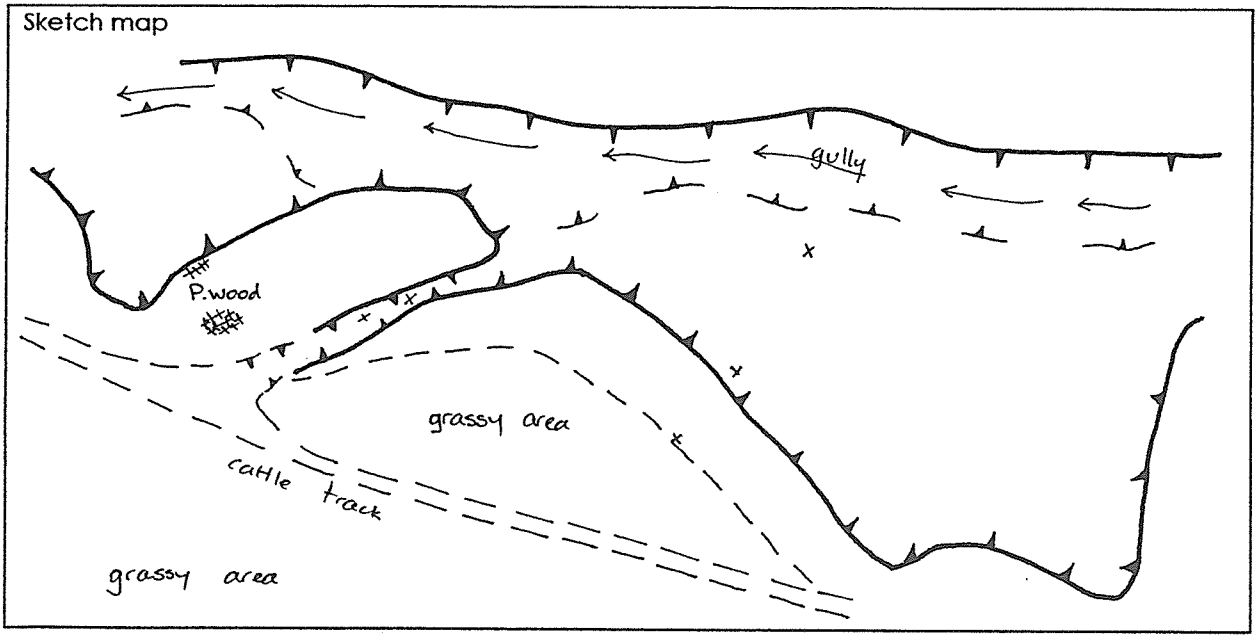
Extent of exposure: 10m long 4m wide 3m deep

Extent of finds: 10m long 1.5m wide Extent of PAD: B29-B35 inclusive: 1100m x 400-900m

No of recorded artefacts: 46 Artefact types include: 1 core, debitage

Spatial structure of finds: Petrified wood artefacts clustered on bank; other finds scattered.

Describe features: Possible heat treatment of petrified wood with most artefacts of that material in 1x1m area.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **B32** NPWS # Recorded by: J.Klaver, R.Stocks Date: 26.5.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9495$ $^{64}2986$

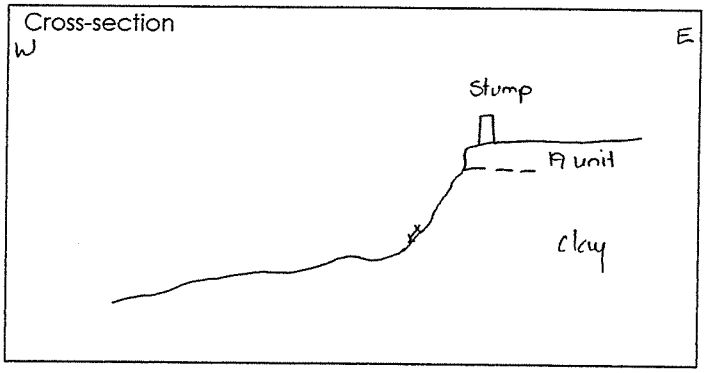
County: Brisbane Parish: Ellis Portion No: 274

Landform: Middle reaches of gully.

Soils & geomorphology: A unit 20cm thick on clay.

Land use/condition: Previously cleared, does not appear to have been ploughed. Now used for grazing.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: 35m long 4m wide 2m deep

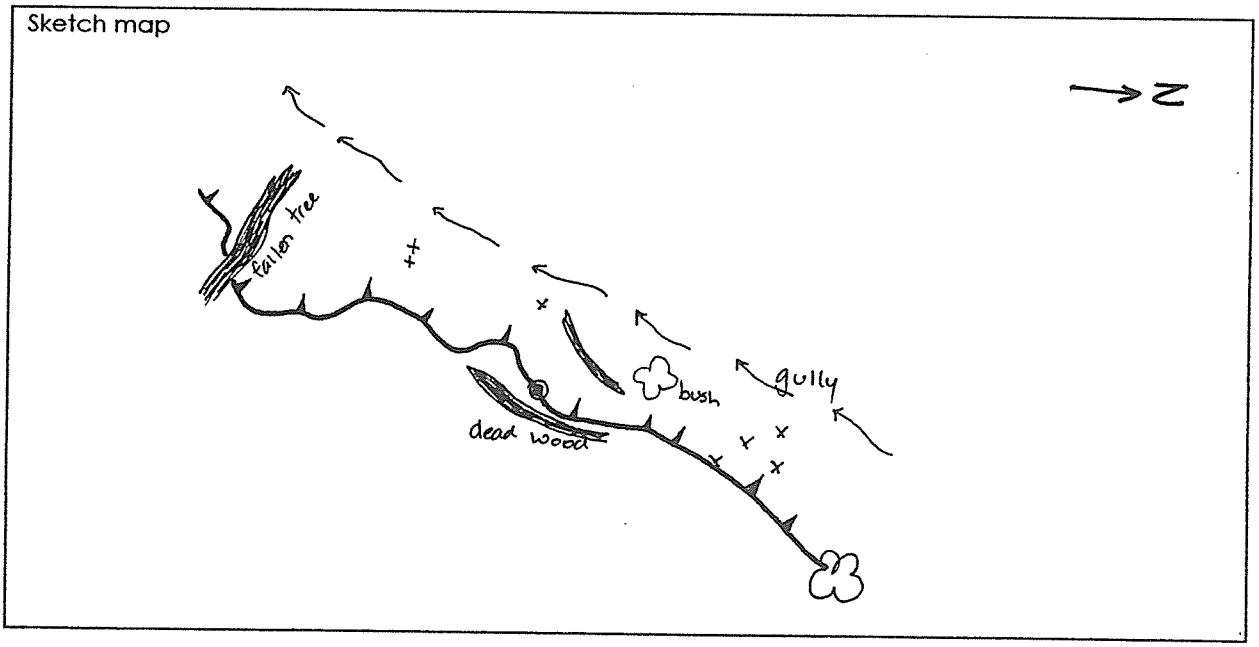
Extent of finds: 15m long 2m wide Extent of PAD: B29-B35 inclusive: 1100m x 400-900m

No of recorded artefacts: 8 Artefact types include: Debitage

Spatial structure of finds: Generally scattered.

Describe features: None identified.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **B36** NPWS # Recorded by: R.Stocks, P.Saunders Date: 30.5.94

Map Name: Muswellbrook Scale: 1:25,000 Grid reference: $^{2}9496$ $^{64}2938$

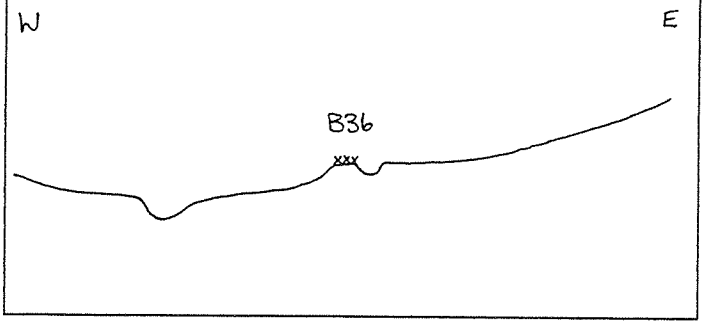
County: Brisbane Parish: Ellis Portion No: 8

Landform: Middle reaches of gully.

Soils & geomorphology: A unit 20cm thick on clay. Artefacts on/embedded in ants nest.

Land use/condition: Previously cleared, possibly ploughed. Now used for grazing.

Cross-section



Type of exposure: Gully erosion, ants nest.

Extent of exposure: 10m long 3m wide 0.5m deep

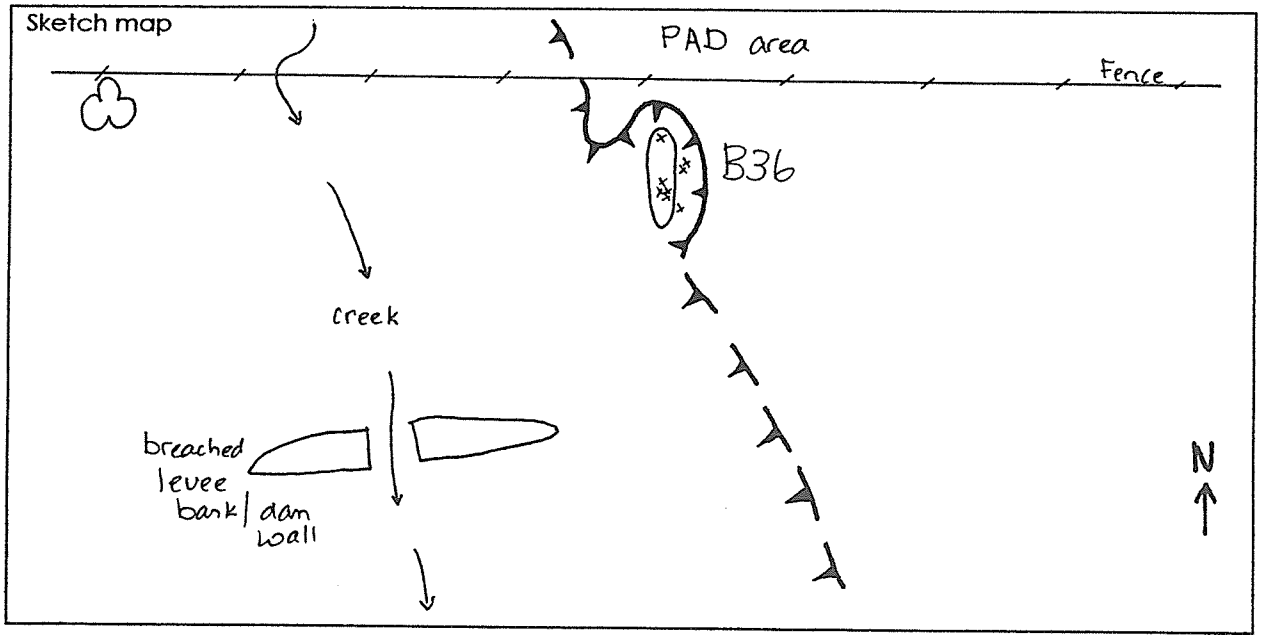
Extent of finds: 4m long 1.5m wide Extent of PAD: none

No of recorded artefacts: 8 Artefact types include: Debitage, 2 RU pieces

Spatial structure of finds: Clustered on ants nest.

Describe features: Possibly an indurated mudstone knapping event.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: C1 NPWS # Recorded by: E. Rich, Jill Ruig Date: 26.5.94

Map Name: Muswellbrook Scale: 1:25,000 Grid reference: $^{2}9704$ $^{64}2919$

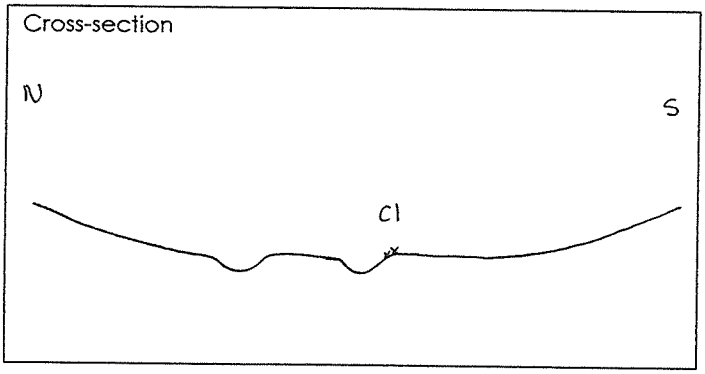
County: Brisbane Parish: Ellis Portion No:
T/L easement; stock route

Landform: Mid-reaches of gully

Soils & geomorphology: Fairly flat. A unit 20cm thick on clay. Some artefacts *in situ* in A unit.

Land use/condition: Previously cleared, gully bank possibly not ploughed.

Cross-section



Type of exposure: Gully erosion

Extent of exposure: 18m long 2m wide 70cm deep

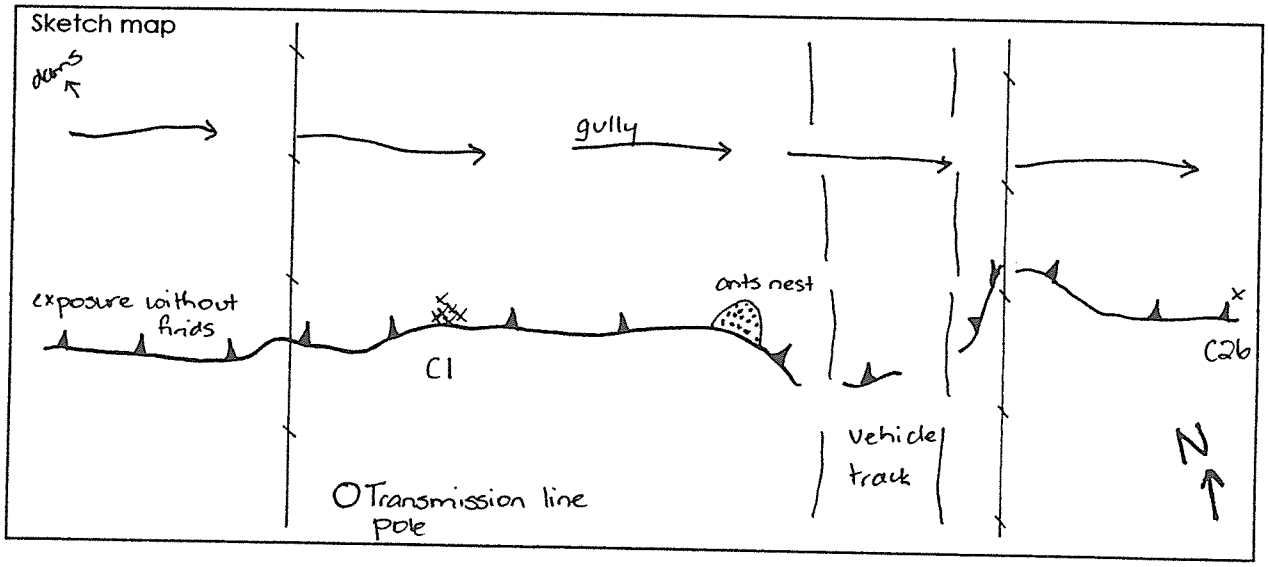
Extent of finds: 1m long 1m wide Extent of PAD: ? 50m long 10-12m wide

No of recorded artefacts: 13 Artefact types include: Debitage

Spatial structure of finds: Artefacts clustered at a single location along bank of gully. Only one find on adjacent exposures.

Describe features: Silcrete knapping floor; appears to be an isolated event.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **C5** NPWS # Recorded by: E. Rich, Jill Ruig Date: 26.5.94

Map Name: Muswellbrook Scale: 1:25,000 Grid reference: $^{2}9665$ $^{64}2942$

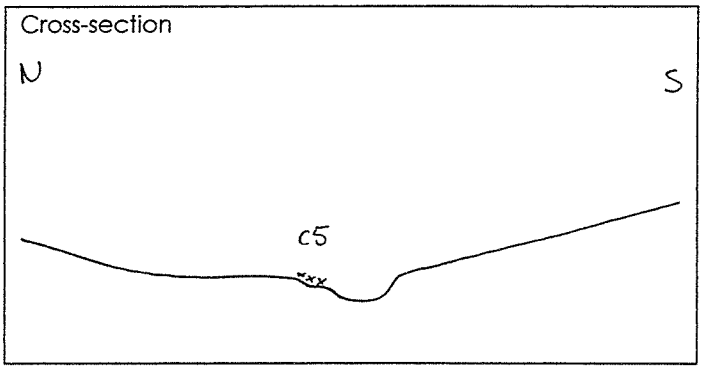
County: Brisbane Parish: Ellis Portion No: 279

Landform: Mid-reaches of gully

Soils & geomorphology: A unit 20cm thick on clay. Some artefacts *in situ* in A unit. Mapped as hillslope soils.

Land use/condition: Previously cleared, gully bank not ploughed.

Cross-section



Type of exposure: Gully erosion

Extent of exposure: 30m long 4m wide 50-70cm deep

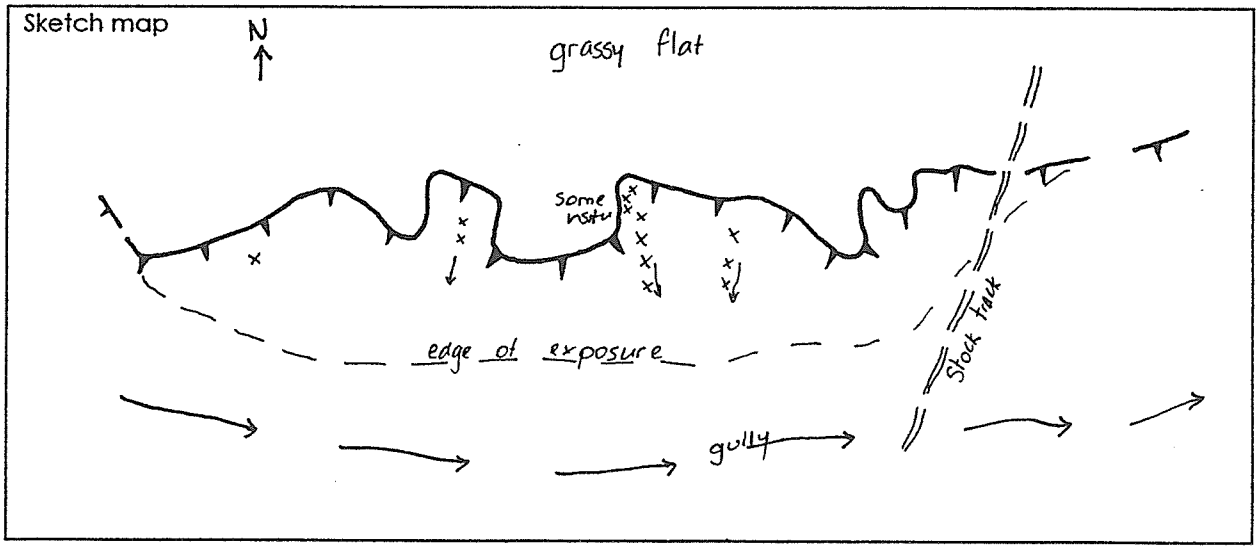
Extent of finds: 8m long 2m wide Extent of PAD: ?650m long 100m wide

No of recorded artefacts: 13 Artefact types include: Debitage, elongate flakes.

Spatial structure of finds: Artefacts spread along exposure but *in situ* finds clustered within 1m section of gully bank. Very sparse finds on adjacent exposures.

Describe features: Silcrete knapping floor; appears to be isolated.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **C20** NPWS # Recorded by: Jill Ruig, Barry French Date: 30.5.94

Map Name: Muswellbrook Scale: 1:25,000 Grid reference: $^{2}9648$ $^{64}2893$

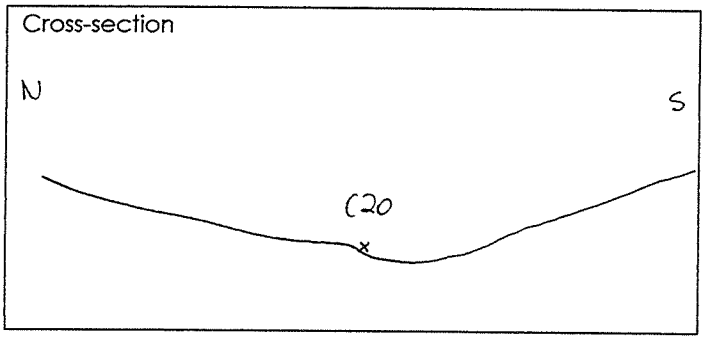
County: Brisbane Parish: Ellis Portion No: PPBoard

Landform: Mid-reaches of gully

Soils & geomorphology: A unit 1-2cm thick on clay.

Land use/condition: Previously cleared, tree stumps, but gully bank ploughed ?.

Cross-section



Type of exposure: Gully erosion

Extent of exposure: 60m long 2m wide 50-70cm deep

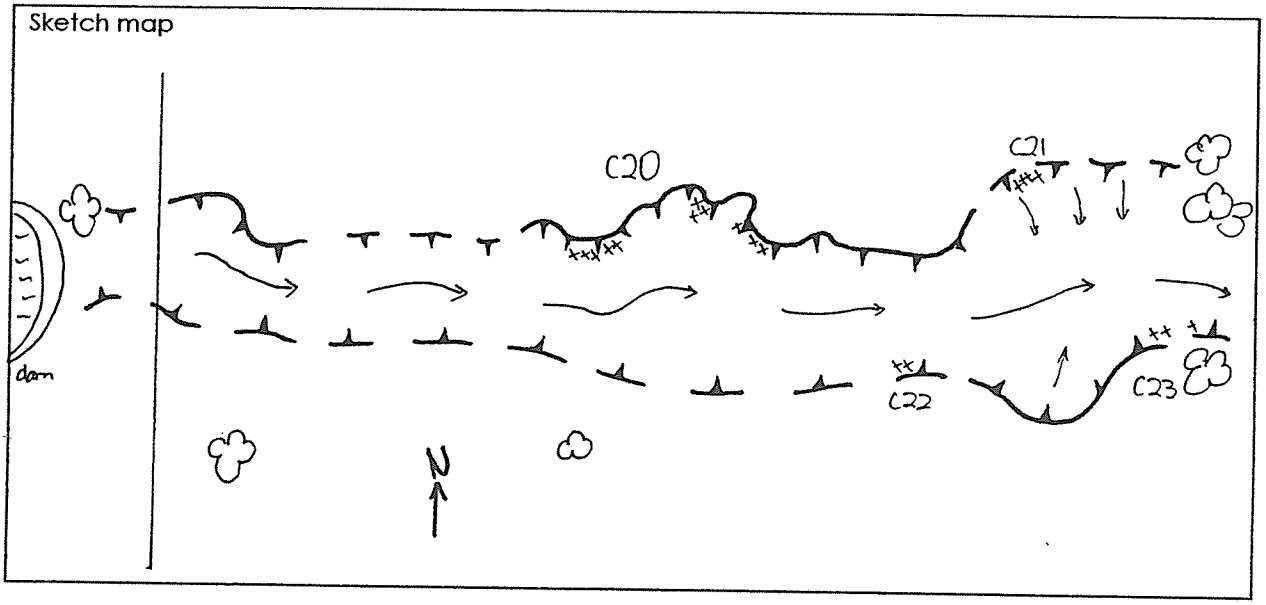
Extent of finds: 30m long 1.5m wide Extent of PAD: 0m long 0m wide

No of recorded artefacts: 17 Artefact types include: Debitage.

Spatial structure of finds: Artefacts scattered along exposure.

Describe features: None identified.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: E2 NPWS # Recorded by: J.Klaver, E.Rich Date: 27.5.94

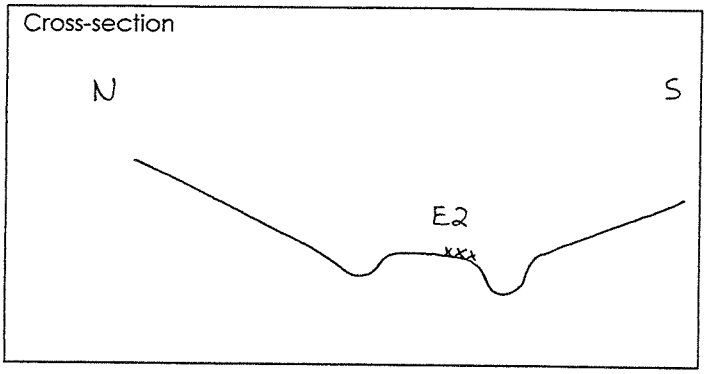
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9625$ $^{64}3140$

County: Brisbane Parish: Ellis Portion No: 271

Landform: Upper reaches of gully.

Soils & geomorphology: A unit c.20^{+}cm thick on clay.

Land use/condition: Previously cleared, now regenerating; may not have been ploughed. Now used for grazing.



Type of exposure: Mostly shallow sheet erosion.

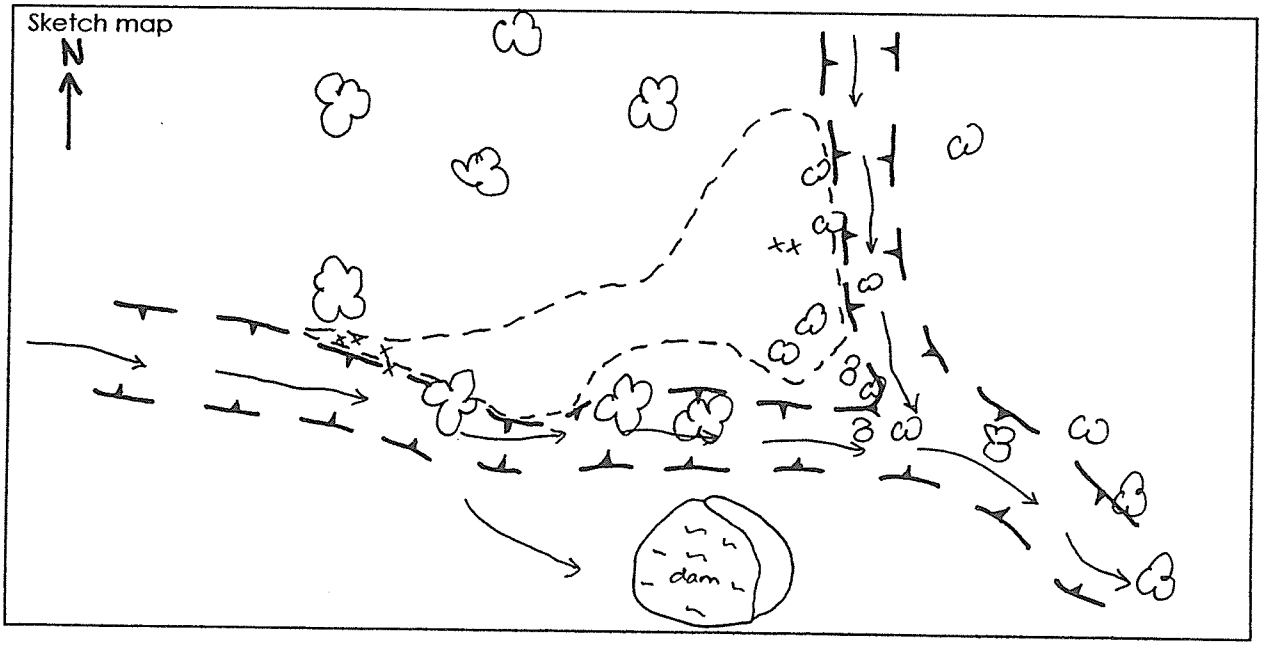
Extent of exposure: 50m long 50m wide <10cm deep

Extent of finds: 30m long c.2m wide Extent of PAD: 100m long 50m wide

No of recorded artefacts: 6 Artefact types include: Debitage, and possible core embedded

Spatial structure of finds: Generally scattered.

Describe features: None identified. Note that more artefacts are likely to be present.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: E4 NPWS # Recorded by: J.Klaver, E.Rich Date: 27.5.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9650$ $^{64}3145$

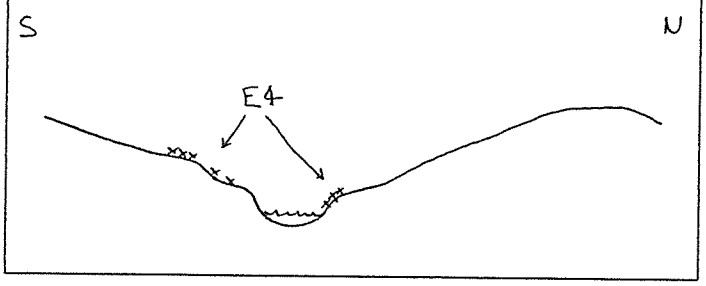
County: Brisbane Parish: Ellis Portion No: 271-272

Landform: Upper-middle reaches of gully.

Soils & geomorphology: A unit c.20^{+}cm thick on clay.

Land use/condition: Previously cleared, now used for grazing. Dug out for dam.

Cross-section



Type of exposure: Some shallow sheet erosion and gullying along excavation of dam sides.

Extent of exposure: 200m long 3-4m wide c.3m deep

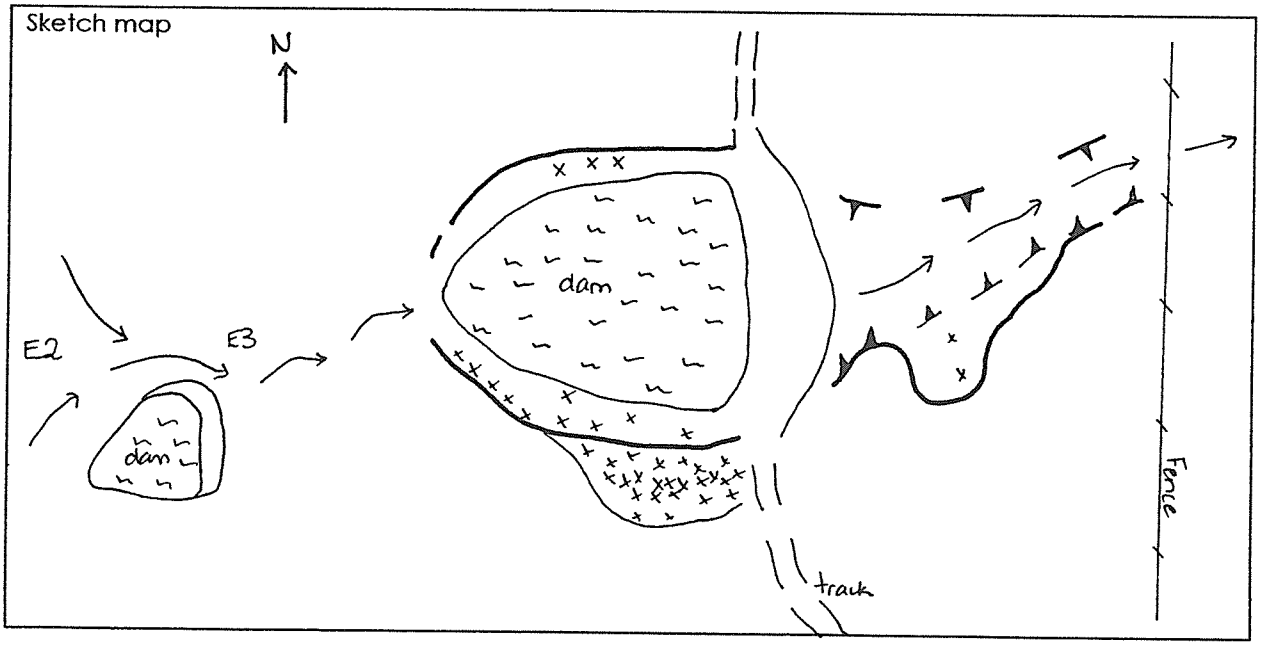
Extent of finds: 200m long 3-5m wide Extent of PAD: each bank 100m long c.20m wide

No of recorded artefacts: 44 Artefact types include: Debitage, 2 pebble tools, 5 cores, 1 RU

Spatial structure of finds: Generally scattered.

Describe features: None identified. Note that more artefacts are likely to be present.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **E11** NPWS # Recorded by: R. Stocks, Huw Barton Date: 1.6.94

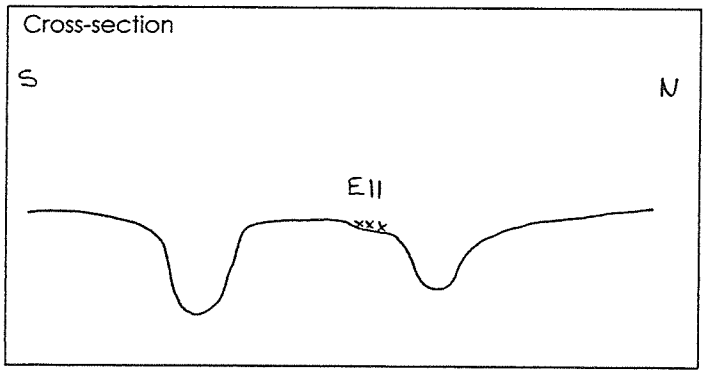
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9705$ $^{64}3172$

County: Brisbane Parish: Ellis Portion No: 90 & 273

Landform: Alluvial flat/gully confluence.

Soils & geomorphology: Brown silt A_1 horizon 5cm thick, on A_2 horizon 10-20cm thick on clay.

Land use/condition: Previously cleared, now regenerating. Used for grazing.



Type of exposure: Gully erosion.

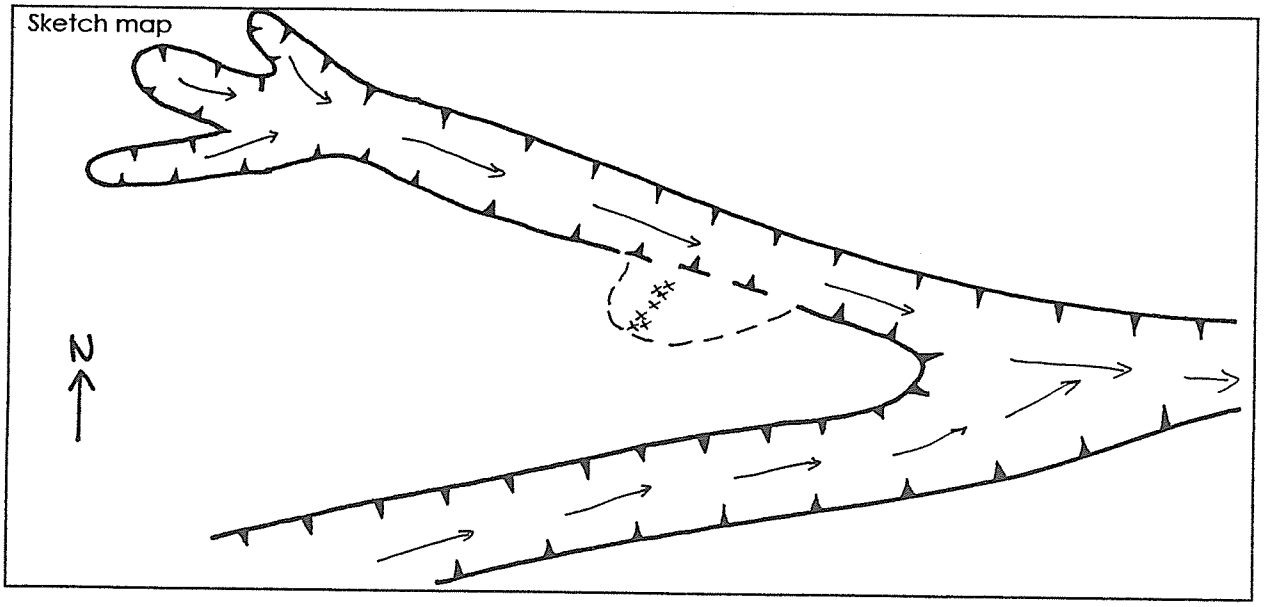
Extent of exposure: 10m long 4m wide 1-4m deep

Extent of finds: 4m long 1m wide Extent of PAD: with E6-E13: 700m long 200m wide

No of recorded artefacts: 7 at E11 Artefact types include: 1 core, debitage

Spatial structure of finds: Clustered.

Describe features: All of silcrete.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **E12** NPWS # Recorded by: R. Stocks, Huw Barton Date: 1.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9713$ $^{64}3146$

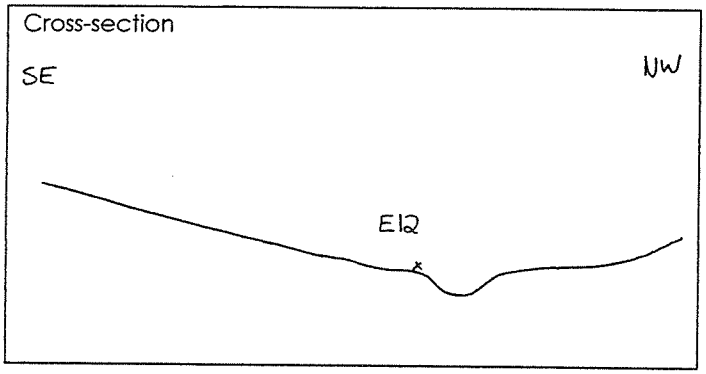
County: Brisbane Parish: Ellis Portion No: 273

Landform: Gully.

Soils & geomorphology: Brown silt A_1 horizon 5-10cm thick, on A_2 horizon 25cm thick on clay.

Land use/condition: Previously cleared, now regenerating. Used for grazing.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: 10m long 4m wide 1.5m deep

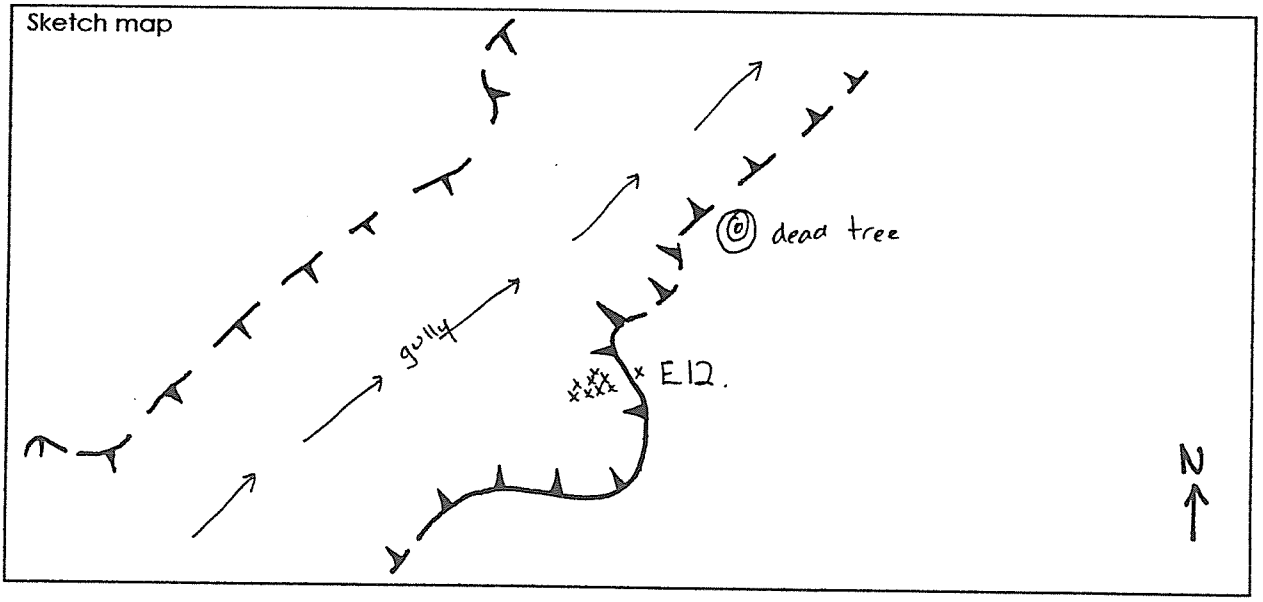
Extent of finds: 2m long 0.5m wide Extent of PAD: with E6-E13: 700m long 200m wide

No of recorded artefacts: 8 at E12 Artefact types include: 1 core, debitage

Spatial structure of finds: Clustered.

Describe features: Petrified wood knapping event.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **E19** NPWS # Recorded by: R. Stocks, P. Saunders Date: 27.5.94

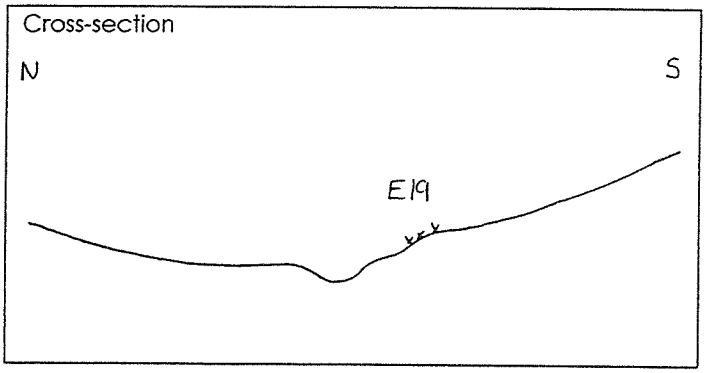
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9774$ $^{64}3149$

County: Brisbane Parish: Ellis Portion No: 21

Landform: Alluvial valley floor.

Soils & geomorphology: A unit on clay; plough zone visible in photo.

Land use/condition: Previously cleared, probably ploughed, now used for grazing.



Type of exposure: Gully erosion.

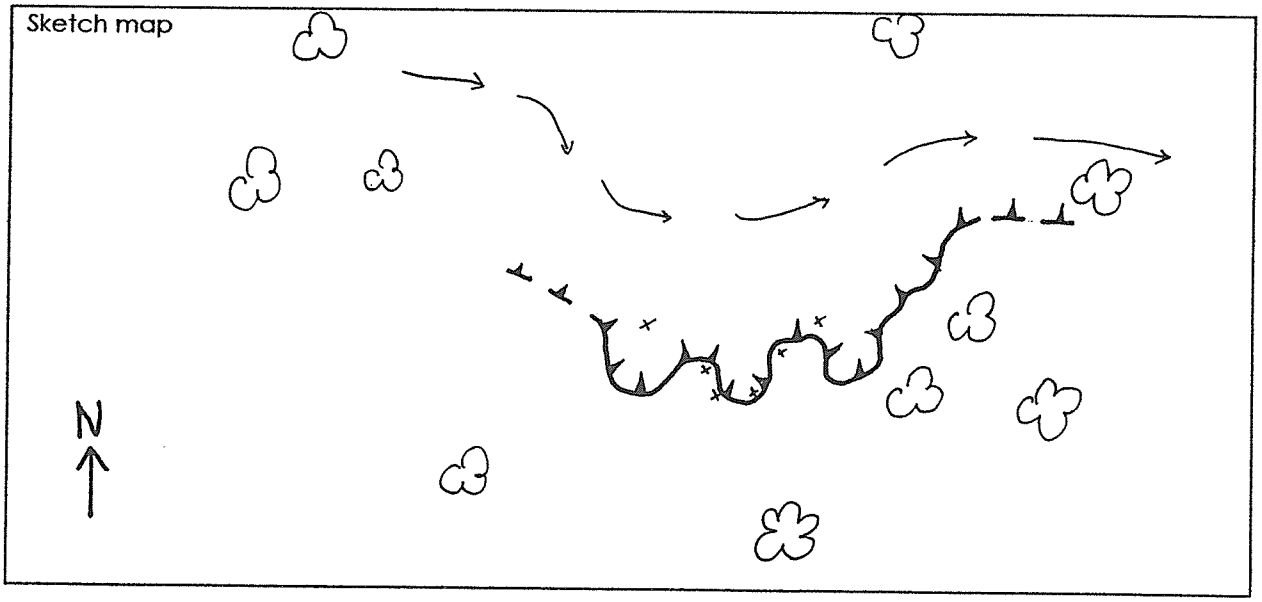
Extent of exposure: 20m long 7m wide to clay deep

Extent of finds: 7m long 4m wide Extent of PAD: 0m long 0m wide

No of recorded artefacts: 6 Artefact types include: 1 basalt core, debitage

Spatial structure of finds: Dispersed. Two artefacts on bank, 3 on erosion face, 1 on floor.

Describe features: None.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: E22 NPWS # Recorded by: R. Stocks, P. Saunders Date: 27.5.94

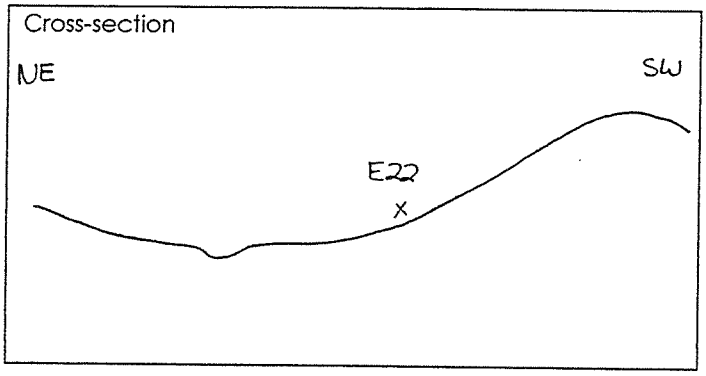
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9862$ $^{64}3100$

County: Brisbane Parish: Ellis Portion No: 21

Landform: Hillslope.

Soils & geomorphology: Remnant A unit on clay.

Land use/condition: Previously cleared, probably ploughed, now used for grazing. 1:25k map shows hut & yards in vicinity.



Type of exposure: Track with sheet erosion.

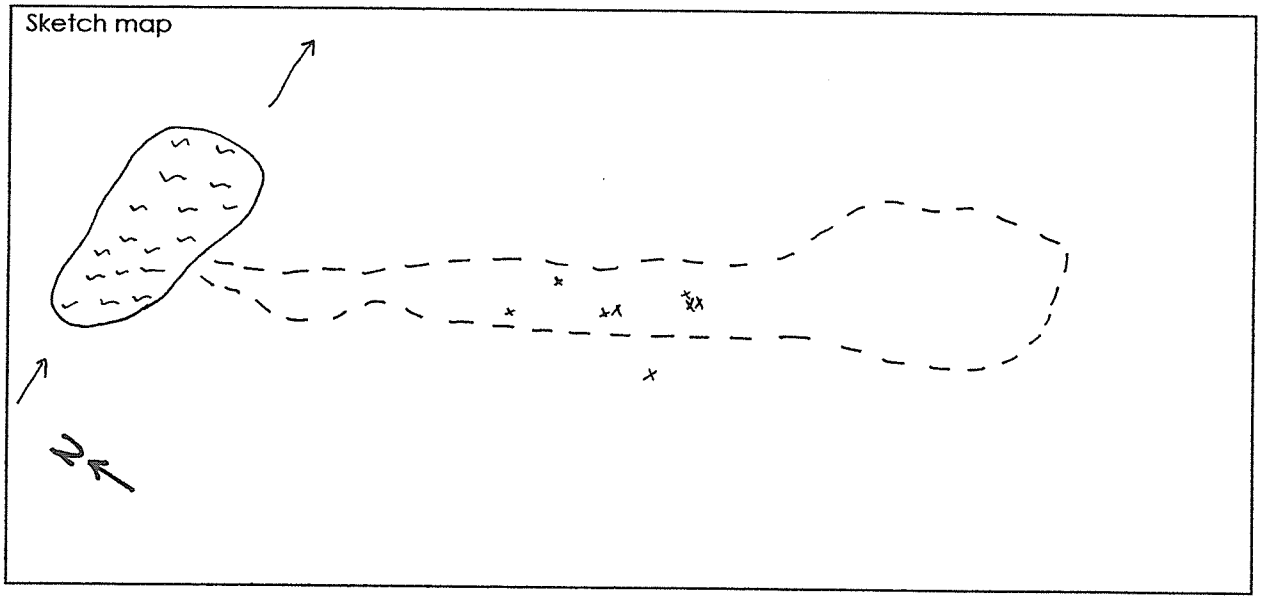
Extent of exposure: 100m long 1-10m wide to clay deep

Extent of finds: c.20m long 1-10m wide Extent of PAD: 0m long 0m wide

No of recorded artefacts: 8 Artefact types include: 1 core, 2 RU flakes, debitage

Spatial structure of finds: Minor clustering due to slope wash.

Describe features: Possibly dispersed knapping event of cream indurated mudstone - possibly porcellanite.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **F7-F8** NPWS # Recorded by: R.Stocks, P.Saunders Date: 30.5.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9861$ $^{64}3226$

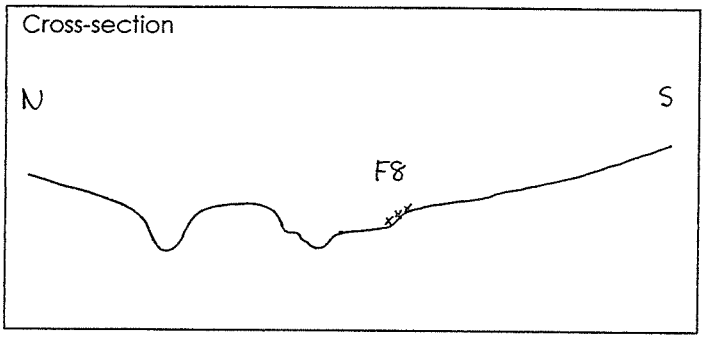
County: Brisbane Parish: Ellis Portion No: 54

Landform: Upper reaches of gully.

Soils & geomorphology: Hillslope soils. A unit c.20cm thick on clay.

Land use/condition: Previously cleared, possibly ploughed. Now used for grazing. F8 trampled.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: F7 100m long 15m wide deep
F8 70m long 2-15m wide

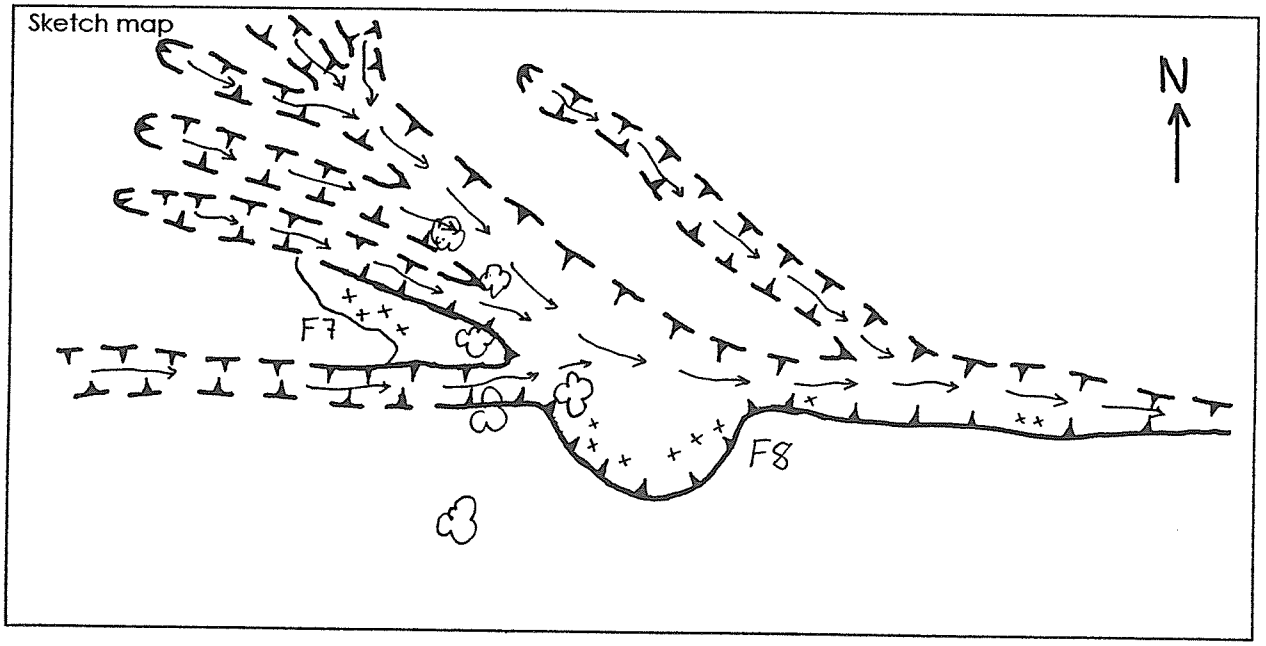
Extent of finds: F7 30m long 15m wide Extent of PAD: none
F8 20m long 15m wide 100m long 10m wide

No of recorded artefacts: 4 & 8 Artefact types include: Debitage, cores.

Spatial structure of finds: Scattered.

Describe features: None observed.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **H6** NPWS # Recorded by: R.Stocks, B. French Date: 31.5.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9829$ $^{64}3411$

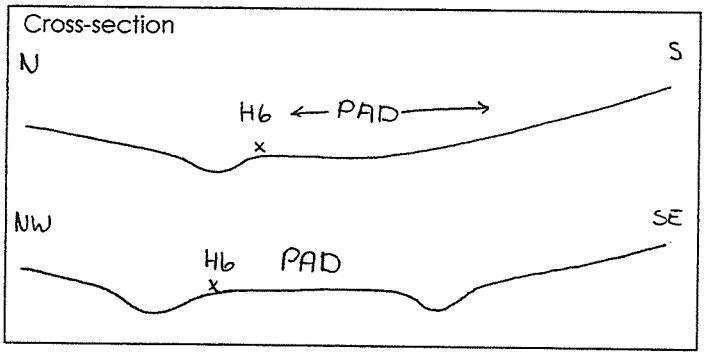
County: Brisbane Parish: Ellis Portion No: 16

Landform: Lower reaches of gully, near confluence

Soils & geomorphology: Reddish soil with more buff A unit nearby.

Land use/condition: Previously cleared, possibly ploughed but some big trees. Now used for grazing.

Cross-section



Type of exposure: Ants nest.

Extent of exposure: 10m long 10m wide deep

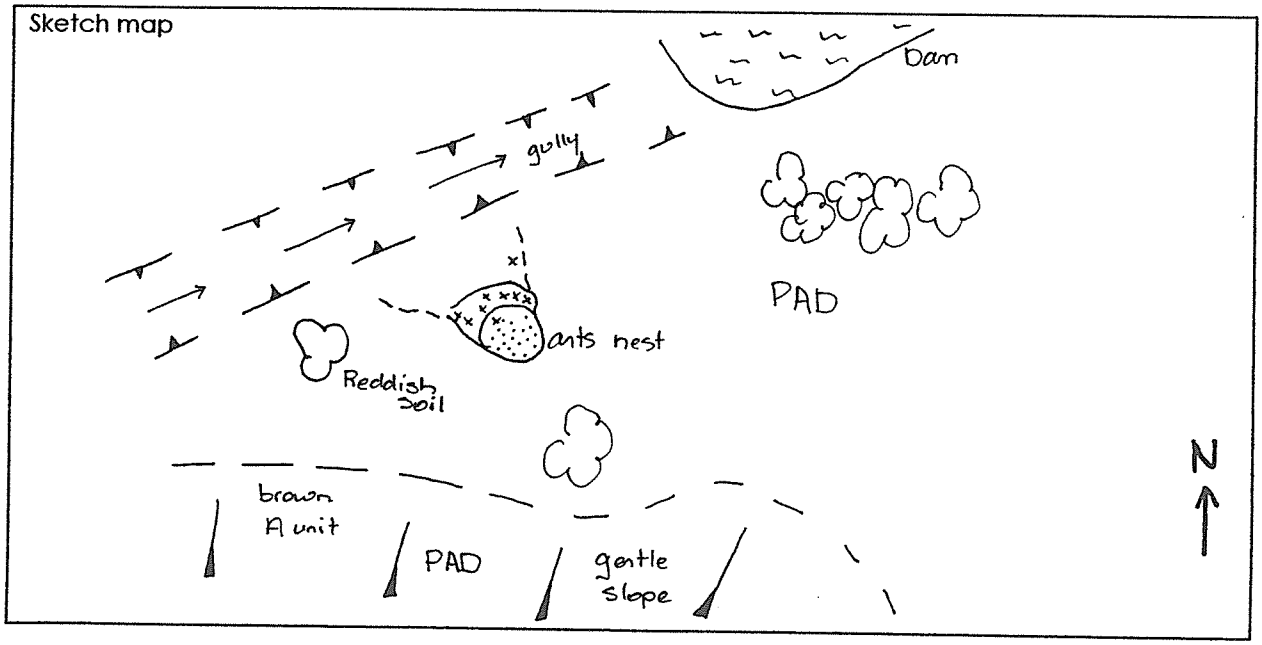
Extent of finds: 3m long 3m wide Extent of PAD: 60m long 60m wide

No of recorded artefacts: 9 Artefact types include: Debitage, core, RU flake

Spatial structure of finds: Clustered

Describe features: None observed.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **I1-I2** NPWS # Recorded by: E. Rich, B. French Date: 1.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9535$ $^{64}3182$
$^{2}9544$ $^{64}3181$

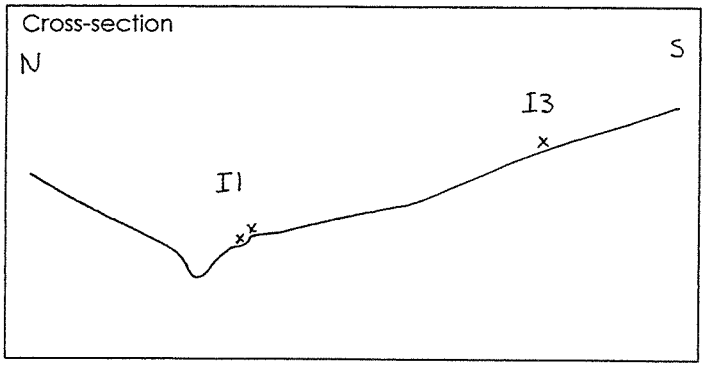
County: Brisbane Parish: Ellis Portion No: 256

Landform: Upper gully & hillslope

Soils & geomorphology: A unit 10cm thick on clay at I1; bulldozed at I2. Hillslope soils.

Land use/condition: Previously cleared, possibly ploughed but some big trees. Now used for grazing.

Cross-section



Type of exposure: I1 - gully erosion; I2 - ants nest, sheet erosion.

Extent of exposure: 20m long 1-4m wide I1 - 1m deep
25m long 3-6m wide

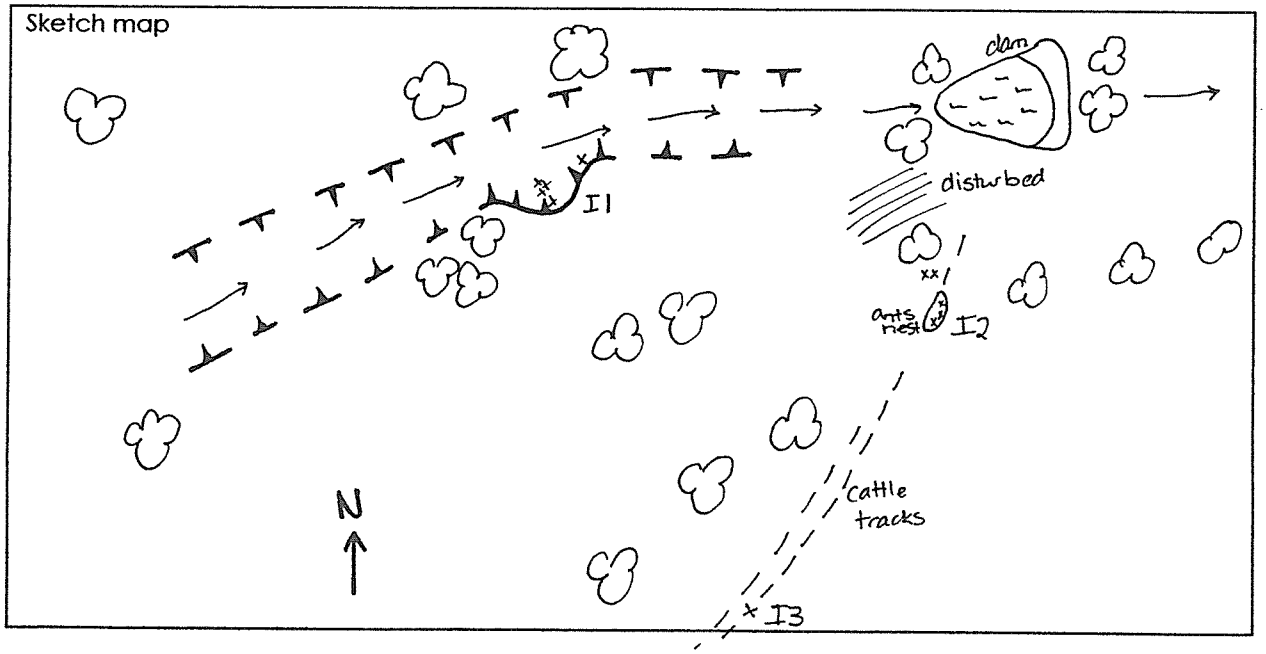
Extent of finds: I1 6m long 1m wide Extent of PAD: 100m long 100m wide
I2 125m long 3-6m wide

No of recorded artefacts: 5 & 5 Artefact types include: Debitage, RU flakes

Spatial structure of finds: Scattered. NB. I3 with 1 silcrete core was c.100m upslope from I2.

Describe features: None observed.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: I4 NPWS # Recorded by: E. Rich, B. French Date: 1.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9569$ $^{64}3241$

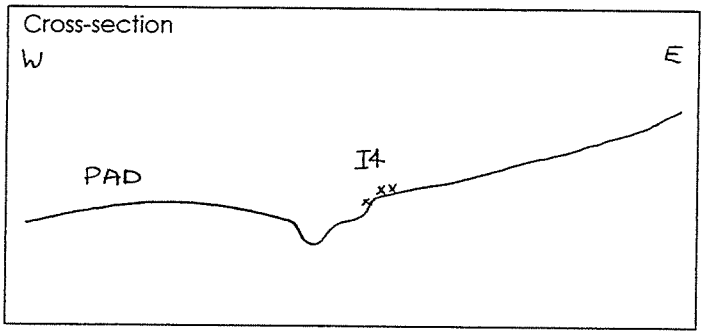
County: Brisbane Parish: Ellis Portion No: 253

Landform: Upper-middle reaches of gully.

Soils & geomorphology: A unit 20cm thick on clay. Hillslope soils.

Land use/condition: Previously cleared, but some big trees, not ploughed. Now used for grazing.

Cross-section



Type of exposure: Gully erosion, track.

Extent of exposure: 30m long 1-4m wide 1m deep

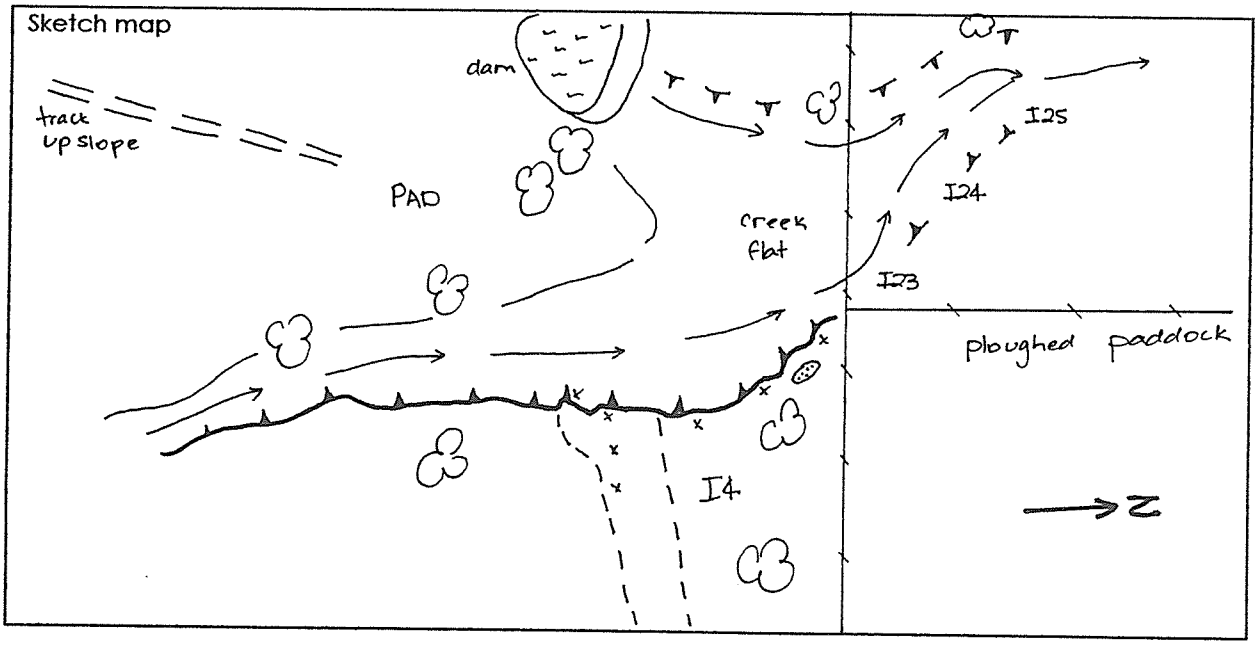
Extent of finds: 30m long 1-4m wide Extent of PAD: 100m long 20m wide
100m long 50m wide

No of recorded artefacts: 7 Artefact types include: Debitage

Spatial structure of finds: Scattered.

Describe features: None observed.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: I5 NPWS # Recorded by: E. Rich, B. French Date: 1.6.94

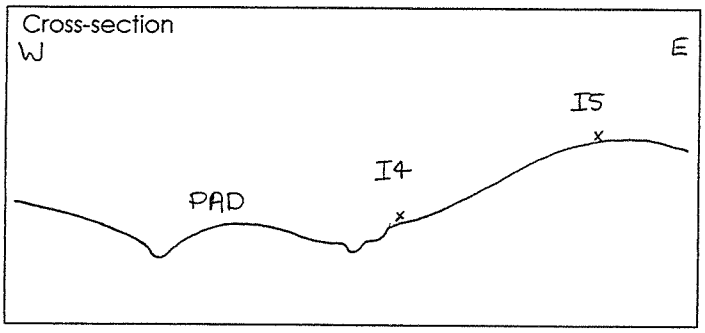
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9590$ $^{64}3240$

County: Brisbane Parish: Ellis Portion No: 253

Landform: Top of gentle spur.

Soils & geomorphology: Deflated A unit. Hillslope soils.

Land use/condition: Previously cleared, but some big trees, not ploughed. Now used for grazing.



Type of exposure: Track.

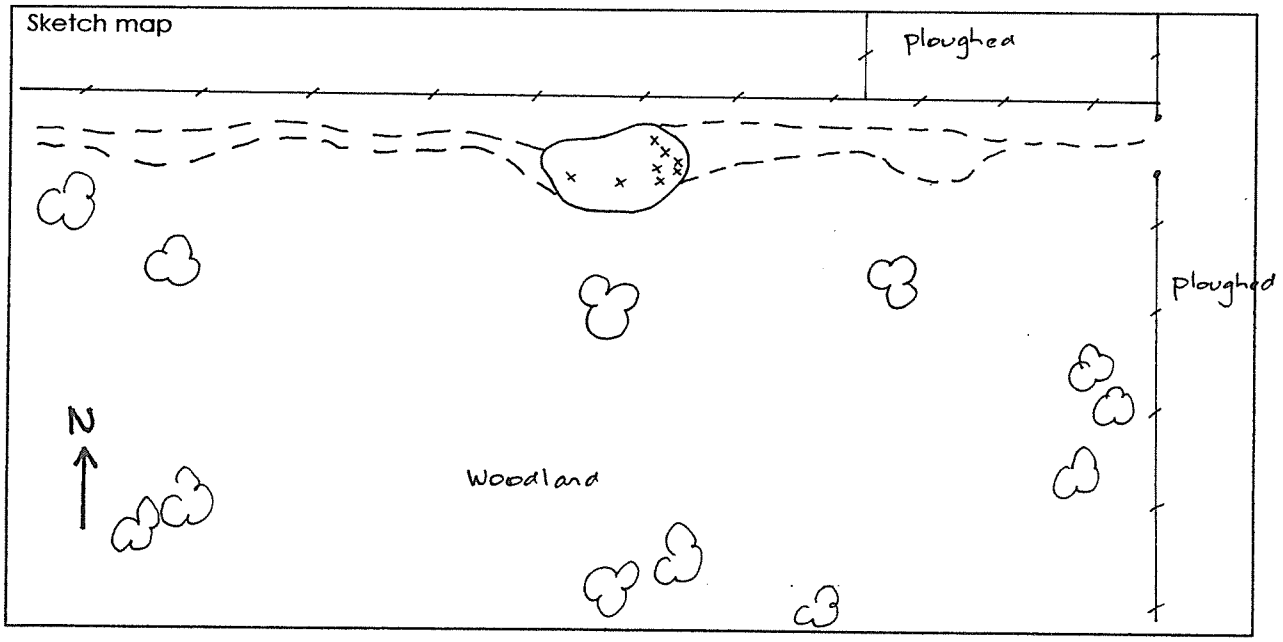
Extent of exposure: >300m long 0.3-4m wide <20cm deep

Extent of finds: 4m long 4m wide Extent of PAD: long wide

No of recorded artefacts: 14 Artefact types include: Debitage

Spatial structure of finds: Clustered.

Describe features: None observed. Note: PAD is woodland area suitable to investigate finds on hillslopes - expected to have only sparse artefacts.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: I14 NPWS # Recorded by: E. Rich, J. Ruig Date: 2.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: ^{2}9493 ^{64}3251

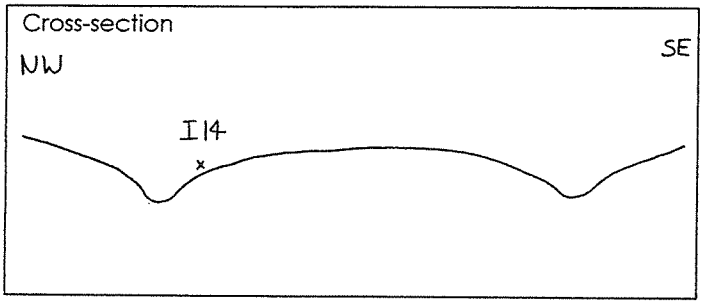
County: Brisbane Parish: Ellis Portion No: 146

Landform: Upper-middle reaches of gully.

Soils & geomorphology: Hillslope soils. Clay only; no A unit.

Land use/condition: Cleared, ploughed, site deflated & trampled.

Cross-section



Type of exposure: Sheet erosion around dam.

Extent of exposure: 50m long 8m wide <20m deep

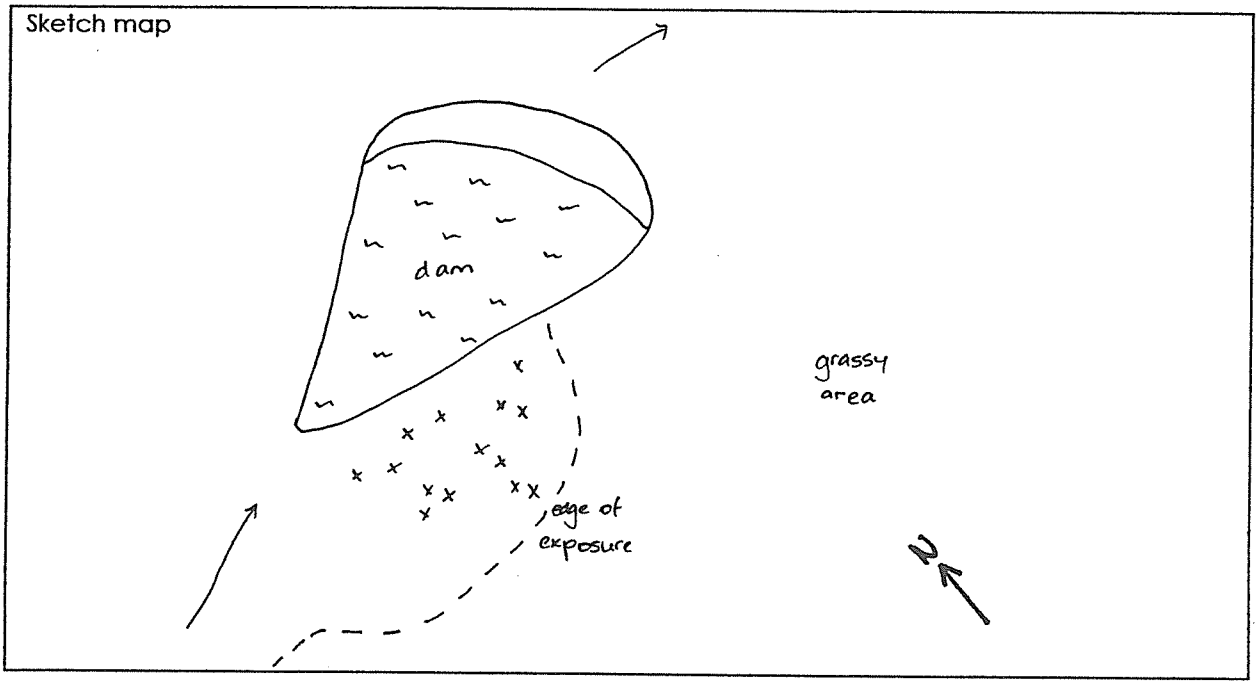
Extent of finds: 20m long 5m wide Extent of PAD: none long m wide

No of recorded artefacts: 12 Artefact types include: Debitage, RU flakes, geometric.

Spatial structure of finds: Scattered.

Describe features:.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **I19** NPWS # Recorded by: R. Stocks, P. Saunders Date: 2.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: ^{2}9554 ^{64}3262

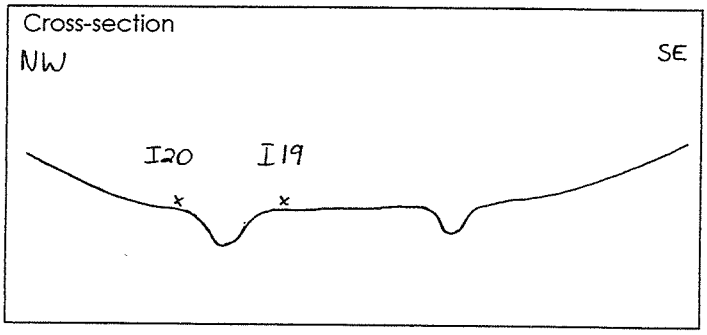
County: Brisbane Parish: Ellis Portion No: 181

Landform: Upper-middle reaches of gully, between confluence of two tributaries.

Soils & geomorphology: Pale brown A unit.

Land use/condition: Cleared, possibly ploughed but tree stumps present. Site deflated.

Cross-section



Type of exposure: Sheet erosion along edge of gully.

Extent of exposure: 30m long 10m wide ?m deep

Extent of finds: 20m long 2m wide Extent of PAD: with I4, I17-I27: 200m long 200-400m wide

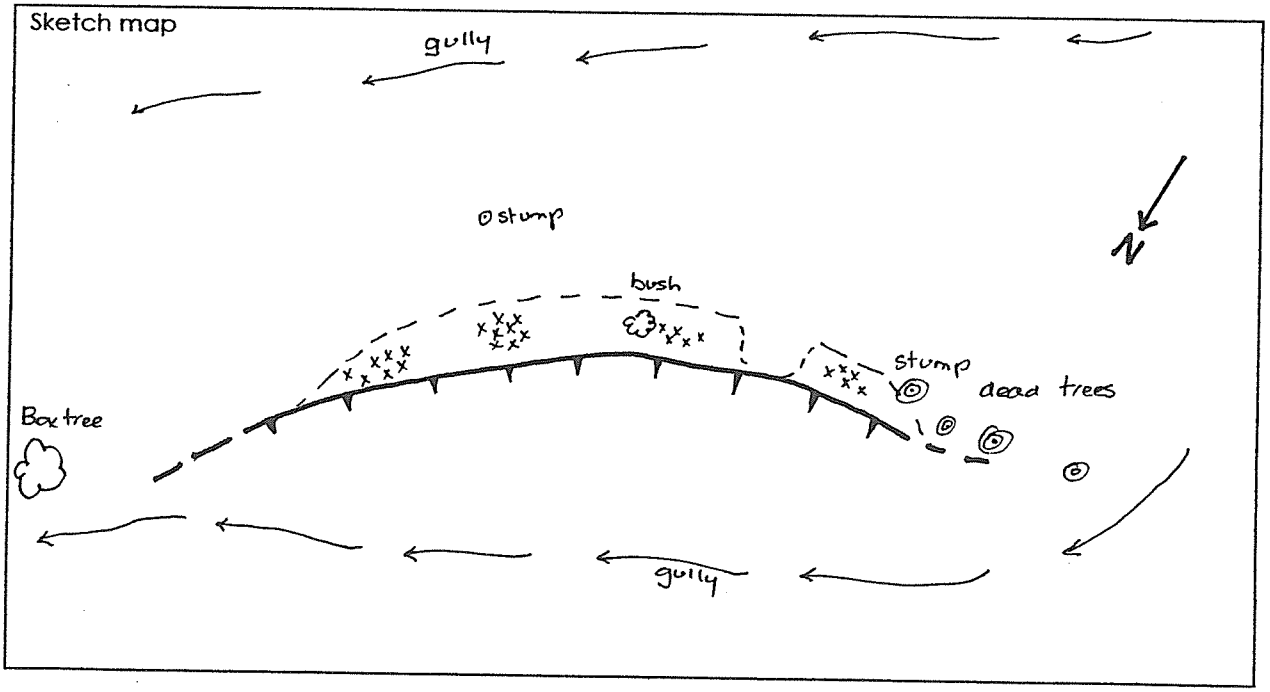
No of recorded artefacts: 44

Artefact types include: Debitage, RU flakes, geometrics, bipolars, pebble tool.

Spatial structure of finds: Scattered.

Describe features: Possibly dispersed indurated mudstone knapping event.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: I37 NPWS # Recorded by: H. Barton, P. Saunders Date: 3.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9634$ $^{64}3325$

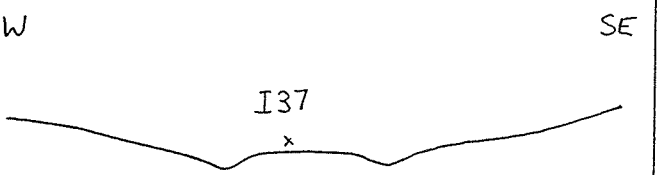
County: Brisbane Parish: Ellis Portion No: 37, 38, 268

Landform: Confluence between 2 gullies.

Soils & geomorphology: Surface of A unit only exposed.

Land use/condition: Grazing, possibly not ploughed

Cross-section



Type of exposure: Track.

Extent of exposure: 40m long 2m wide m deep

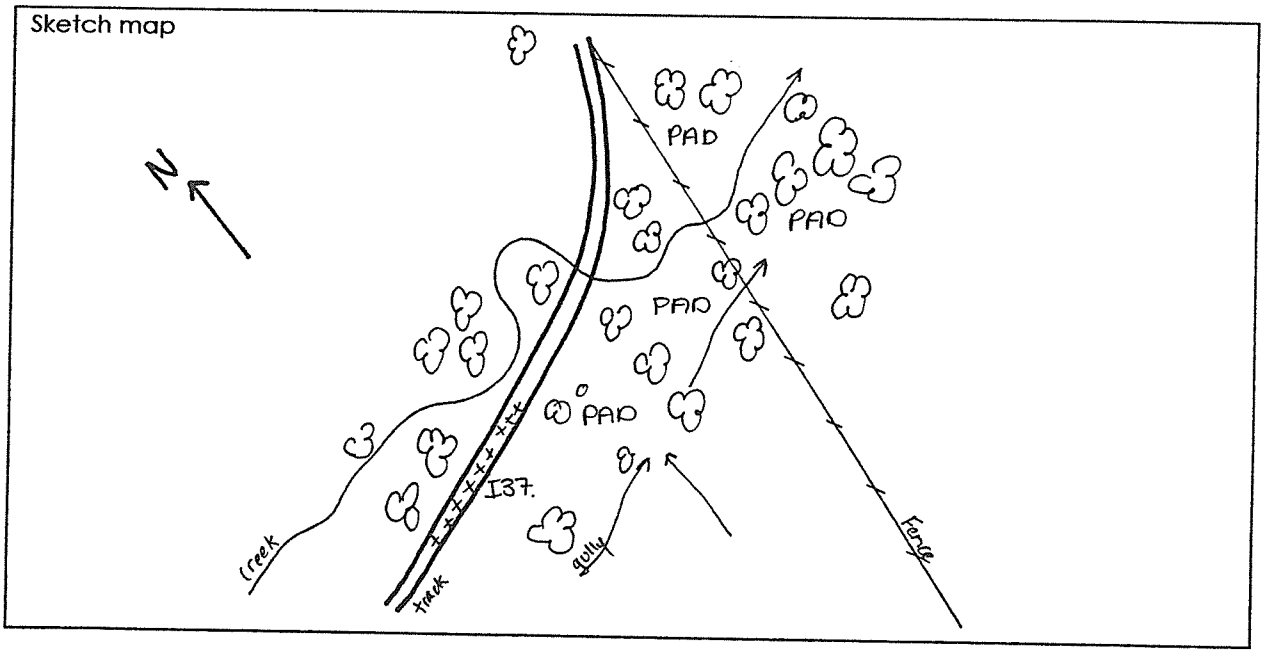
Extent of finds: >25m long 2m wide Extent of PAD: 350m long 100m wide

No of recorded artefacts: 26 Artefact types include: Debitage, cores.

Spatial structure of finds: Scattered.

Describe features: None found.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: I42 NPWS # Recorded by: H. Barton, P. Saunders Date: 3.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9697$ $^{64}3390$

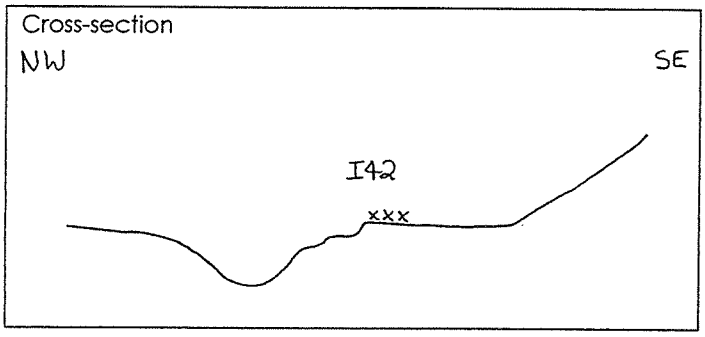
County: Brisbane Parish: Ellis Portion No: 37

Landform: Gully bank.

Soils & geomorphology: A unit <10cm thick on clay.

Land use/condition: Grazing.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: 20m long 20m wide m deep

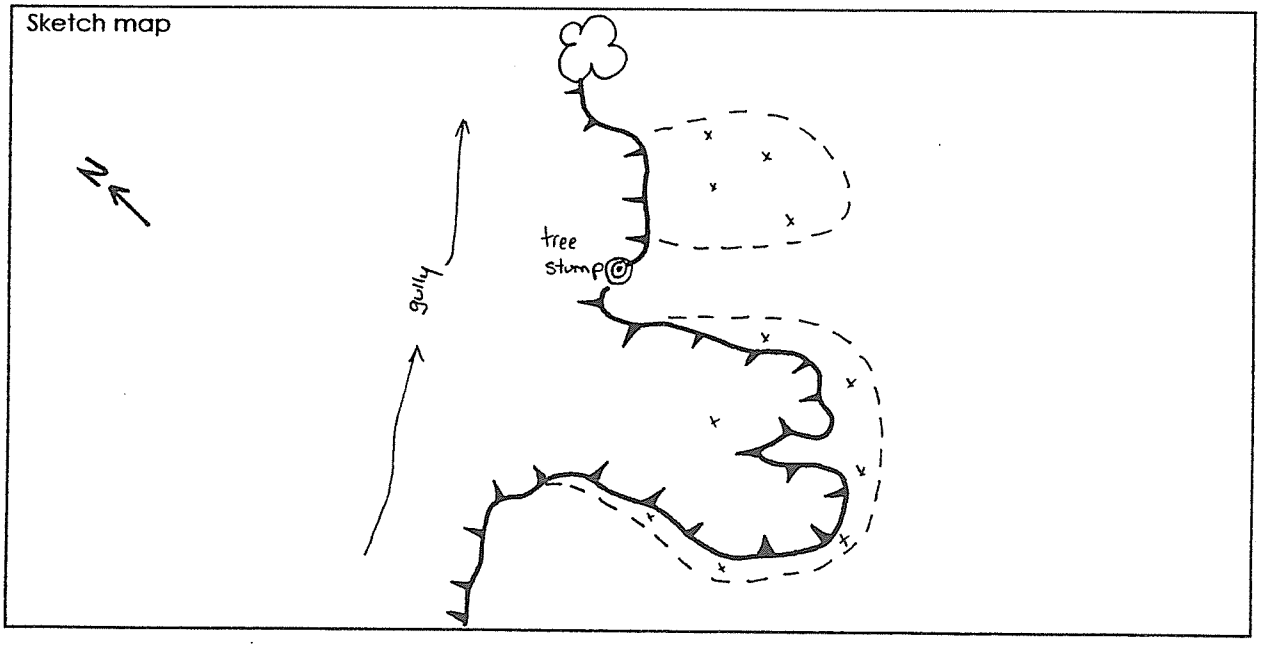
Extent of finds: 12m long 12m wide Extent of PAD: with I40-I41: 250m long 100-300m wide

No of recorded artefacts: 11 Artefact types include: Debitage, 1 core.

Spatial structure of finds: Scattered.

Describe features: None found.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

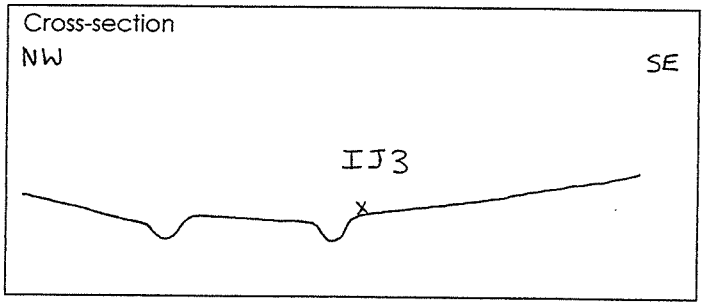
Site name: **IJ3** NPWS # Recorded by: H. Barton, B. French Date: 2.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9712$ $^{64}3426$

County: Brisbane Parish: Ellis Portion No: 27

Landform: Creek confluence.

Cross-section



Soils & geomorphology: Sandy clay at IJ3. Mapped as sandy hillslope soils.

Land use/condition: Cleared, ploughed ?, grazed..

Type of exposure: Ants nest.

Extent of exposure: 3m long 2m wide <20m deep

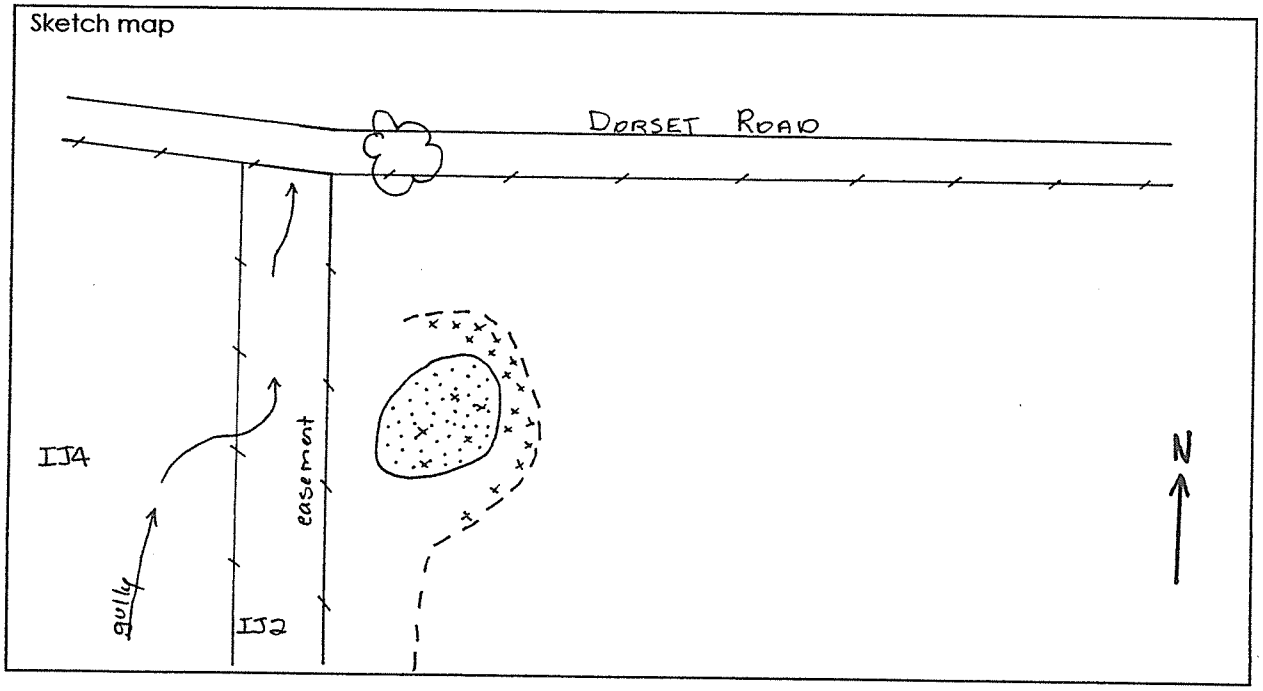
Extent of finds: 3m long 2m wide Extent of PAD: IJ confluence: 700m long 300m wide

No of recorded artefacts: 22 Artefact types include: Debitage, cores, geometric.

Spatial structure of finds: Clustered on ants nest.

Describe features: Silcrete & indurated mudstone knapping event.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **IJ4** NPWS # Recorded by: E. Rich Date: 3.6.94

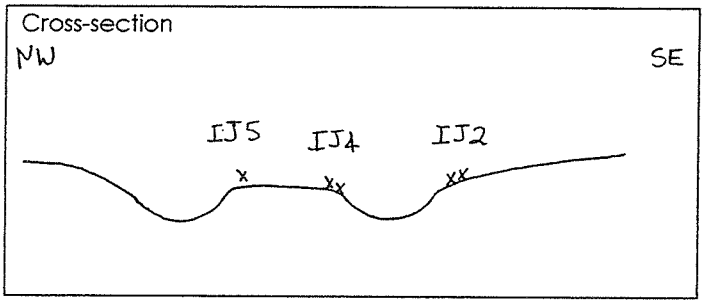
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9704$ $^{64}3422$

County: Brisbane Parish: Ellis Portion No: 21

Landform: Creek confluence.

Soils & geomorphology: A unit <10cm thick on clay. Mapped as hillslope soils.

Land use/condition: Cleared, ploughed ?, trampled by stock.



Type of exposure: Gully erosion.

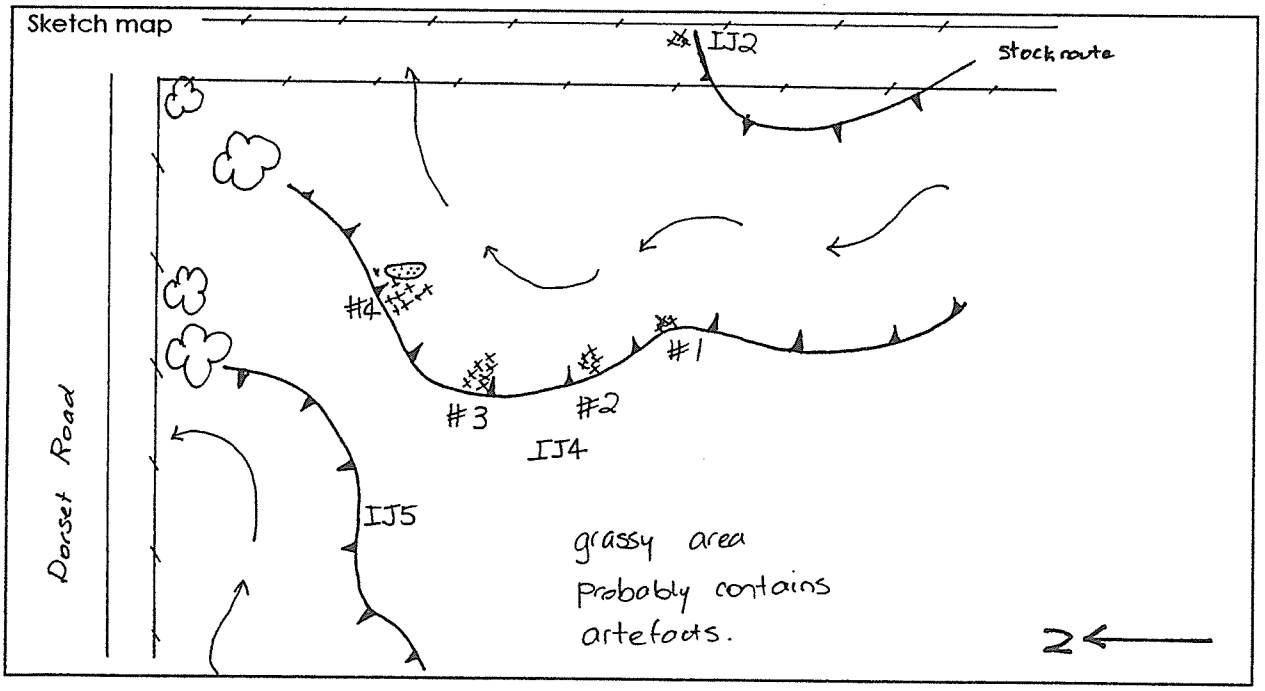
Extent of exposure: 50m long 5m wide 1-2m deep

Extent of finds: 50m long 2-3m wide Extent of PAD: IJ confluence: 700m long 300m wide

No of recorded artefacts: 63 Artefact types include: Debitage, core, geometric, bipolars.

Spatial structure of finds: Four higher density clusters, separated by gaps of c.10m without finds.

Describe features: A series of silcrete knapping events, now dispersed.



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MT PLEASANT SITE RECORDING FORM

Site name: **IJ8** NPWS # Recorded by: E. Rich Date: 3.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9658$ $^{64}3416$

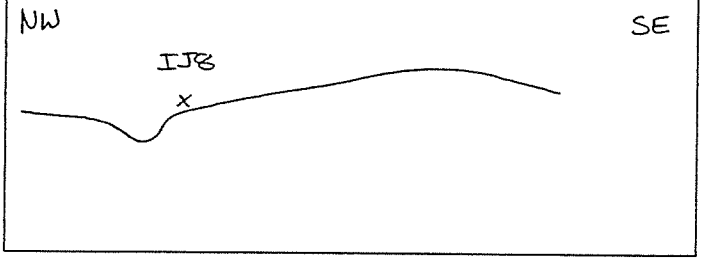
County: Brisbane Parish: Ellis Portion No: 21, 36

Landform: Creek confluence.

Soils & geomorphology: A unit <10cm thick on clay. Mapped as hillslope soils.

Land use/condition: Cleared, ploughed ?, trampled by stock.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: 150m long 3m wide <1m deep

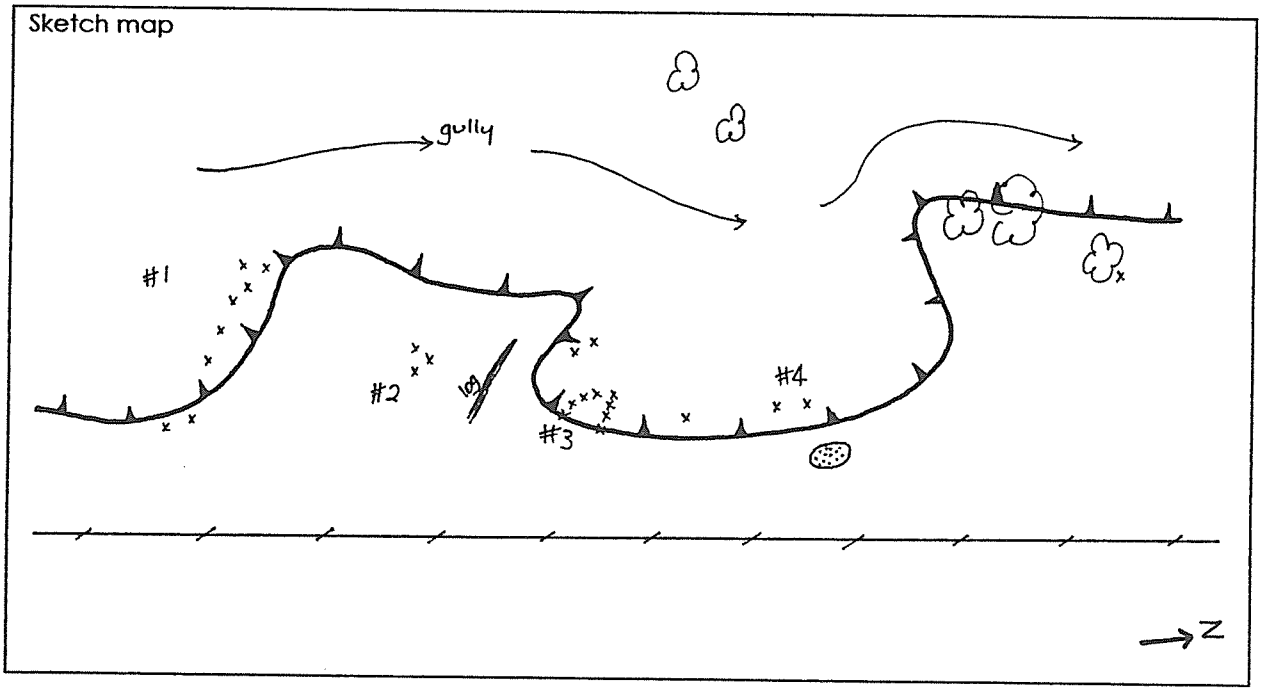
Extent of finds: 100m long 2-3m wide Extent of PAD: IJ confluence: 700m long 300m wide

No of recorded artefacts: 31 Artefact types include: Debitage, core, geometric, RU flake.

Spatial structure of finds: Generally scatttered, but with some tendency for higher density clusters.

Describe features: None recorded.

Sketch map



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MT PLEASANT SITE RECORDING FORM

Site name: **IJ9** NPWS # Recorded by: E. Rich, B. French Date: 3.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9671$ $^{64}3429$

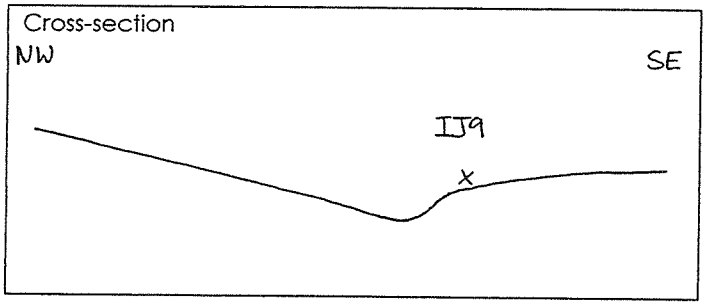
County: Brisbane Parish: Ellis Portion No: 21, 36

Landform: Creek confluence.

Soils & geomorphology: A unit c. 20cm thick on clay.

Land use/condition: Cleared, ploughed ?, trampled by stock using gateway.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: 30m long 2-3m wide <1m deep

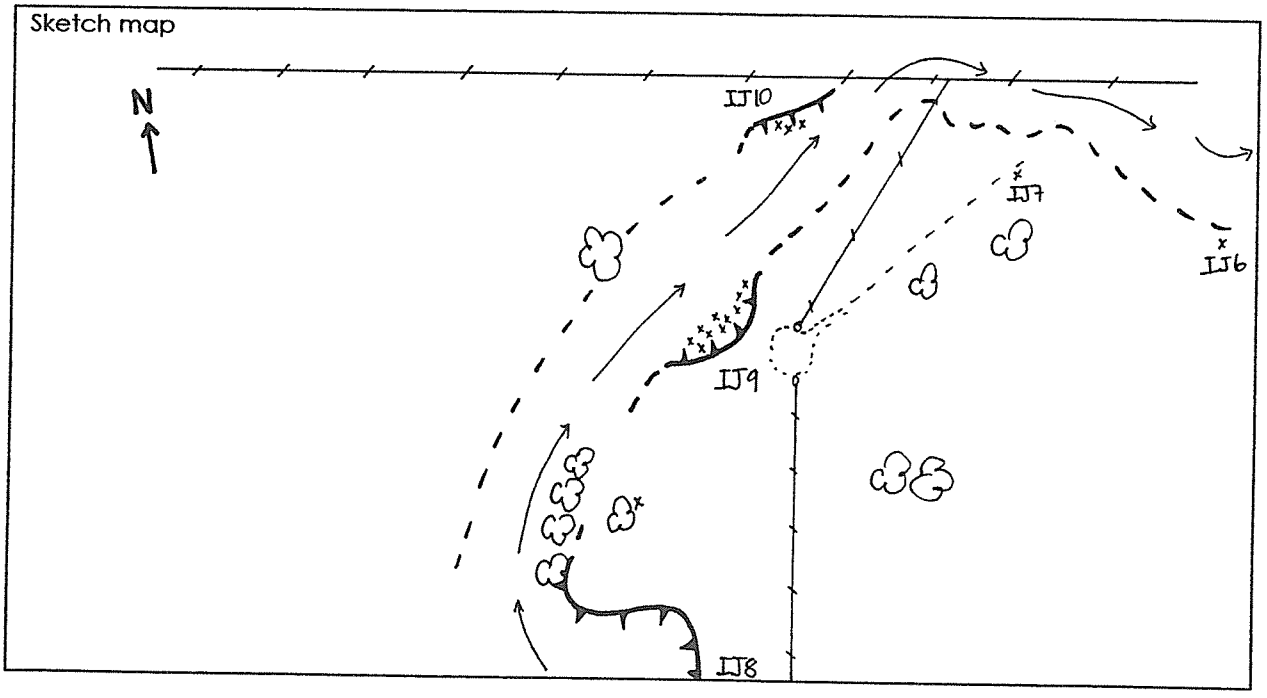
Extent of finds: 30m long 2-3m wide Extent of PAD: IJ confluence: 700m long 300m wide

No of recorded artefacts: 11 Artefact types include: Debitage, core, geometric.

Spatial structure of finds: Scatttered.

Describe features: None recorded.

Sketch map



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MT PLEASANT SITE RECORDING FORM

Site name: **J4** NPWS # Recorded by: E. Rich, J. Ruig Date: 2.6.94

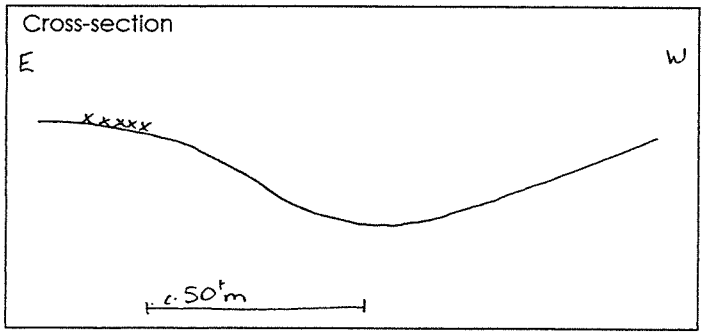
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9477$ $^{64}3306$

County: Brisbane Parish: Ellis Portion No: 147

Landform: Hillslope.

Soils & geomorphology: Orange clay. A unit missing from artefact location.

Land use/condition: Track, grazing. Artefacts deflated onto trampled clay surface.



Type of exposure: Track, sheet erosion, visibility c.40%.

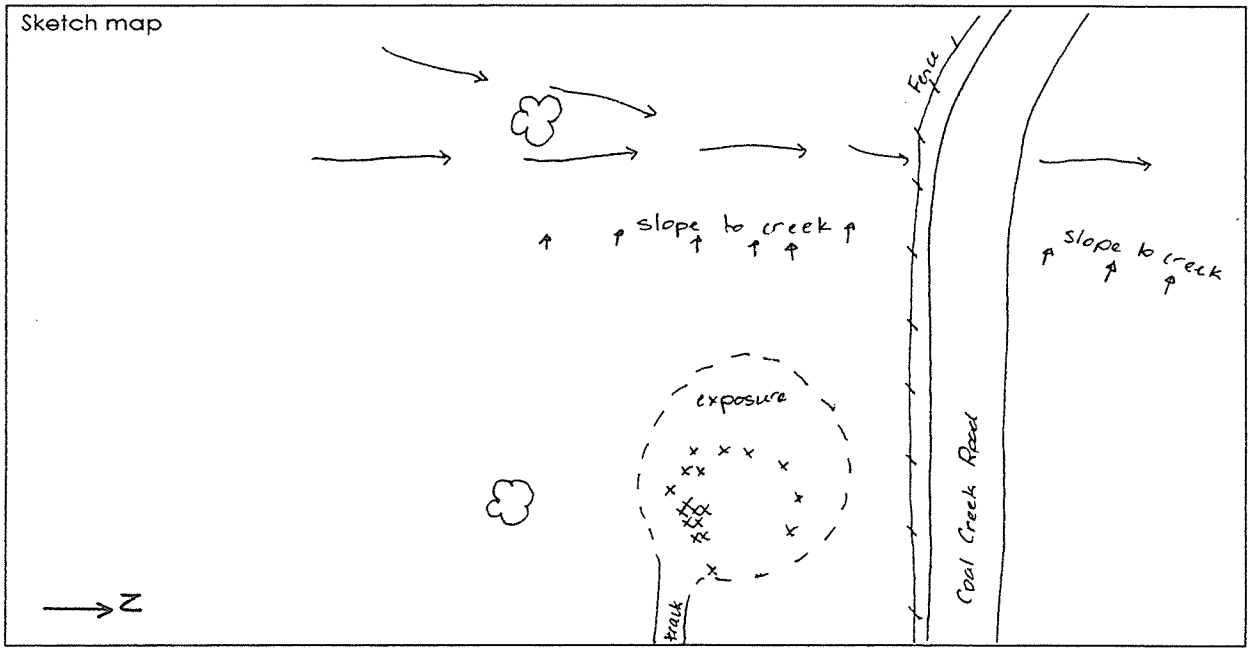
Extent of exposure: 50m long 30m wide deep

Extent of finds: 20m long 20m wide Extent of PAD: none long wide

No of recorded artefacts: 18 Artefact types include: 1 RU piece, 3 cores, debitage.

Spatial structure of finds: A "cluster" of 8 finds in 5x3m, others more widely scattered.

Describe features: None found.



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MT PLEASANT SITE RECORDING FORM

Site name: **J19, J21** NPWS # Recorded by: R. Stocks, J. Ruig Date: 3.6.94

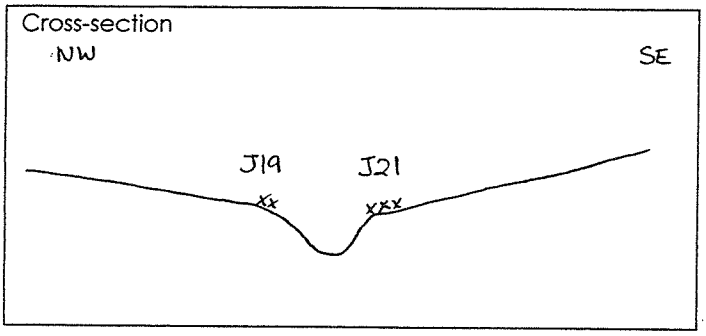
Map Name: Aberdeen Scale: 1:25,000 Grid reference: J19 ^{2}9516 ^{64}3342
J21 ^{2}9520 ^{64}3340

County: Brisbane Parish: Ellis Portion No: 39

Landform: Gully bank.

Soils & geomorphology: A unit c.15cm thick on clay at J19, and <15-40cm thick at J21.

Land use/condition: Grazing.



Type of exposure: Gully erosion.

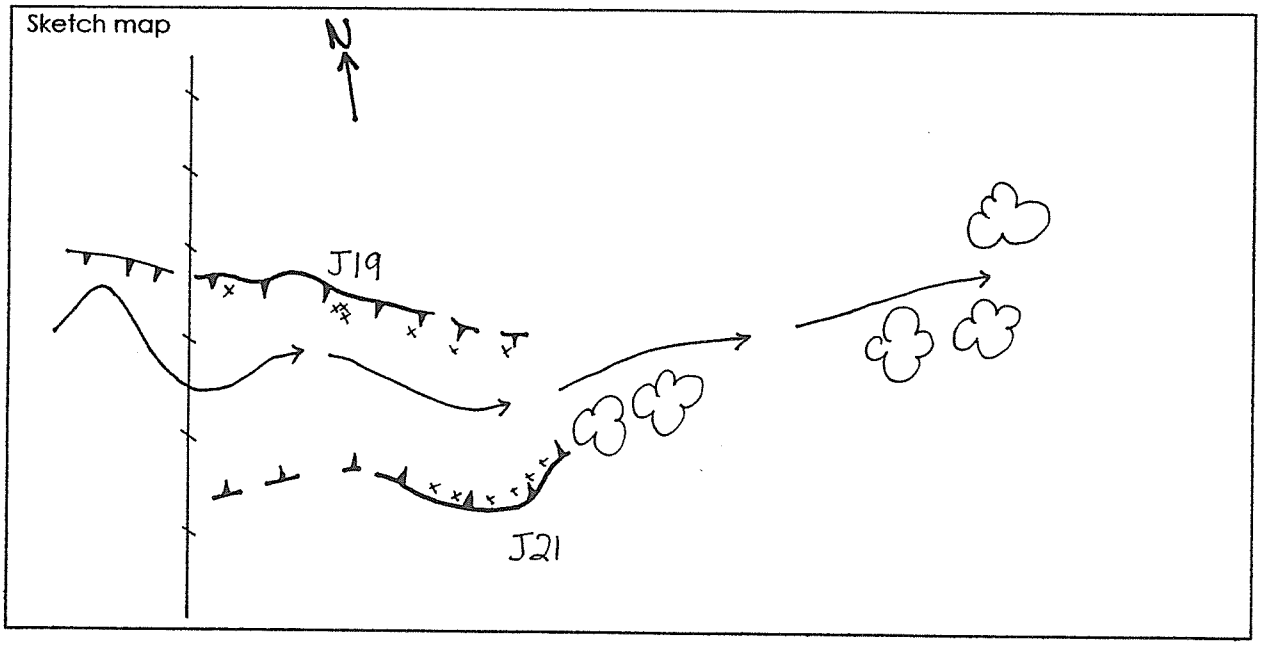
Extent of exposure: **J19**: 30m long 5m wide <20cm deep
J21: 30m long 3m wide

Extent of finds: **J19**: 10m long 2m wide Extent of PAD: with J19-J35: 600m long 300-500m wide
J21: 15m long 3m wide

No of recorded artefacts: 7 & 6 Artefact types include: Debitage, RU flakes, BB fragment, core.

Spatial structure of finds: Scattered.

Describe features: None found.



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MT PLEASANT SITE RECORDING FORM

Site name: **J26** NPWS # Recorded by: R. Stocks, J. Ruig Date: 3.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9575$ $^{64}3375$

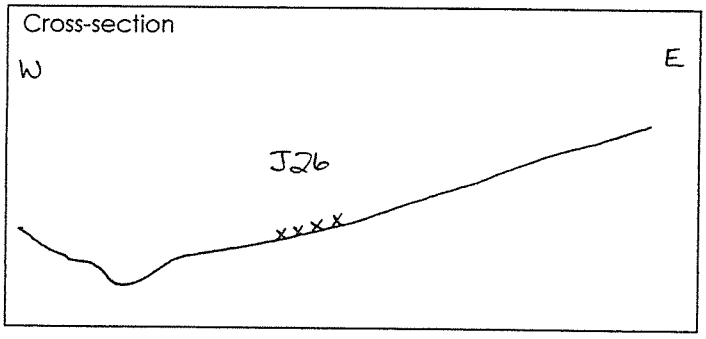
County: Brisbane Parish: Ellis Portion No: 39

Landform: Gully bank.

Soils & geomorphology: A unit <10cm thick on clay.

Land use/condition: Grazing.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: 120m long 60m wide m deep

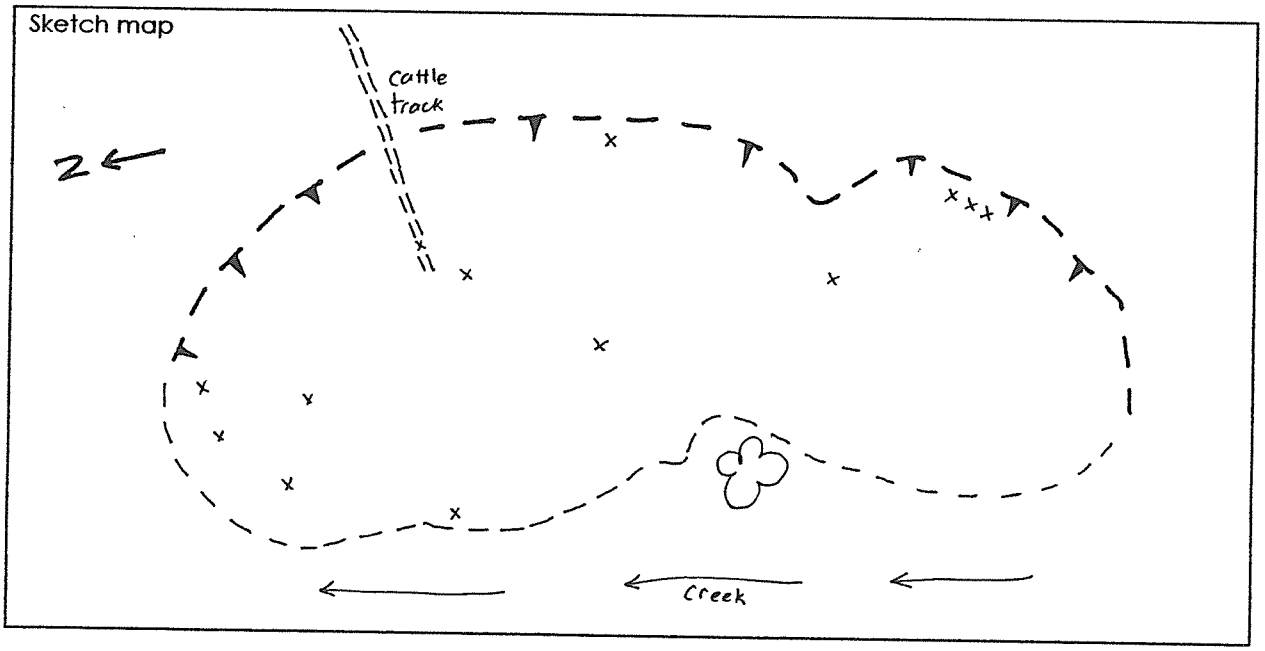
Extent of finds: 90m long 50m wide Extent of PAD: with J19-J35: 600m long 300-500m wide

No of recorded artefacts: 13 Artefact types include: Debitage, cores, RU flake, pebble tool.

Spatial structure of finds: Scattered.

Describe features: None found.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **J29** NPWS # Recorded by: R. Stocks, J. Ruig Date: 3.6.94

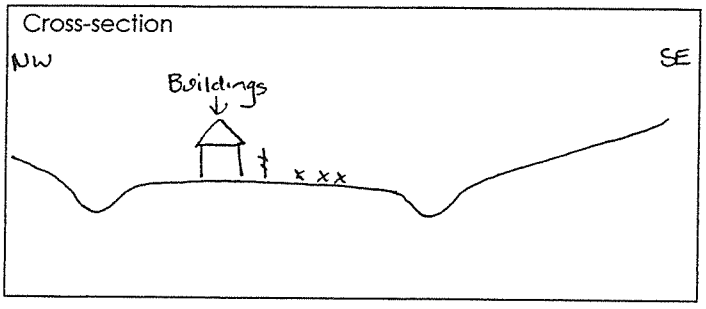
Map Name: Aberdeen Scale: 1:25,000 Grid reference: ^{2}9568 ^{64}3380

County: Brisbane Parish: Ellis Portion No: 39

Landform: Confluence of 2 creeks.

Soils & geomorphology: Thin A unit <3cm thick on clay. Mapped as hillslope soils.

Land use/condition: Cleared, deflated, possibly not ploughed.



Type of exposure: Sheet erosion, grassy area.

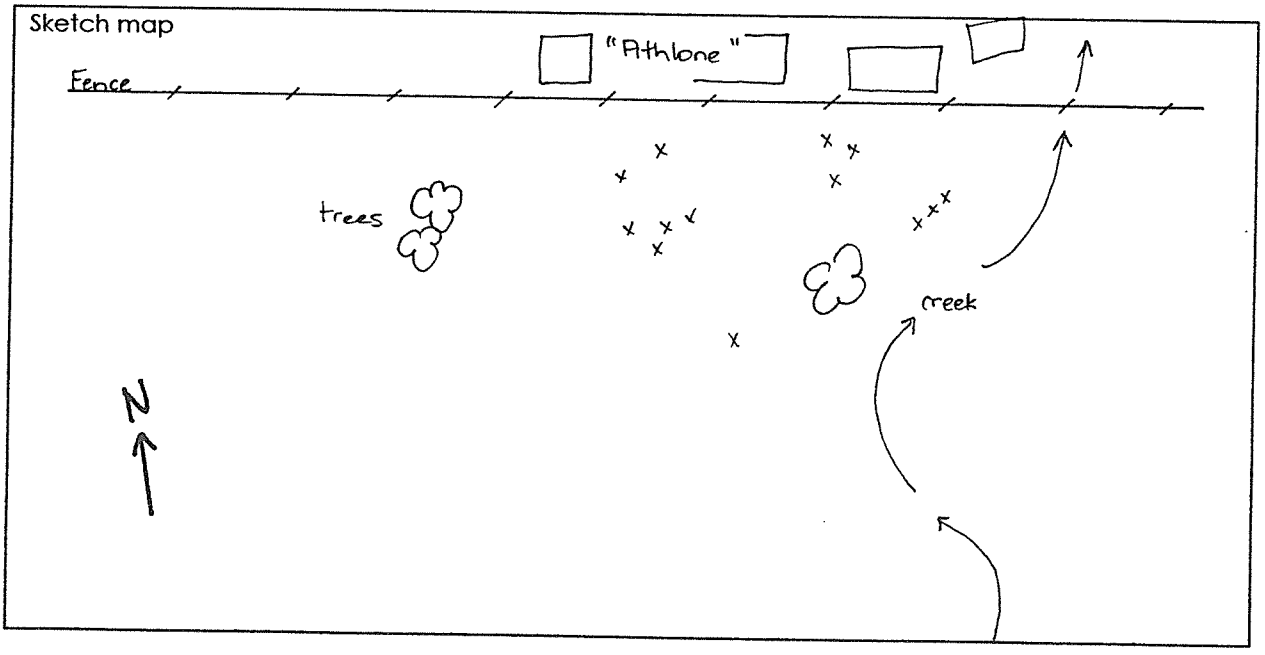
Extent of exposure: 150m long 120m wide <20cm deep

Extent of finds: 100m long 80m wide Extent of PAD: with J19-J35: 600m long 300-500m wide

No of recorded artefacts: 18 Artefact types include: Debitage, RU flakes.

Spatial structure of finds: Scattered.

Describe features: None found.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **J35** NPWS # Recorded by: E. Rich, J. Ruig Date: 2.6.94

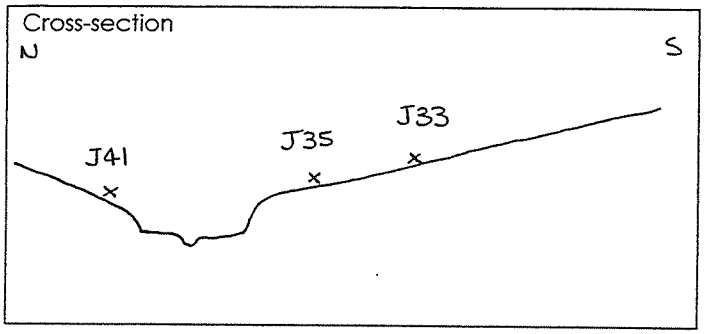
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9540$ $^{64}3397$

County: Brisbane Parish: Ellis Portion No: 28, 45

Landform: Footslope above gully.

Soils & geomorphology: Hillslope soils. Thin gravelly A unit on clay.

Land use/condition: Cleared. Track. Grazed. Deflated.



Type of exposure: Track.

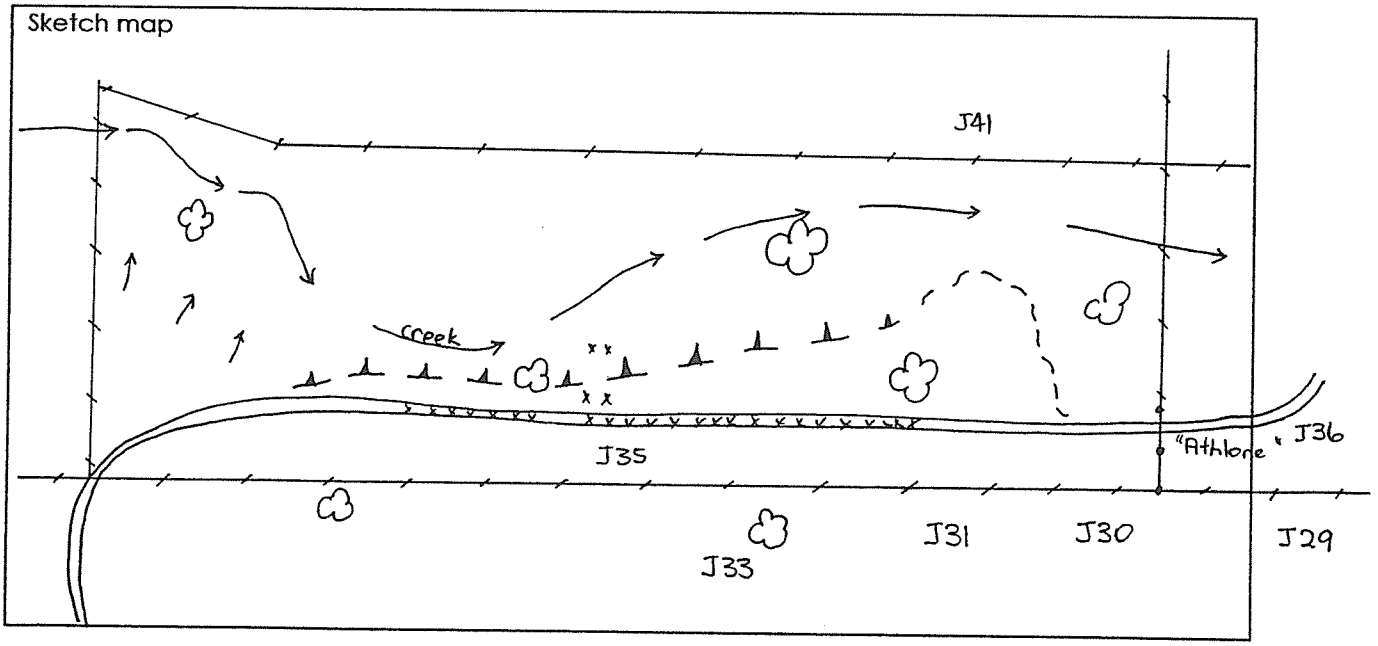
Extent of exposure: 400m long 2m wide <20cm deep

Extent of finds: 200m long 2m wide Extent of PAD: with J19-J35: 600m long 300-500m wide

No of recorded artefacts: 53 Artefact types include: Debitage, cores, backed flake.

Spatial structure of finds: Scattered along track.

Describe features: None found on track but likely to be present adjacent to track.



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MT PLEASANT SITE RECORDING FORM

Site name: **J41** NPWS # Recorded by: E. Rich, B. French Date: 3.6.94

Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9552$ $^{64}3401$

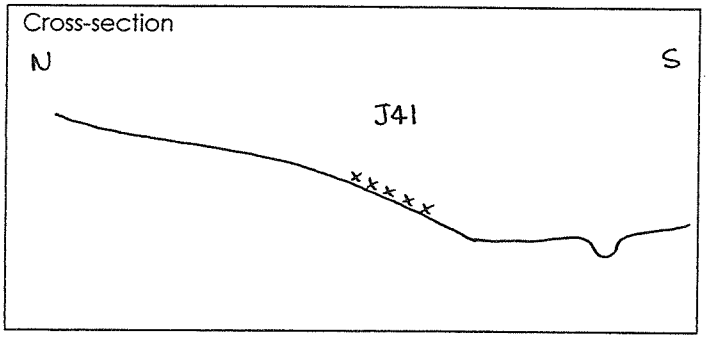
County: Brisbane Parish: Ellis Portion No: 28

Landform: Footslope above gully.

Soils & geomorphology: Hillslope soils. A unit <10cm thick on clay.

Land use/condition: Cleared, possibly ploughed, trampled.

Cross-section



Type of exposure: Gully erosion.

Extent of exposure: 20m long 20m wide 1-2m deep

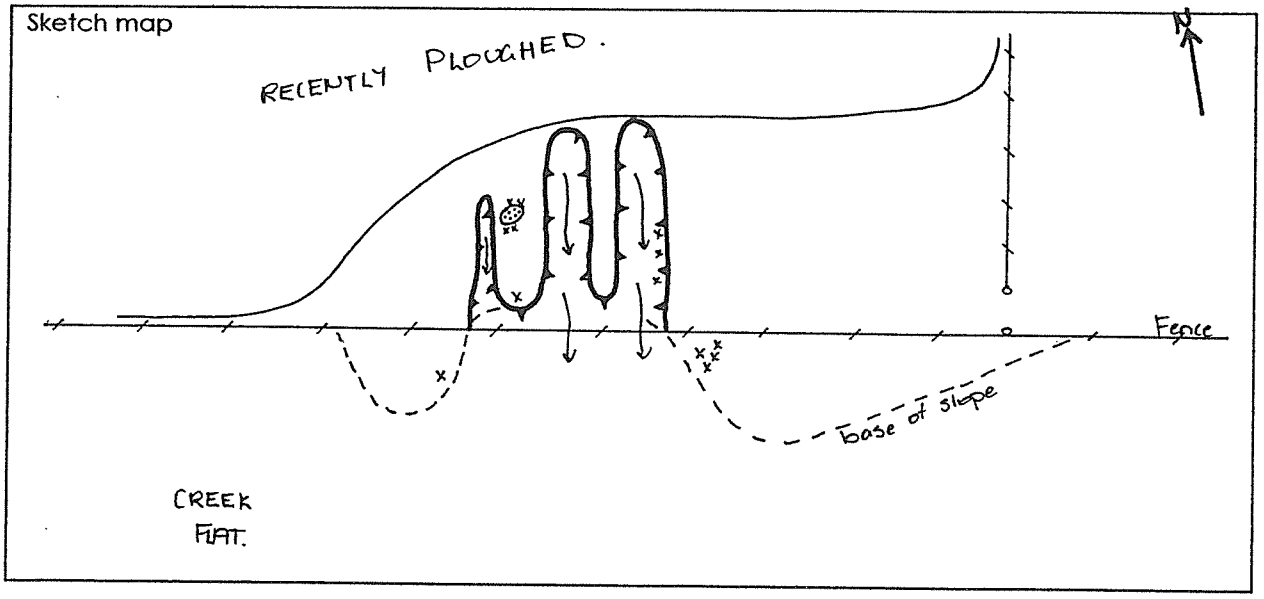
Extent of finds: 20m long 10m wide Extent of PAD: too disturbed long wide

No of recorded artefacts: 13 Artefact types include: Debitage, core, geometric bb.

Spatial structure of finds: Clustered at ants nest; otherwise scattered.

Describe features: Possible silcrete knapping event at ants nest.

Sketch map



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

MT PLEASANT SITE RECORDING FORM

Site name: **J42** NPWS # Recorded by: H. Barton, B. French Date: 2.6.94

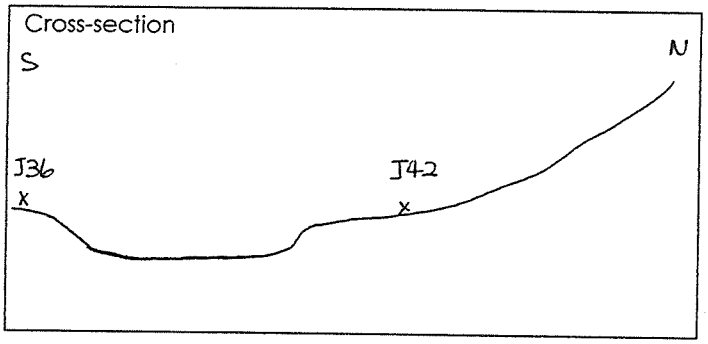
Map Name: Aberdeen Scale: 1:25,000 Grid reference: $^{2}9567$ $^{64}3402$

County: Brisbane Parish: Ellis Portion No: 28

Landform: Gully confluence.

Soils & geomorphology: Brown sandy silt. Deposits in yards show recent deposition.

Land use/condition: Shearing shed & yards; trampled.



Type of exposure: Ants nest.

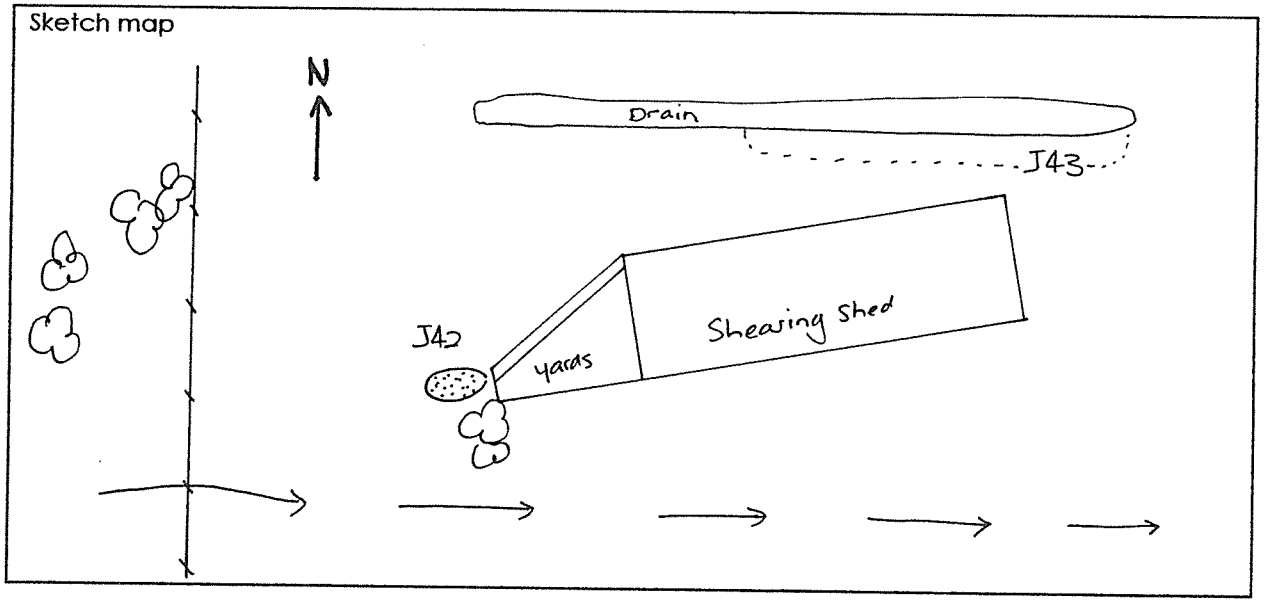
Extent of exposure: 5m long 3m wide m deep

Extent of finds: 5m long 3m wide Extent of PAD: too disturbed long wide

No of recorded artefacts: 16 Artefact types include: Debitage, Bondi point fragment.

Spatial structure of finds: Clustered.

Describe features: Silcrete knapping event.



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MT PLEASANT SITE RECORDING FORM

Site name: **J43** NPWS # Recorded by: H. Barton, B. French Date: 2.6.94

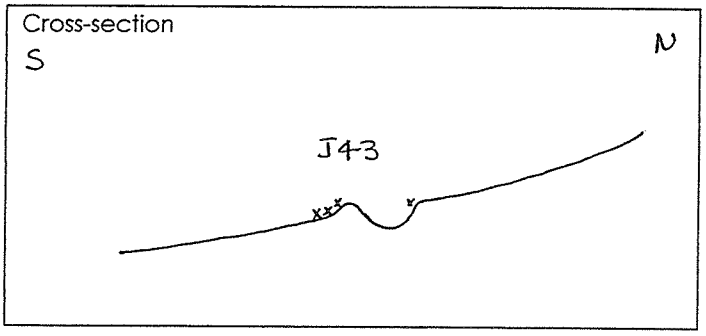
Map Name: Aberdeen Scale: 1:25,000 Grid reference: ^{2}9573 ^{64}3401

County: Brisbane Parish: Ellis Portion No: 28

Landform: Gully confluence.

Soils & geomorphology: Brown sandy silt.

Land use/condition: Dug out for contour drain. Also shearing shed & yards.



Type of exposure: Contour drain.

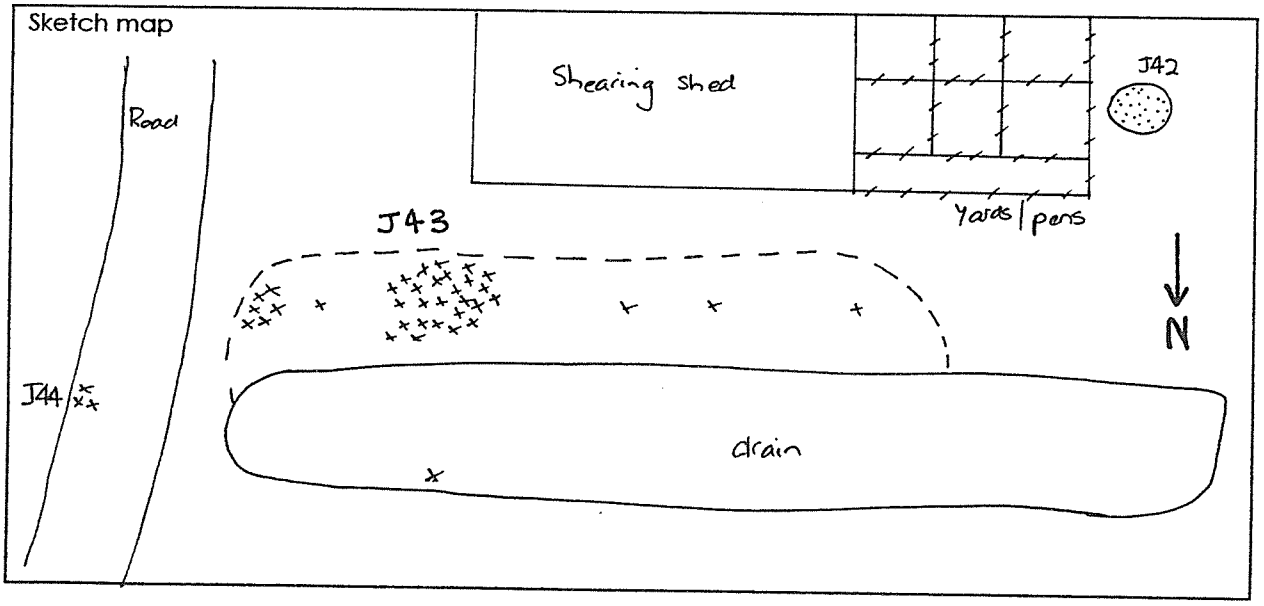
Extent of exposure: 40m long 7m wide <1m deep

Extent of finds: 40m long . 7m wide Extent of PAD: too disturbed long wide

No of recorded artefacts: 49 Artefact types include: Debitage, RU pieces, Geometirc, pebble tool. Also geometric at J44.

Spatial structure of finds: Clustered. J44 adjacent has 3 artefacts on road.

Describe features: Silcrete knapping event dug out when drain excavated.



Report: Rich, E. 1995 Mt Pleasant Coal Lease, near Muswellbrook: Archaeological Survey for Aboriginal Sites

APPENDIX D:

ARTEFACT RECORD

A GUIDE TO THE ARTEFACT RECORD

Location	Name of the artefact location as used throughout the report	
No.	The number of artefacts within each descriptive category	
Size in cm	The maximum size of the artefact in any dimension	
Type	Options are: Axe, pebble tool, RU piece, backed piece (specific sub-type entered), core, flake, bipolar, piece. These categories have the following definitions:	
	Axe	Large rectangular-shaped tool with bifacially flaked or ground end
	Pebble tool	Flaked pebble with at least one used edge; may be rectangular, elliptical or circular in shape
	RU flake or RU piece	A piece of stone with a retouched and/or used edge. The retouched/ used edge must be located on that artefact in such a way that the retouch/usewear occurred after the artefact was removed from its core. The category includes flakes, broken flakes or other pieces with retouch/usewear.
	Backed piece	Usually backed blades. These artefacts have blunting retouch along one margin (sometimes two) which is opposite a thin sharp margin. The blunting retouch must have been initiated from the ventral surface of the flake/piece, to demonstrate that the retouch occurred after the flake/piece was detached from its core. There are commonly two forms of backed blades, being asymmetric Bondi points and symmetric geometrics. Occasional backed pieces which do not fall within these two types occur and have been described here as backed flakes. The term "backed piece" has been used for items which are too incomplete for assignation to other categories.
	Core	A piece of stone which has been flaked to produce flakes large enough to have been used as backed pieces or as other RU pieces/tools. Where the core is not a flaked cobble or pebble, the negative scars must occur in such a manner that they were removed from the core after that artefact had been removed from its core. For example, a core with a flake body must have negative scars on its ventral surface, initiated from its ventral surface, or remove part of the ventral surface.
	Flake	A piece of stone which has been struck from a core. It has characteristic features such as a platform, point of force application, ring crack, bulb of percussion, ripple lines.
	Bipolar artefact	These artefacts have crushing on their platforms and points of force application at opposite ends, and a flattish or wedging bulb of percussion.
	Piece	This category includes all other artefacts, such as pieces of broken flakes, and other pieces of flaked or heat shattered artefact-quality raw materials which do not occur naturally in the site location and which must have been imported.

Flake attributes	Flake shape	The oriented shape of the flake: W>L is wider than long, L>W is longer than wide, and elongate is more than twice as long as wide.
	Flake platform	The characteristics of the platform surface. The flake platform may have cortex, have a plain surface, have a ridge, have one or more small scars, many small scars (faceted), or be focal (less than twice the area of the ringcrack).
	Flake dorsal	This is the dorsal (back) surface of the flake. The flake may have a scar originating from the same platform as the flake, a plain surface, cortex, or "MorD" scars - being the termination scars of flakes which originated from platforms which would have been oriented to the side (medial) or bottom (distal) edges of the current flake. The frequent reporting of MorD scars suggests that the variable may not have been correctly identified.
	Flake termination	The distal end of the flake. Feather terminations are when the flake has a sharp end; plunging terminations occur when the flake carried through to the bottom of the core; step terminations are abrupt terminations; and hinge terminations are like step terminations but rounded in cross-section.
Core attributes	Core body	Cores may be flaked cobbles or pebbles, or be flakes from which smaller flakes have been struck, or be of indeterminate form. No cores with heat shatter core body were reported.
	No of platforms	The number of platforms on the core
	Striking axis	Whether the core is flaked down the long axis or the short axis of the core; ie. whether the core is flaked down the length or shorter width of the core.
	Flaking pattern	Whether a platform edge is worked in one direction (unidirectional) or in two alternating directions. However, there was some confusion as to whether platform preparation (ie. small flake scars on the platform of a core) should be recorded as alternating flaking. The variable may have been inconsistently applied.
Comments	Any other observations about the artefact.	

Table D1: Catchment A - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
A1	1	Silcrete	3-4	Piece									
	1	"	5-6	Flake	L>W	Plain	MorD	Plunging					
	1	"	6-7	Flake	W>L	Plain	Scar from same platform	Broken					has cortex
(8m away)	1	"	7-8	RU Flake	L>W	Ridge	Plain	Step					72x32x18mm
A2	1	Silcrete	2-3	Piece									
	1	"	2-3	Flake	L>W	Plain	Plain	Feather					
	1	"	2-3	Flake	W>L	Ridge	Plain	Feather					
	1	"	3-4	Flake	L>W	Plain	MorD	Feather					cone-split flake
	1	"	4-5	Flake	W>L	Faceted	MorD	Feather					
	1	IM	3-4	Flake	W>L	Plain	Scarred	Hinge					
	1	"	3-4	Flake	L>W	Plain	Plain	-					
A3	1	IM	1-2	Flake	L>W	Cortex	MorD	Broken					
	1	"	2-3	Flake	L>W	Cortex	MorD	Broken					
	1	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Cortex	MorD	Plain					
	1	Coarse Igneous	8-9	Pebble tool									90x80x33mm. Steeply flaked edge
A4	1	Silcrete	2-3	Flake	L>W	Ridge	MorD	Hinge					
	1	"	2-3	Flake	L>W	Plain	MorD	Step/Hinge					
	1	"	2-3	Flake	W>L	Faceted	MorD	Broken					
	3	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Plain	MorD	Feather					
	1	"	3-4	Flake	L>W	Ridge	MorD	Hinge					
	1	"	3-4	Flake	W>L	Ridge	MorD	Feather					
	1	"	3-4	Flake	W>L	Ridge	MorD	Step					
	1	"	3-4	Flake	W>L	Cortx/Ridge	Plain	Hinge					Cortex on platform
	1	"	5-6	RU Flake	L>W	Cortex	Plain	RU					57x43x27. Steep edged scraper (core?)
	1	"	5-6	RU piece	Broken								Steep retouch2 edges; but tool broken.
	1	"	5-6	Core					Flake	1	short	Uni.	57x52x30mm.
	1	IM	2-3	Flake	L>W	Cortex	Plain	Feather					
	1	"	2-3	Flake	L>W	Plain	-	Hinge					
	1	"	3-4	RU flake	altered	RU?	Cortex	RU					Steep retouch & fine usewear
	1	"	3-4	Flake	W>L	Plain	MorD	Hinge					
	1	"	4-5	Flake	L>W	Scarred	MorD	Feather					
	1	"	4-5	Flake	W>L	Cortex	Cortex	Hinge					
	1	"	5-6	RU Flake	W>L	Cortex	MorD	Plunging					43x47x18mm. Denticulate & fine retouch/usewear
	1	"	5-6	?RU flake	L>W	Cortex	Plain	Feather					
	1	"	8-9	RU flake	L>W	Cortex	Cortex	RU					80x72x26mm. Steep edged scraper.
	1	Pet.Wood	2-3	Flake	L>W	Faceted	MorD	Plunging					
	1	Basalt	10-11	Axe									108x90x50mm. Bifacially flaked. Large flake ?

Table D1: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
A5	2	Silcrete	4-5	Piece									Piece of a broken flake
	1	IM	2-3	Piece									
	1	IM	3-4	Flake	Elongate	Ridge	Plain	Broken					
A6	1	IM	3-4	Flake	Broken	Plain	-	Broken					
A7	1	Silcrete	1-2	Flake	W>L	Plain	MorD	Step					
	1	"	3-4	RU flake	L>W	Plain	Plain	RU					32x27x17mm.
	1	Basalt	4-5	Flake	L>W	Cortex	MorD	Hinge					
A8	1	Silcrete	1-2	Piece									
	1	"	1-2	Flake	W>L	Scar	-	Step					
	1	"	2-3	Piece									
	1	"	2-3	Flake	L>W	Plain	-	Feather					
	1	"	3-4	Flake	L>W	Plain	-	Step					
	1	IM	2-3	Piece									
	1	"	5-6	Flake	W>L	Ridged	-	Plunging					
	1	Basalt	2-3	Piece									
	1	"	8-9	Flake	L>W	Focal	Cortex	Hinge					
A9	1	IM	5-6	Flake	W>L	Plain	-	Hinge					
A10	1	Silcrete	1-2	Piece									
	1	"	2-3	Flake	L>W	Plain	Flaw	Feather					Broken blade flake.
	1	"	4-5	Flake	Elongate	Focal	-	Broken					
	1	IM	1-2	Piece									
	2	"	2-3	Piece									
	1	"	2-3	Flake	L>W	Plain	Scar	Step					
	1	"	3-4	Flake	W>L	Scarred	Platform	Step					
	1	Basalt	4-5	Flake	W>L	Cortex	Cortex	Hinge					
A11	1	Igneous	8-9	RU flake	L>W	Cortex	Cortex	Feather					RU distal & 1 lateral.
A12	1	Igneous	10-11	Pebble tool									100x80x58. Heavily worked; uni- & bi-facial
A13	1	Silcrete	1-2	Piece									
A14	1	IM	1-2	Piece									
	1	Basalt	4-5	Flake	W>L	Plain	Step scars	Broken					
A15	1	Silcrete	1-2	Flake	W>L	Ridge	-	Broken					
	1	"	5-6	RU Flake	W>L	Cortex	MorD	RU					45x62x23mm. Retouch on 2 edges.
A16	1	Silcrete	9-10	Piece									
A17	1	Silcrete	4-5	Core					Indeterm	1	short	Uni.	45x28x18mm. Has cortex.
A18	1	IM	2-3	RU flake	L>W	Scarred	MorD	Broken					
A19	1	Silcrete	6-7	Flake	L>W	Plain	MorD	Feather					
A20	1	Silcrete	2-3	Flake	L>W	Plain	Plain	Plunging					
A21	1	Silcrete	4-5	Flake	W>L	Cortex	Ridge	Hinge					
	1	Quartz	2-3	Flake	W>L	Cortex	Irregular	Tip broken					
A22	1	Igneous	11-12	Hammer/ anvil									Multidirectional flaking at one end; anvil pitting both flat surfaces

Table D1: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
A23	1	Quartzite	8-9	Core					Cobble	1	Long	Uni.	9x8x7cm
A24	1	Quartzite	11-12	Anvil									Pitting on cortical surface; opposite surface spalled.
A25	1	IM	11-12	Core					Cobble	2	Short	Uni.	11x8x7.5cm. Short step - terminated scars from one platform suggests possible tool use along one edge
A26	1	IM	1-2	Piece									
A27	1	Silcrete	8-9	Core					Indeterm	1	Short	Uni.	8x8.3.5cm. Cortex.
	1	Agate	4-5	Flake	L>W	Ridge & 2scars	Scars from same platform	Plunging					
A28	1	Silcrete	2-3	RU flake	L>W	?Brkn	Ridge	RU					27x22x8mm
	1	"	3-4	RU flake	L>W	Brkn	Scars from same platform	Step					Heavy flaking on lateral margin and fine RU on distal margin.
	1	Quartz	2-3	Piece									
	1	"	3-4	Core					Pebble	3	Both	Bipolar	35x32x20mm
A29	1	Silcrete	3-4	Flake	W>L	Plain	Heavy step flaking	Broken					In 2 pieces
	1	IM	3-4	Flake	L>W	Plain	Scars from same platform	Broken					
	1	Coarse IM	3-4	Flake	W>L	Ridge	Scar from same platform	Hinge					
A30	1	IM	1-2	Piece			Ridge	Hinge					
A31	1	Silcrete	1-2	Flake	W>L	Plain	Scars from same platform	Step, flaw					
	1	Igneous	3-4	Flake	L>W	Cortex	Scars from same platform	Feather					
A32	1	Silcrete	1-2	Piece									
A33	1	Silcrete	0-1	Flake	W>L	Plain	Scar from same platform	Broken					
	1	"	"	Flake	L>W	Plain	Scar from same platform	Broken					
	1	"	"	Flake	L>W	Plain	Plain	Broken					
	1	"	"	Flake	L>W	Focal	Plain	Broken/?step					
	19	"	"	Piece									
	1	"	1-2	Flake	Elong.	Indeterm	Ridge	Broken					
	1	"	"	Flake	L=W	Plain	Ridge	Hinge?/break					
	1	"	"	Flake	L>W	Plain	Scar&ridge	Broken					Cone-split broken flake
	1	"	"	Flake	L>W	Plain	M or D	Step?/broken					
	1	"	"	Flake	W>L	Plain	Plain	Feather					
	2	"	"	Piece		Collapsed							
	19	"	"	Piece									
	1	"	2-3	Flake	L>W	Ridge	M or D	Broken					
	1	"	"	Flake	L>W	Plain	OH removal, Ridge	Step					
	1	"	"	Flake	L>W	1 scar	Ridge	Step					
	1	"	"	Flake	W>L	Plain	Scars from same platform	? Step					

Table D1: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
A33 continued	2	"	2-3	Piece									
	1	"	3-4	Flake	Elong.	Plain	Ridge	Plunging					
	1	"	"	Flake	L>W	Plain	Grotty/Ind.	Feather					
	1	"	"	Piece		Rem.Plat.							
	1	Chert	0-1	Piece									
	1	"	1-2	Piece									
A34	1	IM	0-1	Flake	L>W	Focal	Scar from same platform	Feather					
	1	"	"	Flake	W>L	Plain	Scar from same platform	Feather					
	2	"	"	Piece									
	1	"	1-2	Flake	L>W	Collapsed	Cortex	Feather/ damaged					
	1	"	1-2	Flake	L>W	Plain	Cortex	Feather					
	1	"	"	Flake	L>W	Cortex	Scar from same platform	Feather					
	1	"	1-2	Flake	W>L	Focal	Cortex	Feather/ damaged					
	1	"	1-2	Flake	L>W	Partly collapsed	Scar from same platform	Hinge					
	2	"	1-2	Piece									
	1	"	2-3	Flake	Ind.	Plain	Scar from same platform	Broken					Possible usewear 1 edge
	1	"	"	Flake	W>L	Focal	Scar from same platform Cortex	Feather					
	1	"	3-4	Flake	L>W	Ridge	Scar from same platform	Broken					One lateral margin broken
	1	"	"	Piece									
	1	Black chert	3-4	Flake	W>L	Plain	Scar from same platform	Broken hinge					
	1	Quartz	1-2	Piece									
	1	"	2-3	Flake	L>W	Bipolar	Cortex	Plunging					
	1	"	"	Piece									

Table D2: Catchment B - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
B1	1	IM	3-4	Flake	L>W	Plain	MorD	Plunging					
B2	1	Silcrete	3-4	Piece									
B3	1	Silcrete	2-3	Flake	L>W	Faceted	MorD	Step					
B4	1	Silcrete	4-5	Piece									
	1	IM	2-3	Flake	L>W	Ridge	MorD	Hinge					
B5	1	Silcrete											
	1	IM											
B6	1	IM	4-5	Piece									
	1	Quartz	3-4	Piece									
B7	1	Silcrete	3-4	Piece									
	1	Silcrete	3-4	Core					Flake?	1	Long	Uni.	40x35x15mm.
	1	Igneous	6-7	Core					Pebble?	2	Long	Opposing	65x55x30mm. Cortex 30%.
B8	1	Quartz	3-4	Piece									
B9	1	Silcrete	1-2	Flake	W>L	Plain	-	Hinge					
B10	1	Silcrete	4-5	Flake	L>W	Ridge	-	Feather					
B11	1	Silcrete	3-4	Flake	L>W	Ridge	MorD	Hinge					
B12	1	Silcrete	5-6	Piece									
B13	1	Silcrete	2-3	Flake	L>W	Ridge	-	Hinge					
B14	1	Silcrete	1-2	Flake	L>W	Ridge	-	Step					
	1	Igneous	3-4	Flake	W>L	Cortex	MorD	Plunging					
B15	1	Silcrete	5-6	Flake	L>W	Plain	MorD	Plunging					
B16	1	Silcrete	<5mm	Piece									
	1	"	3-4	Flake	Elongate	Focal	MorD	Plunging					
B17	1	Silcrete	2-3	Flake	L>W	Plain	-	Step					
B18	1	Quartz	1-2	Flake	W>L	Plain	MorD	Plunging					
B19	1	Silcrete	3-4	Flake	W>L	Ridge	MorD	Plunging					
B20	1	Silcrete	2-3	Piece									
B21	1	Silcrete	3-4	Piece									
	1	IM	2-3	Core					Indeterm	1	Short	Alternating	30x25x20. 5 scars
	1	IM	3-4	Core					Indeterm	3	Long	Alternating	35x30x25. 3 scars
	1	Quartzite	9-10	Core					Pebble	1	Short	Unidirect.	95x70x30mm.
B22	2	Silcrete	2-3	Piece									
	1	"	2-3	Core					Indeterm	1	Short	Unidirect.	30x25x20mm
	1	"	3-4	Flake	W>L	Focal	MorD	Hinge					
	1	"	3-4	Flake	W>L	Plain	-	Plunging					
	1	"	4-5	Core					Flake	2	Long	Unidirect.	50x40x25mm
	1	"	5-6	Flake	Elongate	Ridge	MorD	Plunging					Ridge-straightening flake?
	1	IM	1-2	Flake	W>L	Ridge	MorD	Step					
B23	1	Silcrete	1-2	Piece									
	1	"	1-2	Flake	W>L	Ridge	-	Step					
	1	"	1-2	Flake	Elongate	Ridge	-	Hinge					
	1	"	2-3	Piece									
	1	IM	2-3	Core					Indeterm	1	Long	-	30x25x20mm. 2 scars
B24	1	Silcrete	3-4	Core					Flake	1	Long	Unidirect.	40x35x30mm. 1 scar
B25	1	IM	1-2	RU flake	L>W	Ridge	MorD	Usewear					Tiny invasive scars

Table D2: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
B26	1	IM	3-4	RU flake	L>W	Ridge	Cortex	Hinge					? retouch 1 lateral
B27	1	Silcrete	1-2	Flake	L>W	Ridge	-	Hinge					
	1	"	4-5	Core					Flake	1	Long	Unidirect.	45x30x15mm. Has scar with hinge term.
	1	IM	5-6	Flake	L>W	Ridge	Cortex	Plunging					Also cortex distally
B28	1	Silcrete	4-5	Core	L=W				Flake	1	Long	-	45x45x10mm. Coarse material; 1 scar
B29	1	Silcrete	1-2	Flake	W>L	Ridge	MorD	Step					
	1	"	2-3	Core	L>W				Flake	1	Long	Unidirect.	25x15x5mm
	1	"	2-3	Flake	L>W	Ridge	Ridge	Step					
	1	"	2-3	Flake	L>W	Plain	-	Step					10mm thick
	1	"	2-3	Piece									
	1	"	3-4	Flake	Elongate	Ridge	Ridges	Plunging					
	1	"	5-6	Core					Flake	1	Long	Unidirect.	Irregular surface; cortex on core plat.
	1	"	5-6	Piece									
	1	IM	<1	Flake	W>L	Ridge	-	Hinge					
	1	"	1-2	Flake	Elongate	Focal	Blade ridges	Hinge					6mm retouch distally
	8	Pet wood	1-2	Piece									
	12	"	2-3	Piece									
	1	"	2-3	Flake	L>W	Faceted	Blade scar	Step					
	4	"	3-4	Piece									
	6	"	4-5	Piece									
	1	"	4-5	Flake	W>L	Ridge	Cortex	Irregular					Cortex distally
	1	"	4-5	Flake	L>W	Ridge	Cortex	Step					
	1	"	5-6	Piece									
	1	"	6-7	Piece									
	1	"	9-10	Piece									
B30	1	Silcrete	3-4	Flake	L>W	Ridge	MorD	Plunging					
B31	1	Silcrete	2-3	Flake	W>L	Ridge	MorD	Step					
B32	1	Silcrete	<1	Flake	L>W	Ridge	Plain	Plunging					retouching or preparation fl
	1	"	1-2	Flake	L>W	Plain	Plain	Broken					
	1	"	1-2	Flake	L>W	Ridge	Plain	Feather					
	1	"	3-4	Flake	L>W	Ridge	MorD	Feather					distal tip broken
	1	IM	1-2	Piece									Cortex
	1	"	2-3	Flake	W>L	Ridge	Plain	Plunging					Cortex
	1	"	3-4	Flake	L>W	Focal	MorD	Hinge					
	1	"	4-5	Flake	L>W	Cortex	MorD	Feather					
	1	Pet.wood	3-4	Flake	W>L	Ridge	Plain	Step					
B33	1	IM	2-3	Flake	L>W	Ridge	MorD	Hinge					
	1	Pet.wood	2-3	Piece									
B34	1	Quartz	2-3	Core					Indeterm	2	Short	Bipolar	30x18x11mm
B35	1	Silcrete	3-4	Flake	L>W	Plain	MorD	Hinge					

Table D2: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
B36	1	Silcrete	>1										Embedded
	2	IM	<1	Flake	W>L	Plain	-	Hinge					
	1	"	<1	Piece									
	1	"	1-2	Piece									
	1	"	1-2	Flake	L>W	Plain	MorD	Hinge					
	1	"	1-2	RU flake	L>W	Ridge	-	Step					19x17x4mm
	1	"	2-3	RU piece									26x23x21mm
B37	1	Silcrete	3-4	Piece									
	1	"	3-4	Flake	L>W	Plain	-	Step					
	1	"	6-7	Flake	L>W	Ridge	MorD	Hinge					
	1	Pet.wood	4-5	Piece									
B38	1	IM	1-2	Piece									
B39	1	Quartz	4-5	Core					Indeterm	1	Long	Unidirect	47x40x25mm
B40	1	Quartz	1-2	Piece									
B41	1	Igneous	9-10	Pebble tool									95x70x25mm. Unifacial.
B42	1	IM	2-3	Flake	W>L	Plain	Scar from scame plat	Feather					
B43	1	Silcrete	3-4	Piece									
B44	1	Quartz	2-3	RU flake	W>L	Plain	Cortex	RU					

Table D3: Confluence of catchments A & B - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
AB1	1	Silcrete	4-5	Piece									
AB2	1	Silcrete	1-2	Flake	W>L	Ridge	Plain	Broken					
	1	"	1-2	Flake	Elongate	Plain	-	Hinge					
	1	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Plain	Scar from same plat.	Hinge					
	1	IM	3-4	Core					Indeterm	2	Both long & short	Uni.	38x20x17mm. Has platform preparation.
	1	"	3-4	Flake	L>W	Scarred	Cortex	Feather					Blade scar dorsal
AB3	1	Silcrete	1-2	Flake	L>W	Plain	Plain	Feather					
	1	"	2-3	Bondi pt	Elongate	Faceted	Plain	Feather/Ret.					23x6x3mm.
	1	IM	1-2	Piece									
	1	"	2-3	Flake	W>L	Scarred	Plain	Feather					
AB4	1	Silcrete	1-2	Flake	W>L	Plain	-	Step					
AB5	1	Silcrete	6-7	Piece									
AB6	1	Silcrete	2-3	Flake	W>L	Ridge	MorD	Feather					
AB7	1	Silcrete	2-3	Piece									
	1	"	2-3	Core					Indeterm	1	Long	Unidirect	27x14x13mm. Cortex
	1	Pet.wood	2-3	Piece									
AB8	1	Quartz	1-2	Piece									

Table D4: Catchment C - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
C1	1	Silcrete	0-1	Piece									
	4	"	1-2	Piece									
	1	"	2-3	Piece									
	1	"	2-3	Flake	L>W	Plain	Scar from same plat.	Step					
	1	"	2-3	Flake	W>L	Scarred	Plain	Step					
	1	"	4-5	Piece	Elongate								Broken blade flake
	1	"	>4										Embedded in A unit
	2	IM	1-2	Piece									
	1	"	3-4	Piece	Elongate	Broken	-	Plunging					? remnant worked edge
C2	1	Silcrete	2-3	Piece									
C3	1	IM	3-4	Piece									Fine regular usewear one lateral margin
C4	1	IM	3-4	RU flake	L>W	Scar & ridge	Scar from same plat.	Plunging & cortex					
C5	4	Silcrete	1-2	Piece									
	1	"	2-3	Piece	Elongate	Broken							
	1	"	3-4	Flake	Elongate	Ridge	Blade scar	Step					
	1	"	4-5	Piece	Elongate	Broken							
	1	"	5-6	Flake	Elongate	Collapsed	Plain	Plunging					
	1	"	5-6	Flake	Elongate	Plain	Scar from same plat.	Plunging					
	4	"											Embedded in A unit
C6	1	Silcrete	3-4	RU flake	W>L	Plain	Cortex	RU					Steeply worked edge
C7	1	Silcrete	4-5	Flake	L>W	Plain	-	Plunging					
	1	Quartz	1-2	Piece									
C8	1	Igneous	9-10	Core					Pebble	1	Short	Unidirect	100x75x60mm. 3 scars. Pitting 1 edge.
C9	1	Silcrete	1-2	Piece									
C10	1	Silcrete	3-4	RU flake	W>L	Removed	Scar from same plat	Feather					Steep thickest edge; crushing usewear.
C11	1	Basalt	4-5	Flake	W>L	Cortex	Cortex	Feather					
	1	"	5-6	Flake	W>L	Scarred	Scar from same plat.	Feather					
C12	1	IM	2-3	Flake	L>W	Plain	MorD	Plunging					
C13	1	Silcrete	1-2	Piece									
	1	"	2-3	Flake	L>W	Plain	Blade scar	Step					Broken blade flake
	1	"	5-6	Flake	Elongate	Faceted	Blade scar	Broken					Broken in 2 pieces
	1	"	5-6	Flake	L>W	Plain	Scar from same plat	Step					? RU left lateral
	1	IM	1-2	Flake	L>W	Cortex	Scars from same plat	Hinge					
C14	1	Igneous	3-4	Flake	L>W	Plain	Cortex	Plunging					
C15	1	Quartz	2-3	Core					Pebble	1	Long	Alternat	Blade core; anvil rested
C16	1	Silcrete	5-6	Flake	W>L	Ridge	Plain	Hinge					

Table D4: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
C17	1	IM	2-3	Piece									
	2	"	3-4	Piece									
C18	1	Silcrete	4-5	Flake	L>W	Plain	MorD	Step					
C19	1	IM	3-4	Flake	L>W	Ridge	MorD	Hinge					
	1	"	5-6	Core					Indeterm	3	Long	Alternat	57x45x37mm
C20	1	Silcrete	1-2	Flake	L>W	Plain	-	Step					
	1	"	2-3	Flake	L>W	Plain	-	Feather					
	1	"	2-3	Flake	L>W	Plain	Ridge	Feather					
	1	"	2-3	Flake	L>W	Plain	Ridge	Step					
	1	"	2-3	Piece									
	2	"	4-5	Piece									
	1	IM	<1	Flake	L>W	Ridge	MorD	Feather					
	1	"	2-3	Flake	L>W	Plain	-	Hinge					
	1	"	2-3	Flake	L>W	Plain	Ridge	Hinge					
	1	"	2-3	Flake	W>L	Plain	-	Broken					
	1	"	5-6	Flake	L>W	Focal	-	Plunging					
	1	"	5-6	Flake	L>W	Plain	-	Feather					
	1	"	5-6	Piece									
	1	Igneous	2-3	Flake	L>W	Plain	Ridge	Broken					
	1	Quartz	2-3	Flake	W>L	Scarred	-	Feather					
	1	"	3-4	Piece									
C21	1	Silcrete	4-5	Flake	L>W	Plain	-	Hinge					
	1	"	4-5	Flake	W>L	Ridge	-	Hinge					
	1	IM	4-5	Flake	L>W	Scarred	-	Step					
	1	Porcellanite	4-5	Flake	W>L	Ridge	-	Hinge					
C22	1	Silcrete	6-7	Core					Indeterm	-	-	Unidirect	Blocky; no cortex
C23	1	Silcrete	7-8	Piece									
	1	IM	1-2	Piece									
	1	"	4-5	Piece									
C24	1	Silcrete	8-9	Piece									
C25	1	Silcrete	6-7	Flake	L>W	Plain	-	Step					
	1	IM	1-2	Flake	L>W	Focal	-	Hinge					
	1	Quartz	2-3	Piece									
C26	1	IM	2-3	Flake	L>W	Ridge	-	Step					
C27	1	Silcrete	1-2	Piece									
C28	1	Silcrete	5-6	Piece									
C29	1	IM	1-2	Flake	W>L	Ridge	Platform	Broken					
	1	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Plain	Indeterm	Plunging					Cortex distally
C30	1	IM	1-2	Flake	W>L	-	-	-					
C31	1	IM	1-2	Flake	W>L	Plain	-	Broken					
C32	1	IM	3-4	Flake	L>W	Scarred	-	Hinge					
C33	1	IM	1-2	Piece									

Table D5: Catchment D - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
D1	1	Igneous	8-9	Axe									85x60x35mm. Unifacially flaked
D2	1	Silcrete	1-2	Flake	L>W	Scarred	MorD	Step					
	1	"	4-5	RU flake	L>W	Focal	MorD	Step					45x25x10mm
D3	1	Silcrete	4-5	RU flake	L>W	Ridge	Cortex	Hinge					48x20x15mm
D4	1	Igneous	6-7	Piece									Medially split pebble
D5	1	IM	4-5	Core					Flake	2	Both	? Alternat	50x30x15mm
	1	Quartz	4-5	Core					Pebble	2	Long	Unidirect	41x32x12mm
D6	1	Silcrete	5-6	Flake	L>W	Plain	MorD	Hinge					
D7	1	IM	>3										Embedded
	1	Igneous	>5										Embedded
D8	1	Igneous	5-6	Flake	L>W	Cortex	Scar from same plat.	Plunging					
D9	1	Igneous	13-14	Core					Cobble	1	Short	Unidirect.	130x50x40mm. Three scars.
D10	1	Silcrete	4-5	RU flake	W>L	Scarred	-	Broken					
D11	1	Silcrete	2-3	Flake	L>W	Scarred	-	Step					
	1		2-3	Flake	L>W	Focal	-	Broken					
	1	"	2-3	Piece									
	1	Pet.wood	2-3	Piece									
	1	Basalt	2-3	Piece									
D12	1	Silcrete	3-4	Piece									
D13	1	Silcrete	2-3	Flake	L>W	Plain	MorD	Step					
	1	IM	2-3	Flake	L>W	Plain	MorD	Hinge					
	1	"	6-7	RU flake	W>L				Flake	2	Short	Unident.	
D14	1	Silcrete	3-4	Piece									
D15	1	Silcrete	4-5	Piece									
D16	1	Silcrete	1-2	Piece									
	1	"	1-2	Flake	W>L	Faceted	-	Broken					
	1	"	2-3	Flake	W>L	Ridge	pitted	Feather					
	1	"	3-4	Flake	L>W	Plain	MorD	Feather					
	1	"	4-5	Flake	L>W	Plain	2 ridges	Step					
	1	IM	3-4	Flake	Elongate	Scarred	2 ridges	Broken					
D17	1	Silcrete	2-3	Piece									
	1	"	4-5	Flake	L>W	Plain	Cortex	Feather					
	1	IM	4-5	Piece									
D18	1	Basalt	2-3	Flake	L>W	Plain	MorD	Feather					
D19	1	Silcrete	2-3	RU flake	L>W	Plain	Platform	Hinge					Cortex on dorsal
	1	Quartz	2-3	Piece									
D20	1	Basalt	10-11	Core					Pebble	1	short	Unidirect	3 large scars
D21	1	Agate	3-4	Piece									

Table D5: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
D22	1	Silcrete	2-3	Flake	W>L	Plain	-	Step					Cortex left lateral
	1	"	2-3	Flake	W>L	Faceted	-	Broken					
	1	"	2-3	Flake	L>W	Plain	MorD	Step					
	1	"	3-4	Piece									
	1	"	4-5	Piece									40% cortex
	1	IM	3-4	Piece									
	1	"	3-4	Flake	W>L	Ridge	MorD	Hinge					
	1	Quartz	2-3	Piece									
D23	1	Silcrete	1-2	Piece									
	1	Silcrete	2-3	Piece									
	1	"	3-4	Flake	L>W	Plain	-	-					
	1	"	4-5	Flake	L>W	Plain	2 ridges	Feather					
	1	IM	4-5	Piece									
	1	"	4-5	RU flake	W>L	Plain	-	Hinge					
	1	Quartz	-	Flake	L>W	Plain	-	Step					30% Cortex
	1	"	2-3	Piece									
	1	"	6-7	Piece									
D24	1	Silcrete	3-4	Piece									
	1	IM	2-3	Piece									

Table D6: Catchment E - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
E1	1	Silcrete	3-4	Flake	L>W	Piece	Scars from same plat	Plunging					
E2	1	Silcrete	3-4	Flake	L>W	Ridge	Plain	Step					
	1	"	3-4	Flake	W>L	Plain	-	Step					
	1	"	>5										
	1	IM	2-3	Piece									Embedded
	1	IM	2-3	Flake	W>L	Plain	Scar from same plat.	Step					With cortex
	1	Basalt	4-5	Flake	L=W	Focal	-	Plunging					
E3	1	IM	1-2	Piece									Cortex distally
E4 north	1	Silcrete	1-2	Piece									
	1	"	3-4	Piece									
	1	"	3-4	Core					Indeterm	1	long	mostly uni	32x28x23mm. Blade scars
	2	IM	1-2	Piece									
	1	"	3-4	Piece									
	1	"	3-4	Flake	L>W	Cortex?	Cortex	Feather					Distal end of blade flak
	1	"	6-7	Flake	W>L	Cortex	Cortex	Feather					Broken proximally
	1	Igneous	6-7	Pebble tool									
E4 south	1	Silcrete	<1	Piece									62x56x17mm. Flaked 1 end; battered 1 end
	1	"	<1	Flake	L>W	Ridge	Ridge	Step					
	1	"	>2										
	1	"	>3										Embedded
	1	"	1-2	Flake	L>W	Plain	-	Step					Embedded
	1	"	1-2	Piece									
	1	"	2-3	Piece									
	1	"	2-3	Flake	L>W	Focal	Ridge	Step					
	1	"	2-3	Flake	L>W	Ridge	Ridge	Step					
	1	"	3-4	Core					Indeterm	2	Both	Alternating	40x25x15mm
	1	"	3-4	RU flake									Broken (28)x25x11mm Has cortex.
	1	"	4-5	Piece									
	1	"	6-7	Flake	L>W	Ridge	MorD	Plunging					
	1	IM	<1	Flake	L>W	Plain	-	Step					
	1	"	<1	Flake	L>W	Ridge	-	Step					
	1	"	1-2	Flake	L>W	Faceted	Blade scar	Step					
	1	"	1-2	Flake	L>W	Focal	Ridge	Step					
	1	"	1-2	Flake	W>L	Ridge	Ridge	Step					
	1	"	1-2	Piece									
	1	"	2-3	Piece									
	1	"	2-3	Core					Indeterm	2	Long	Unidirect	25x25x15mm
	1	"	3-4	Flake	L>W	Focal	Cortex	Hinge					
	1	"	4-5	Core					Pebble	1	Long	Unidirect	Blade core, 3 scars
	1	"	5-6	Flake	L>W	Plain	Scar from same plat.	Plunging					

Table D6: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
E4 south continued	1	Quartz	<1	Flake	L>W	Ridge	Step scars	Step					
	1	Igneous	1-2	Flake	W>L	Focal	-	Step					Green igneous
	1	"	2-3	Flake	W>L	Ridge	Ridge	Step					
	1	"	2-3	Piece									
	1	"	2-3	Core					Indeterm	1	Long	Unidirect	
	1	"	3-4	Piece									Pebble cortex
	1	"	3-4	Flake	L>W	Ridge	MorD	Step					
	1	"	4-5	Piece									
	1	"	5-6	Flake	W>L	Plain	Scar from same plat.	Plunging					
	1	"	5-6	Flake	Elongate	Plain	Ridge	Plunging					
	1	"	8-9	Pebble tool									Bifacially flaked.
E5	1	Silcrete	5-6	Core	L=W	Ridge	Old platform	Plunging	Flake	1	Short	Unidirect	60x45x45mm. Re-touched from LL to RL
E6	1	IM	3-4	Flake	L>W	Cortex	-	Feather					
E7	1	IM	5-6	Core					Indeterm	1	Short	Unidirect	60x55x35mm
E8	1	IM	1-2	Flake	Elongate	Plain	-	Step.					
	1	"	2-3	Flake	L>W	Plain	-	Feather					
	1	Pet.wood	3-4	Core					Indeterm	3	Short	Alternat	
E9	1	Igneous	3-4	Flake	L>W	Plain	Cortex	Feather					
E10	1	Silcrete	3-4	Piece									
	1	"	6-7	Piece									
	1	IM	2-3	Flake	W>L	Cortex	-	Feather					
E11	1	Silcrete	<1	Piece									
	2	"	1-2	Piece									
	3	"	2-3	Piece									
	1	"	1-2	Core					Indeterm	1	Short	Unidirect	20x20x15mm
E12	4	Pet.wood	1-2	Piece									
	1	"	1-2	Flake	W>L	Shattered	-	Hinge					
	1	"	2-3	Piece									
	1	"	2-3	Flake	-	Faceted	-	Feather					
	1	"	4-5	Core					Indeterm	1	Long	Unidirect	Split core
E13	1	Silcrete	2-3	Piece									
	1	IM	4-5	Flake	L>W	Cortex	-	Feather					Conesplit broken flake
E14	1	Silcrete	2-3	Piece									
E15	1	Silcrete	11-12	Core					Indeterm	1	Short	Unidirect	115x57x54mm
E16	1	Silcrete	6-7	Piece									
E17	1	Silcrete	1-2	Piece									Broken blade flake
E18	1	Silcrete	2-3	Piece									
	1	"	2-3	RU piece									
	1	"	3-4	Flake	W>L	Ridge	Plain	Plunging					
	1	"	3-4	Flake	W>L	Ridge	MorD	Plunging					

Table D6: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
E19	1	Silcrete	1-2	Flake	L>W	Faceted	Plain	Feather					
	1	"	1-2	Flake	W>L	Ridge	MorD	Feather					
	1	"	2-3	Flake	L>W	Ridge	MorD	Plunging					
	1	"	2-3	Piece									
	1	"	4-5	Flake	W>L	Ridge	MorD	Feather					Piece of a broken flake
	1	Basalt	5-6	Core									
E20	1	Quartz	2-3	Flake	L>W	Ridge	Cortex	Hinge/step	Flake	1	short	Unidirect	43x57x15mm
	1	"	2-3	Core									
E21	1	Silcrete	4-5	Piece					Flake	1	Short	Unidirect	28x22x16mm. Cortex
E22	1	Silcrete	2-3	Flake	W>L	Ridge	MorD	Step	Indeterm	2	Short	Alternating	23x23x17mm
	1	"	4-5	Flake	L>W	Plain	MorD	Hinge					
	1	IM	1-2	Flake	L>W	Ridge	MorD	Hinge					
	1	"	1-2	RU flake	L>W	Ridge	Plain	RU					
	1	"	1-2	RU flake	W>L	Ridge	MorD	RU					12x7x2mm.
	1	"	2-3	Flake	W>L	Ridge	MorD	Broken					13x20x5mm
	1	"	3-4	Flake	L>W	Ridge	MorD	Broken					
	1	"	4-5	Core					Spall	2	long	bipolar	42x33x10mm. Cortex. Blade core
	1	Quartz	3-4	Piece									
E23	1	IM	2-3	RU flake	L>W	Ridge	MorD	Hinge					
E24	1	Silcrete	1-2	Flake	L>W	Plain	MorD	Step					
E25	1	IM	2-3	Piece									
E26	1	Quartz	2-3	Core					Indeterm	1	Long	?Unidirect	25x20x10mm
E27	1	Silcrete	1-2	Piece									
	1	"	2-3	Piece									
	1	"	4-5	Core					Indeterm	1	Long	Unidirect	45x30x20mm.
	1	IM	1-2	Piece									
	1	"	1-2	Flake	W>L	Ridge	Scar from same plat	Hinge					
	1	"	2-3	Flake	L>W	Ridge	Scar from same plat	Plunging					Cortex distally
	1	"	2-3	Flake	L>W	Ridge	Indeterm	Broken					Grotty dorsal
	1	"	2-3	Flake	L>W	Ridge	-	Hinge					
	1	"	2-3	Piece									
	1	Igneous	2-3	Piece									
E28	1	Silcrete	2-3	Core					Indeterm	2	Short	Alternating	23x23x17mm
E29	1	Silcrete	2-3	Piece									Distal end of blade
E30	1	Silcrete	2-3	Piece									
	1	IM	2-3	Flake	L>W	Plain	Cortex	Plunging					
	1	"	3-4	Flake	W>L	Ridge	Cortex	Hinge					
	1	Igneous	9-10	Core					Pebble	1	Long	Unidirect	80x70x55mm. 1 scar

Table D6: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
E31	1	IM	1-2	Piece									
	1	"	1-2	Flake	L>W	Retouced	MorD	Plunging					
	1	"	2-3	RU flake	L>W	Ridge	MorD	Plunging					22x18x6mm. Cortex.
E32	1	Silcrete	2-3	? Core		Ridge			Flake	1	short	Unidirect	Steeply retouched
	1	"	3-4	Flake	L>W	Ridge	MorD	Plunging					
E33	1	Silcrete	2-3	Piece									
	1	Igneous	13-14	Axe					Pebble				136x83x43mm. Bifacially ground
E34	1	Silcrete	3-4	RU flake	L>W	Plain	-	Step					
E35	1	Silcrete	2-3	Flake	L>W	Plain	-	Step					
E36	1	IM	3-4	Flake	W>L	Ridge	MorD	Hinge					
E37	1	Silcrete	5-6	Piece									
E38	1	Silcrete	6-7	Core					Flake	2	Short	Unidirect	66x21x20mm
	1	Igneous	3-4	Piece									
E39	1	Silcrete	4-5	Core					Indeterm	3	Both	Unidirect	50x40x43mm

Table D7: Catchment F - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
F1	1	Igneous	7-8	Flake	W>L	Collapsed	Cortex	Feather					
F2	1	Igneous	4-5	Flake	L>W	Plain	Cortex	Feather					
F3	1	IM	1-2	Piece									
F4	1	Silcrete	2-3	Flake	W>L	Plain	-	Step					
F5	1	Silcrete	1-2	Piece									
F6	1	Silcrete	2-3	Flake	L>W	Plain	MorD	Hinge					
	1	"	3-4	Flake	L>W	Plain	MorD	Step					
F7	1	Silcrete	2-3	Flake	L>W	Cortex	-	Hinge					
	1	"	2-3	Flake	L>W	Plain	MorD	Step					
	1	"	4-5	Flake	W>L	Cortex	-	Hinge					
	1	IM	1-2	Core					Indeterm	1	Short	Unidirect	35x17x11mm
F8	1	Silcrete	2-3	Piece									
	1	"	4-5	Core					Indeterm	2	Both	Alternat	55x30x27mm
	1	"	4-5	Piece									
	1	"	5-6	Piece									
	1	IM	1-2	Flake	W>L	Cortex	MorD	Hinge					
	1	"	2-3	Flake	L>W	Plain	MorD	Hinge					
	1	"	3-4	Core					Flake	3	Long	Alternat	32x27x12mm. Cortex
	1	Quartzite	4-5	Piece									
F9	1	IM	4-5	Piece									
F10	1	Silcrete	3-4	Flake	L>W	Plain	MorD	Plunging					
F11	1	IM	2-3	Piece									
F12	1	Silcrete	3-4	Flake	L>W	Plain	MorD	Step					
F13	1	Silcrete	4-5	Piece									
F14	1	IM	2-3	RU flake	L>W	Focal	-	Hinge					
	1	Igneous	11-12	Pebble tool									Flaked at one end
F15	1	Basalt	3-4	Flake	L>W	Scarred	-	Step					
F16	1	Igneous	8-9	Piece									
F17	1	Silcrete	4-5	Flake	L>W	Focal	Plain	Feather					

Table D8: Catchment G - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
G1	1	Silcrete	4-5	Piece									
G2	1	IM	3-4	Piece									
G3	1	Silcrete	7-8	Flake	L>W	Plain	-	Feather					
	1	Quartz	1-2	Piece									
G4	1	Silcrete	3-4	Flake	L>W	Plain	-	Step					
G5	1	Silcrete	2-3	Piece									
	1	"	3-4	Piece									
	1	"	6-7	Flake	L>W	Plain	-	Step					
	1	IM	2-3	Piece									
	1	Quartz	2-3	Piece									
G6	1	Silcrete	7-8	Piece									
G7	1	Silcrete	3-4	Flake	W>L	Shattered	-	Feather					
G8	2	IM	3-4	Piece									Re-fit

Table D9: Catchment H - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
H1	1	Silcrete	2-3	Flake	W>L	Scars	-	Step					
H2	1	Silcrete	1-2	Flake	W>L	Plain	Plain	Broken					
	1	"	3-4	Flake	L>W	Ridge	Palin	Step					
H3	1	Silcrete	4-5	Flake	L>W	Plain	Scarred	Plunging					Cortex
H4	1	Silcrete	1-2	Piece									
	1	"	5-6	Piece									
	1	"	7-8	Piece									
H5	1	Silcrete	3-4	Piece									
H6	1	Silcrete	1-2	Piece									Piece of broken flake
	1	"	2-3	Piece									
	1	"	3-4	RU flake	L>W	Ridge	Plain	Broken					
	2	IM	1-2	Piece									32x19x6mm. RU 1 edge
	1	"	1-2	Flake	L>W	Ridge	Plain	Hinge					
	1	"	3-4	Flake	W>L	Plain	MorD	Plunging					
	1	"	3-4	Piece									
	1	"	4-5	RU Core					Indeterm	2	Short	Alternat	46x33x20. Reused as scraper
H7	1	Silcrete	<1	Piece									
	1	"	1-2	Flake	W>L	Ridge	MorD	Hinge					
H8	1	IM	2-3	Piece									Broken distally
H9	1	Silcrete	5-6	Flake	L>W	Ridge	MorD	Hinge					Cortex
H10	1	Silcrete	2-3	RU flake	L>W	Ridge	MorD	Broken					
H11	1	IM	2-3	Flake	L>W	Cortex	MorD	Plunging					
	1	Basalt	2-3	Flake	L>W	Plain	Plain	Hinge					
H12	1	Silcrete	5-6	Core					Indeterm	1	Short	Unidirect	60x55x35mm
	1	IM	2-3	Flake	W>L	Plain	MorD	Feather					
	1	IM	3-4	Flake	Elongate	Plain	-	Feather					
H13	1	IM	1-2	Piece									
H14	1	IM	5-6	Piece									

Table D10: Catchment I - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
I1	1	Silcrete	2-3	Piece									
	1	IM	2-3	Piece									
	1	"	3-4	RU flake	W>L	Scarred	Cortex	Hinge					Regular lateral usewear
	1	"	3-4	Flake	W>L	Plain	-	Broken					
	1	Igneous	5-6	RU flake	W>L	Cortex	Cortex	Usewear					Regular distal usewear
I2	1	Silcrete	1-2	Piece									
	1	"	3-4	Piece									
	1	"	4-5	Piece									
	1	IM	3-4	Piece									
	1	Igneous	4-5	Flake	W>L	Cortex	Scar from same plat	Hinge					
I3	1	Silcrete	3-4	Core					Indeterm	1	Long	Unidirect	32x25x22mm. Blade core plat prep
I4	1	Silcrete	1-2	Flake	W>L	Ridge	Scar from same plat	Feather					
	1	"	2-3	Piece									
	1	"	3-4	Flake	W>L	Ridge	Scar from same plat	Feather					
	1	"	5-6	Core					Indeterm	2 oppos.	Long	Bipolar	52x28x20mm. Cortex.
	1	IM	1-2	Flake	W>L	Ridge	Scar from same plat	Feather					
	1	"	2-3	Flake	W>L	Plain	Scars	Broken					
	1	Igneous	2-3	Flake	W>L	Plain	Scars	Plunging					
I5	4	Silcrete	1-2	Piece									
	6	"	2-3	Piece									
	2	"	3-4	Piece									
	1	"	3-4	Flake	L>W	Plain	Scar	Plunging					
	1	Quartz	1-2	Piece									
I6	1	Silcrete	3-4	Flake	W>L	Ridge	OH scars	Feather					
I7	1	IM	3-4	Piece									Piece of broken flake
I8	1	Silcrete	3-4	Core					-	1	-	-	One platform
I9	1	IM	2-3	Flake	L>W	Ridge	MorD	Plunging					
I10	1	IM	2-3	Flake	L>W	Scar	Cortex	Hinge					
I11	1	Silcrete	2-3	Core					Flake	1	Short	Uni	29x26x7mm. Exhausted
	1	"	2-3	Piece									
I12	1	IM	2-3	RU piece									RU on one edge
I13	2	Silcrete	1-2	Piece									
	1	"	2-3	Piece									
	1	"	3-4	Piece									
	1	"	3-4	Core					Indeterm	2	Long?	Alternat	(37)x29x27mm. Broken
	2	IM	2-3	Piece									
	1	"	6-7	Core					Cobble	1	Short	Alternat	63x54x13mm.
	1	Quartz	2-3	Piece									

Table D10: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
I14	1	Silcrete	1-2	Flake	L>W	Focal	Step scars	Feather					
	1	"	1-2	Geomet									13x12x3mm
	1	"	2-3	Flake	W>L	Cortex	Scar from same plat	Step					
	1	"	2-3	Flake	W>L	Plain	Scar from same plat	Step					
	1	"	3-4	RU flake	W>L	Scar	Scar from same plat	Step					Usewear right lateral
	1	"	3-4	RU flake	W>L	Plain	Scar from same plat	RU					25x33x8mm. Steep RU
	1	"	3-4	Flake	L>W	Scars	Scar from same plat	Feather					
	1	"	4-5	Flake	L>W	Plain	Scar from same plat	Feather					
	1	IM	1-2	Flake	L>W	Focal	Scar from same plat	Hinge					
	1	"	1-2	Flake	L>W	Focal	Step scars	Feather					
	1	"	2-3	Piece									
	1	"	3-4	RU flake	W>L	Focal	MorD	RU					37x30x6mm
I15	1	Chalcedony	1-2	Piece									
I16	1	Silcrete	1-2	Piece									
	1	"	2-3	Piece									
	1	Basalt	3-4	Flake	L>W	Plain	-	Step					
	1	"	3-4	Flake	L>W	Plain	MorD	Plunging					
I17	1	Silcrete	4-5	Piece									
	1	IM	3-4	RU flake	W>L	Plain	Cortex	RU					20x35x13mm. DenticulateRU
	1	IM	3-4	Core					Flake	1	Short	Unidirect	34x27x10mm
I18	1	Silcrete	1-2	Flake	W>L	Cortex	Cortex	Plunging					
	1	IM	1-2	Flake	W>L	Focal	MorD	Step					
	1	"	2-3	Bipolar	L>W	Focal	Plain	Bipolar					Red cortex
I19	1	Silcrete	1-2	Flake	L>W	Ridge	Plain	Feather					
	1	"	1-2	Piece									
	1	"	2-3	Flake	W>L	Plain	MorD	Feather					
	1	"	2-3	Flake	L>W	Ridge	Plain	Broken					
	1	"	2-3	Flake	L>W	Plain	Plain	Broken					
	1	"	2-3	Piece									
	1	"	3-4	Flake	W>L	Ridge	MorD	Plunging					
	1	"	6-7	Piece									
	1	IM	<1	Flake	L>W	Ridge	MorD	Feather					
	1	"	<1	Flake	W>L	Ridge	MorD	Hinge					
	1	"	<1	Geomet	W>L	Retouched	Plain	Feather					
	3	"	<1	Piece									Broken, unfinished
	1	"	1-2	Flake	W>L	Plain	MorD	Feather					
	1	"	1-2	RU flake	W>L	Focal	MorD	Feather					18x19x2mm. RU 2 edges
	1	"	1-2	RU flake	L>W	Focal	Plain	Feather					Cortex on platform
	1	"	1-2	RU flake	L>W	Ridge	MorD	Plunging					16x13x5mm. RU distally
	1	"	1-2	Geomet									12x6x2mm.

Table D10: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
I19 continued	1	"	1-2	Flake	W>L	Plain	Plain	Hinge					
	1	"	1-2	Flake	W>L	Plain	Cortex	Hinge					
	1	"	1-2	Flake	W>L	Plain	MorD	Plunging					
	1	"	1-2	Flake	L>W	Ridge	Plain	Hinge					
	4	"	1-2	Piece									
	1	"	2-3	RU piece									RU 2 edges
	1	"	2-3	RU flake	L>W	Ridge	Cortex	Hinge					23x17x3mm. RU 2 edges
	1	"	2-3	RU flake	W>L	Focal	MorD	Plunging					11x24x3mm; RU distally
	1	"	2-3	Flake	L>W	Focal	MorD	Piece					
	1	"	2-3	Flake	W>L	Plain	Plain	Plunging					
	1	"	2-3	Flake	L>W	Ridge	MorD	Plunging					Cortex 1 side & end
	1	"	2-3	Flake	W>L	Plain	MorD	Hinge					
	1	"	2-3	Flake	L>W	Ridge	MorD	Step					
	1	"	2-3	Flake	W>L	Plain	Plain	Broken					Cortex
	1	"	3-4	Flake	L>W	Cortex	MorD	Plunging					
	1	"	3-4	Piece									
	1	Quartz	1-2	Piece									
	1	"	1-2	Bipolar									
	1	"	1-2	Flake	W>L	Plain	-	Step					
	1	"	2-3	Bipolar	L>W	Ridge	Plain	Crushing					
	1	Basalt	4-5	Flake	W>L	Cortex	Cortex	Plunging					
	1	Igneous	8-9	Pebble tool									90x70x30mm. 2 flake scars
I20	1	Quartzite	4-5	RU flake	L>W	Ridge	Plain	Broken					43x28x8mm; 2 edges
I21	1	Silcrete	1-2	Piece									
	1	IM	2-3	Flake	L>W	Ridge	Plain	Plunging					
	1	Quartz	2-3	RU flake	L>W	Ridge	MorD	Plunging					26x22x5mm; RU 1 edge
I22	1	Silcrete	2-3	RU flake	L>W	Plain	Plain	Hinge					Cortex; RU 1 edge
I23	1	Silcrete	2-3	RU flake	L>W	Cortex	Plain	Feather					26x19x3mm; RU 1 edge
I24	1	Silcrete	5-6	Flake	Elongate	Plain	Ridge	Plunging					
I25	1	Silcrete	3-4	Core					Indeterm	2	Short	Alternat	37x27x19mm
I26	1	Silcrete	2-3	Core					Flake	2	Long	Uni.	31x27x8mm. Exhausted
	1	"	4-5	Flake	L>W	Plain	MorD	Plunging					
	1	IM	1-2	Flake	L>W	Focal	MorD	Hinge					Cortex on platform
	1	"	2-3	Flake	L>W	Plain	Plain	Feather					
	1	"	2-3	Flake	L>W	Ridge	Plain	Hinge					Cortex on platform
	1	Igneous	4-5	Flake	L>W	Ridge	MorD	Plunging					Cortex
I27	1	Basalt	3-4	Flake	W>L	Ridge	Plain	Hinge					
I28	1	Silcrete	1-2	Flake	L>W	Plain	Plain	Feather					
	1	"	1-2	Piece									
	1	"	2-3	Flake	L>W	Cortex	MorD	Plunging					
	1	"	5-6	RU flake	W>L	Plain	MorD	Plunging					32x52x28mm
I29	1	Silcrete	2-3	RU flake	L>W	Indeterm	Cortex						
I30	3	Silcrete	2-3	Piece									
	1	"	2-3	Flake	-	Scars	Step						
	1	"	4-5	Piece									

Table D10: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
I31	1	Silcrete	2-3	Piece									
	1	"	4-5	Piece									
	1	Igneous	9-10	Core					Pebble	-	-	Uni	100x100x60mm. Primary flakes removed
I32	1	IM	2-3	Flake	L>W	Plain	-	Feather					
	1	"	2-3	Flake	W>L	Cortex	-	Feather					
	1	"	2-3	Piece									
	1	"	4-5	Core					-	3	-	Alternat	50x35x25mm
I33	2	Silcrete	2-3	Piece									
	1	"	2-3	Flake		Plain	-	Hinge					
	1	"	2-3	Flake	-	Plain	-	Step					
	1	"	2-3	Flake	-	Faceted	-	Step					
	2	"	3-4	Piece									
	1	"	3-4	RU piece									RU 1 margin
	1	Igneous	2-3	Piece									
	1	"	6-7	Pebble tool									60x35x18mm
	1	Quartz	1-2	Piece									
	1	IM	3-4	Piece									Cortex
	1	"	5-6	Flake	-	Cortex	-	Feather					Cortex
I34	1	Silcrete	4-5	Flake	-	Scars	-	Step					
	1	"	6-7	Piece									
	1	"	10-11	Core					Cobble	2	Short	Uni	100x70x50mm
I35	1	Silcrete	4-5	RU piece									45x30x10mm
I36	1	Silcrete	2-3	Flake	-	Plain	-	Step					
	1	"	3-4	Flake	W>L	Scars	-	Step					
	1	"	3-4	Piece									
	1	Quartz	2-3	Piece									
I37	8	Silcrete	1-2	Piece									
	1	"	2-3	Core									
	1	"	2-3	Flake	-	Scars	-	Feather	-	1	Short	Uni	20x20x18mm
	1	"	2-3	Piece									
	1	"	3-4	Piece									
	1	"	3-4	Flake	-	Scars	-	Step					
	5	IM	1-2	Piece									
	1	"	1-2	Flake	-	Shattered	Blade scars	-					
	1	"	1-2	Core	-	Faceted		Step					1 flake scar from ventral removed bulb
	1	"	2-3	Flake	Elongate	Scars	-	Hinge					
	4	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Plain	-	Feather					
I38	1	Silcrete	3-4	Piece									
	1	"	5-6	Piece									
I39	1	Silcrete	3-4	Piece									
I40	2	Silcrete	3-4	Piece									
I41	1	Silcrete	5-6	Piece									

Table D10: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
I42	1	Silcrete	1-2	Piece									
	1	"	2-3	Flake	-	Scars	-	Feather					
	1	"	5-6	Flake	-	Plain	-	Feather					
	2	IM	1-2	Piece									
	1	"	1-2	Flake	-	Scars	-	Step					
	1	"	2-3	Flake	-	Plain	-	Feather					
	1	"	3-4	Piece									
	1	Quartz	1-2	Piece									
	1	"	3-4	Piece									
	1	Pet.wood	3-4	Core					-	2	Both		-
I43	1	IM	3-4	Piece									Broken blade flake

Table D11: Confluence of catchments I & J - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
IJ1	1	IM	1-2	Piece									Broken blade flake
IJ2	1	IM	<1	Piece									
	1	"	1-2	Flake	W>L	Shattered	-	Step					
	1	"	1-2	Flake	-	Scars	-	Step					Conesplit broken fl
	1	"	1-2	Piece									
	1	"	2-3	Flake	Elongate	Scars	-	Feather					
IJ3	1	Silcrete	<1	Piece									
	8	"	1-2	Piece									
	2	"	2-3	Piece									1 broken blade flake
	1	"	3-4	Flake	W>L	Scars	-	Feather					
	1	"	4-5	Core					Cobble	1	Long	Uni	40x38x28cm. Poor
	2	IM	<1	Piece									
	1	"	1-2	Geomet									Partly made only
	1	"	1-2	Flake	Elongate	Faceted	-	Step					
	1	"	1-2	Flake	-	Scars	-	Step					
	2	"	1-2	Piece									
	1	"	2-3	Piece									
	1	"	3-4	Core					Indeterm	2	Long	Uni	35x23x20. Weathered
IJ4 #1	2	Silcrete	1-2	Piece									
	1	"	1-2	Flake	-	Plain	-	Step					
	2	"	2-3	Piece									
	1	"	2-3	Flake	W>L	Scars	-	Step					
	2	"	3-4	Piece									
	1	"	4-5	Flake	L>W	Plain	-	Step					
	1	IM	<1	Piece									
	1	"	1-2	BB									20x10x3mm
	1	"	2-3	Piece									
	1	"	2-3	Bipolar									Broken
IJ4 #2	1	Silcrete	2-3	Flake	W>L	Plain	Scar from same plat	Hinge					
	1	"	3-4	Piece									
IJ4 #3	9	Silcrete	1-2	Piece									2 with cortex
	1	"	1-2	Flake	L>W	Ridge	Scar from same plat	Step					
	2	"	2-3	Piece									
	1	"	2-3	Core					Indeterm	1	Long	Uni	28x28x21mm. Anvil rested
	1	"	2-3	? Core	L>W	Plain	Scar from same plat	Retouched					Retouched flake - intended as a core?
	1	"	2-3	Flake	W>L	Collapsed	Plain	Feather					
	1	"	3-4	Flake	W>L	Ridge	Plain	Step					
	1	"	3-4	Flake	L>W	Focal	Scar from same plat	Step					
	1	"	3-4	Piece									
	1	"	5-6	Flake	W>L	Cortex	Scar from same plat	Step					Broken in 2 pieces

Table D11: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
IJ4	1	IM	<1	Piece									
#3	1	"	1-2	Flake	L>W	Plain	Scar from same plat	Feather					
continued	1	"	3-4	Flake	Elongate	Plain	Scar from same plat	Feather					
IJ4	2	Silcrete	<1	Piece									
#4	6	"	1-2	Piece									
	1	"	1-2	Flake	W>L	Scars	Scar from same plat	Feather					
	1	"	1-2	Geomet									(15)x18x5mm. Broken
	1	"	1-2	Flake	W>L	Plain	Scar from same plat	Hinge					
	1	"	1-2	Flake	W>L	Rough	Scar from same plat	Step					
	1	"	2-3	Flake	L>W	Plain	Scar from same plat	Step					Broken in 2 pieces
	1	"	2-3	Flake	L>W	Cortex	Scar from same plat	Step					
	1	"	2-3	Flake	W>L	Plain	Scar from same plat	Step					
	1	"	2-3	Flake	W>L	Scars	Scar from same plat	Step					
	4	"	2-3	Piece									
	1	"	3-4	Flake	W>L	Plain	Scar from same plat	Feather					
	1	"	>4										Embedded
	2	IM	1-2	Piece									
	1	"	3-4	Flake	L>W	Ridge	Scar from same plat	Feather					
	1	"	4-5	Piece									
IJ5	5	Silcrete	1-2	Piece									
	1	"	1-2	Flake	W>L	Scars	Ridge	Hinge					
	1	"	2-3	Flake	L>W	Ridge/scar	Scar from same plat	Step					
	1	"	2-3	Flake	L>W	Plain	Scar from same plat	Step					
	1	"	2-3	Flake	L>W	Plain	Scar from same plat	Step					
	1	"	2-3	Backed flake	W>L	Plain	Scar from same plat	Backed					
	1	"	2-3	Piece									
	1	"	>2										Embedded
	1	"	>3										Embedded
	1	"	3-4	Flake	L>W	Ridge	Ridge	Feather					
	1	"	5-6	Flake	L>W	Ridge	Scar from same plat	Plunging					
	1	IM	<1	Piece									
	1	"	1-2	Piece									

Table D11: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
IJ5 continued	1	"	1-2	Geomet									14x6x3mm
	1	"	>2										Embedded
	1	"	2-3	Flake	L>W	Plain	Plain	Plunging					
	2	"	2-3	Piece									1 piece of plunging flak
	1	"	3-4	Piece									
	1	Pet.wood	2-3	Piece									
	1	Quartz	1-2	Piece									
	1	"	2-3	Piece									
	1	"	>3										Embedded
	1	Chalcedony	<1	Piece									
	1	"	1-2	Piece									
	1	Black glass	3-4	RU piece									38x25x4mm. RU 2 edges
IJ6	1	Silcrete	4-5	Flake	W>L	Plain	MorD	Step					
IJ7	1	Silcrete	1-2	Piece									
	1	"	2-3	Piece									
	1	"	>5										Embedded
IJ8 #1	1	Silcrete	3-4	RU flake	W>L	Removed	Scar from same plat	Step					
	1	"	3-4	Flake	Elongate	Plain	Scar from same plat	Hinge					
	1	"	3-4	Piece									
	1	"	4-5	Flake	L>W	Plain	Scar from same plat	Plunging					Cortex distally
	1	IM	<1	Flake	L>W	Focal	Scar from same plat	Step					
	1	"	1-2	Flake	L>W	Cortex	Scar from same plat	Step					
	1	"	1-2	Flake	W>L	Focal	Scar from same plat	Hinge					
	2	"	1-2	Piece									1 piece blade flake
	1	"	3-4	Core		Cortex	Scar from same plat	Removed	Flake	1	Both	Uni with plat prep	RAS core with scars from LL to RL across ventral face
	1	Quartz	1-2	Piece									
	1	"	3-4	Flake	L>W	Focal	Plain	Plunging					
IJ8 #2	1	Silcrete	2-3	Flake	L>W	Plain	Scar from same plat	Step					
	1	"	2-3	Flake	W>L	Plain	Scar from same plat	Step					
	1	"	3-4	Piece									
IJ8 #3	1	Silcrete	1-2	Flake	L>W	Collapsed	Scar from same plat	Hinge					
	1	"	1-2	Flake	W>L	Focal	Scar from same plat	Step					
	1	"	1-2	Flake	W>L	Plain	Scar from same plat	Step					
	1	"	1-2	Piece									
	2	"	2-3	Piece									

Table D11: Continued ...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
IJ8	1	"	2-3	Geomet	L>W								22x12x3mm
#3	1	IM	1-2	Flake	W>L	Plain	Scar from same plat	Step					
	2	"	1-2	Piece									
	1	"	2-3	Flake	L>W	Plain	-	Step					
	1	"	2-3	Flake	L>W	Plain	Scar from same plat	Feather					
	1	"	2-3	Flake	W>L	Cortex	Plain	Step					
	1	"	4-5	Flake	L>W	Cortex	Scar from same plat	Plunging					
IJ8	1	Silcrete	3-4	Flake	W>L	Plain	MorD	Feather					
#4	1	"	3-4	Flake	L>W	Plain	MorD	Plunging					
IJ9	2	Silcrete	1-2	Piece									
	1	"	2-3	Geomet									22x12x4mm. Chord usewear. V nice piece
	2	"	2-3	Piece									
	1	"	2-3	Flake	W>L	Plain	Plain	Step					
	1	"	3-4	Flake	L>W	Plain	Scar from same plat	Feather					
	1	"	>3										Embedded
	1	"	>9										Embedded
	1	IM	2-3	Flake	W>L	Focal	MorD	Broken					
	1	"	3-4	Core					Indeterm	2	Short	Uni	33x26x20mm. Cortex
IJ10	1	Silcrete	1-2	Bipolar									
	1	"	3-4	Flake	L>W	Focal	Crushing	Plunging					
	1	"	5-6	Flake	L>W	Plain	Scar from same plat	Step					

Table D12: Catchment J - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
J1	1	Silcrete	2-3	Flake	W>L	Plain	Step scars	Step					
J2	1	Silcrete	2-3	Piece									
J3	1	IM	3-4	Flake	L>W	Cortex	Scar from same plat	Hinge					
J4	3	Silcrete	1-2	Piece									
	1	"	1-2	Flake	L>W	Scar	Scar from same plat	Step					
	1	"	1-2	Flake	W>L	Focal	Scar from same plat	Step					
	1	"	2-3	Flake	L>W	Plain	Scar from same plat	Feather					
	1	"	2-3	Piece									
	1	"	3-4	Flake	Elongate	Plain	Step scars	Plunging					
	1	"	3-4	Core					Indeterm	1	Long	Uni	39x20x15mm. Blade core; plat prep.
	1	"	4-5	Core					Indeterm	1	Long	Uni	43x28x13mm. Blade core; plat prep.
	1	"	4-5	Flake	W>L	Plain	MorD	Plunging					
	1	"	4-5	Piece									
	1	"	5-6	Flake	Elongate	Plain	Ridge	Feather					
	1	"	5-6	Flake	W>L	Plain	Scar from same plat	Plunging					
	1	"	6-7	RU piece									Distal end of a flake
	1	"	9-10	Core					Indeterm	2	Long	Uni & alt	92x51x38mm
	1	IM	1-2	Piece									
	1	Quartzite	5-6	Piece									
J5	1	Silcrete	3-4	Flake	L>W	Plain	-	Feather					
	1	IM	3-4	Piece									
	1	Basalt	6-7	RU flake	W>L	Plain	-	-					
J6	1	Silcrete	1-2	Flake	L>W	Plain	-	Step					
	1	"	4-5	Flake	W>L	Plain	-	Step					
	1	"	5-6	Flake	L>W	Plain	-	Plunging					
	1	IM	2-3	Flake	L>W	Plain	-	Step					
J7	1	Silcrete	2-3	Flake	W>L	Plain	-	Step					
	1	IM	2-3	Flake	L>W	Plain	Cortex	Feather					
	1	"	3-4	Flake	L>W	Plain	MorD	Step					Cortex
J8	1	Silcrete	2-3	Flake	L>W	Shattered	-	Feather					Conesplit broken fl
J9	1	Silcrete	2-3	Piece									
J10	1	Silcrete	5-6	RU flake	L>W	Plain	Indeterm	RU					55x70x25mm. Heavy step retouch distally
J11	1	Silcrete	4-5	Flake	L>W	Scar	MorD	Plunging					
J12	1	Silcrete	7-8	Flake	Elongate	Scar	MorD	Hinge					
	1	Pet.wood	2-3	RU flake	W>L	Ridge	MorD	Step					20x18x3mm
J13	1	IM	1-2	RU flake	L>W	Ridge	Cortex	Hinge					Useweear both laterals
J14	1	IM	3-4	Piece									Cortex

Table D12: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
J15	1	Quartz	2-3	Core					-	-	-	-	26x16x10mm
J16	1	Silcrete	2-3	Flake	-	Plain	-	Step					
	1	"	4-5	Core					-	2	Both	Alternat	48x38x16mm
	1	Igneous	5-6	Flake	-	Cortex	Cortex	Feather					Primary flake
J17	1	IM	1-2	Piece									Cortex
J18	1	Silcrete	2-3	Piece									
J19	1	Silcrete	1-2	Flake	W>L	Ridge	MorD	Feather					
	1	"	1-2	Piece									Piece of a broken flake
	1	"	4-5	Flake	L>W	Ridge	MorD	Plain					
	1	"	6-7	RU flake	W>L	Ridge/scar	Cortex	RU					Heavy retouch
	1	IM	<1	Piece									Piece of a broken flake
	1	"	1-2	BB	L>W	Scar/faceted	MorD	Broken					(14)x8x3mm.
	1	Basalt	4-5	RU flake	L=W	Plain	MorD	RU					44x47x10mm. Heavy retouch all edges
J20	1	Silcrete	2-3	Flake	L>W	Ridge	MorD	Feather					
J21	1	Silcrete	1-2	Flake	L>W	Scar	MorD	Hinge					
	1	"	1-2	Piece									
	1	"	3-4	Flake	L>W	Ridge/scar	MorD	Step					Cortex on tip
	1	"	3-4	Flake	W>L	Ridge	MorD	Feather					
	1	"	6-7	Core					Flake	2	short	Alternat	67x37x25mm. Cortex
	1	IM	2-3	Flake	W>L	Scar	Plain	Step					
J22	1	IM	1-2	Flake	W>L	Ridge	MorD	Hinge					
J23	1	IM	2-3	Piece									
J24	1	Silcrete	2-3	RU flake	L>W	Ridge	MorD	Step					25x16x6mm. RU 1 edge
	1	"	4-5	Flake	L>W	Ridge	MorD	Hinge					
J25	1	Silcrete	1-2	Flake	L>W	Ridge	MorD	Hinge					
	1	"	1-2	Flake	L>W	Focal	MorD	Plunging					
	1	"	1-2	Flake	L>W	Plain	MorD	Feather					Cortex 1 edge
	1	"	1-2	Flake	L>W	Ridge	MorD	Feather					
	1	"	1-2	Piece									
	1	"	2-3	Flake	W>L	Ridge	MorD	Step					
J26	2	Silcrete	1-2	Piece									
	1	"	2-3	Flake	L>W	Ridge	MorD	Feather					Broken distally
	1	"	2-3	Flake	W>L	Ridge	Plain	Step/hinge					
	2	"	2-3	Core					Indeterm	2	Long	Alternat	22x15x10mm; and 26x22x9mm
	1	"	3-4	Flake	L>W	Plain	MorD	Step					
	1	"	4-5	Flake	L>W	Focal	MorD	Plunging					
	1	IM	3-4	RU flake	L>W	Ridge	MorD	Step					35x20x3mm. RU 2 edges
	1	"	4-5	Core	L>W	Scar	MorD	Plunging	Flake	2	Both	Alternat	45x30x15mm. Cortex
	1	Igneous	2-3	Flake	L>W	Ridge	MorD	Hinge					
	1	"	5-6	Pebble tool									45x44x?mm. Cortex
	1	Pet.wood	4-5	Flake	W>L	Ridge	MorD	Step					Cortex

Table D12: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
J27	1	Silcrete	2-3	Flake	W>L	Ridge	Plain	Hinge					
	2	"	4-5	Core					Flake	1	Short	Uni	42x32x9mm with cortex. 43x32x14mm
J28	1	Silcrete	1-2	Piece									
	1	"	2-3	Flake	W>L	Ridge	MorD	Feather					
	1	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Plain	MorD	Step					
	1	"	3-4	Core					? Flake	2	Both	Alternat	32x25x11mm
	1	IM	2-3	Flake	W>L	Focal	Cortex	Step					
J29	2	Silcrete	1-2	Piece									
	1	"	1-2	Flake	L>W	Ridge	MorD	Step					
	1	"	1-2	Flake	W>L	Plain	Plain	Feather					
	1	"	1-2	Flake	L>W	Plain	-	Step					
	1	"	2-3	Flake	W>L	Plain	Plain	Step					
	3	"	2-3	Piece									
	1	"	2-3	Flake	L>W	Plain	-	Step					
	1	"	2-3	Flake	W>L	Scar	MorD	Hinge					
	1	"	2-3	Flake	W>L	Plain	-	Step					
	1	"	3-4	Flake	L>W	Scar	Scar	Feather					
	1	IM	1-2	Piece									
	1	"	1-2	Flake	L>W	Ridge	MorD	Feather					Piece of a broken flake
	1	"	2-3	RU flake	W>L	Plain	MorD	RU					
	1	Igneous	4-5	RU flake	L>W	Cortex	Plain	Plunging					22x30x5mm. RU on 4 edges
													48x35x9mm. RU 2 large notches; scraper
	1	Pet.wood	3-4	Piece									Piece of broken flake
J30	1	Silcrete	2-3	Flake	L>W	Ridge	MorD	Step					
	1	"	3-4	Flake	L>W	Plain	MorD	Step					
J31	1	Silcrete	3-4	RU flake	L>W	Focal	Plain	Plunging					36x36x4mm
	1	"	4-5	Flake	L>W	Plain	MorD	Step					
J32	1	Silcrete	2-3	Flake	L>W	Ridge	MorD	Plunging					
J33	1	Silcrete	<1	Piece									
	1	"	1-2	Flake	L>W	Plain	Cortex	Feather					
	1	"	1-2	Flake	L>W	Ridge	Plain	Broken					
	1	"	1-2	Flake	L>W	Ridge	Plain	Feather					Cortex on platform
	4	"	1-2	Piece									Pieces of broken flakes
	1	"	2-3	RU flake	W>L	Plain	Plain	Hinge					(23)x21x3mm; RU distally
	1	"	2-3	Flake	L>W	Plain	MorD	Plunging					
	1	"	2-3	Flake	L>W	Ridge	Cortex	Feather					
	1	"	2-3	Flake	L>W	Ridge	Plain	Plunging					
	1	"	2-3	Flake	L>W	Ridge	MorD	Hinge					
	1	"	2-3	Flake	L>W	Ridge	MorD	Step					
	1	"	2-3	Flake	L>W	Ridge	MorD	Plunging					
	1	"	2-3	Flake	L>W	Scar	Plain	Step					
	1	"	2-3	Flake	L>W	Scar	MorD	Hinge					

Table D12: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
J33 continued	4	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Plain	Plain	Broken					
	1	"	4-5	Piece									
	1	IM	1-2	Piece									
	1	"	1-2	Flake	L>W	Plain	Plain	Hinge					
	1	"	1-2	Flake	L>W	Scar	Plain	Hinge					
	1	"	1-2	Flake	L>W	Plain	Plain	Step					
	1	"	1-2	Flake	W>L	Ridge	MorD	Feather					
	1	"	2-3	RU flake	Elongate	Ridge	MorD	Step					27x8x3mm. RU 1 edge
	1	"	2-3	RU flake	L>W	Cortex	MorD	RU					22x17x3mm
	1	"	2-3	RU flake	W>L	Scar	Plain	RU					Cortex 1 edge
	1	"	2-3	RU piece		Broken							RU 3 edges
	1	"	2-3	Flake	L>W	Scar	MorD	Plunging					
	1	"	2-3	Flake	W>L	Ridge	MorD	Hinge					
	1	"	2-3	Flake	W>L	Ridge	Cortex	Plunging					
	1	"	2-3	Flake	W>L	Ridge	MorD	Plunging					
	1	"	2-3	Core					Indeterm	1	Long	Uni	27x20x12mm
	1	"	2-3	Piece									
	1	"	3-4	Flake	L>W	Ridge	MorD	Feather					
	1	"	3-4	Flake	L>W	Ridge	Plain	Step					
	1	Basalt	7-8	Pebble tool									80x65x35mm; cortex
	1	Quartzite	8-9	Pebble tool									87x80x50mm; cortex
	1	Porcellanite	1-2	Piece									
	1	"	2-3	Flake	L>W	Ridge	Plain	Hinge					
J34	1	Silcrete	1-2	Piece									
	1	IM	2-3	Flake	W>L	Plain	Scar	Hinge					
J35	1	Silcrete	<1	Piece									
	12	"	1-2	Piece									1 piece of blade flake
	1	"	1-2	Flake	W>L	Ridge	Plain	Feather					
	1	"	1-2	Flake	L>W	Plain	Plain	Feather					
	1	"	2-3	Core					Indeterm	1	Long	Uni; anvil rested	25x22x12mm. Blade scars, plat prep
	6	"	2-3	Piece									1 with cortex
	1	"	2-3	Flake	Elongate	Faceted	Scar from same plat	Plunging					
	1	"	2-3	Flake	L>W	Plain	Step						
	1	"	2-3	Flake	L>W	Scars	Scar from same plat	Step					
	1	"	2-3	Flake	W>L	Scars	" " "	Plunging					
	1	"	2-3	Flake	-	Ridge/scars	-	Broken					
	1	"	2-3	Core					Indeterm	2	Both	Alternat	20x17x14mm; Anvil rested.
	1	"	3-4	Flake	L>W	Ridge	Indeterm	Plunging					
	4	"	3-4	Piece									2 with cortex

Table D12: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
J35	1	"	3-4	Core					Indeterm	1	Long	Uni	32x23x12mm. Blade core; plat. prep. exhausted.
continued	1	"	3-4	Core					Indeterm	1	Both	Uni	38x35x16mm. Blade core; plat prep.
	1	"	3-4	Core					Indeterm	2	Long	Uni	23x21x16mm. Blade core; plat prep; anvil rested; exhausted.
	1	"	4-5	Core					Indeterm	2	Both	Uni	48x25x20. Blade scar
	1	"	4-5	Core					Indeterm	1	Long	Uni	49x21x15mm. Blade scar; cortex
	1	"	>4										Embedded
	1	"	5-6	Flake	L>W	Plain	Scar from same plat	Plunging					
	2	IM	<1	Piece									
	1	IM	1-2	Flake	L>W	Plain	Scar from same plat	Step					Cortex
	1	"	1-2	Flake	L=W	Ridge	Scar from same plat	Hinge					
	1	"	1-2	Flake	W>L	Ridge	Scar from same plat	Step					
	3	"	1-2	Piece									
	1	"	2-3	Flake	W>L	Ridge	MorD	Feather					
	1	"	2-3	Flake	L>W	Scars	Scar from same plat	Step					
	1	"	2-3	Core		Plain	-	Removed	Flake	1	Long	Uni.	24x18x14. Exhausted RAS core; flaked from LL to RL
	1	"	2-3	BB	L>W	Focal	Cortex	Indeterm					21x12x4mm. Backed flake; Retouched RL
	1	"	2-3	Piece									
	1	"	3-4	Core					Indeterm	1	Both	Alternat	28x26x25mm. Cortex 1 end.
	1	Porcellanite	2-3	Piece									
	1	Basalt	5-6	Flake	L>W	Cortex	Cortex	Feather					
J36	1	Silcrete	<1	Piece									
	1	"	1-2	Flake	L>W	Plain	Scar	Hinge					
	1	"	1-2	Flake	W>L	Plain	Plain	Step					
	12	"	1-2	Piece									
	1	"	2-3	Flake	W>L	Plain	Scar from same plat	Hinge					
	3	"	2-3	Piece									
	1	IM	1-2	Piece									
	1	"	1-2	Flake	L>W	Cortex	Scar from same plat	Broken					
	1	"	2-3	Core		Plain	MorD	Plunging	Flake	1	Long	Uni	25x25x11mm. RAS flake core.
J37	1	IM	2-3	Flake	Elongate	Plain	Scar from same plat	Step					
J38	1	Quartz	3-4	Bipolar core					Pebble	2 opposite	Both	Bipolar	37x22x16mm. Cortex

Table D12: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
J39	3	Silcrete	2-3	Piece									2 are pieces of flakes; 1 was elongate
	1	"	2-3	Flake	Elongate	Focal	Scar from same plat	Feather					
	1	"	2-3	Flake	W>L	Plain	MorD	Step					
J40	1	Silcrete	3-4	Piece									
J41	1	Silcrete	<1	Piece									
	2	"	1-2	Piece									
	1	"	1-2	Geomet									13x10x4mm. Chord usewear
	1	"	1-2	Flake	W>L	Plain	Plain	Feather					
	3	"	2-3	Piece									
	1	"	2-3	Flake	L>W	Ridge	Plain	Feather					
	1	"	3-4	Piece									
	1	"	3-4	Flake	L>W	Plain	Plain	Step					
	1	"	4-5	Piece									
	1	IM	3-4	Core					? Flake	2	Long	Uni	36x27x12mm. Blade core with plat.prep. ?RAS core
J42	2	Silcrete	1-2	Piece									
	1	"	1-2	Flake	-	Faceted	-	Broken?					
	1	"	2-3	BB									Bondi point fragment
	7	"	2-3	Piece									
	1	"	3-4	Flake	Elongate	Plain	-	Feather					
	1	"	3-4	Piece									
	1	"	4-5	Flake	L>W	Scars	-	Feather					
	1	IM	1-2	Flake	-	Faceted	-	Broken?					
	1	"	1-2	Piece									
J43	2	Silcrete	<1	Piece									
	1	"	<1	Flake	L>W	Scars	-	Step					
	1	"	<1	Flake	-	Scars	-	Step					
	1	"	1-2	Geomet									18x14x3mm
	1	"	1-2	Flake	-	Plain	-	Step					
	1	"	1-2	Flake	-	Scars	-	Step					
	1	"	1-2	Flake	-	Scars	-	Broken?					
	11	"	1-2	Piece									
	1	"	2-3	Flake	-	Scars	-	Broken					
	2	"	2-3	Flake	-	Plain	-	Broken?					
	1	"	2-3	RU piece									25x16x10mm
	10	"	2-3	Piece									
	1	"	3-4	Flake	W>L	Plain	-	Broken?					
	1	"	3-4	Flake	-	Plain	-	Feather					
	1	"	4-5	Flake	W>L	Scars	-	Hinge					
	1	"	6-7	RU piece									60x40x8mm. Broken

Table D12: continued...

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
J43 continued	1	Silcrete	6-7	Flake	L>W	Plain	-	Feather					Conesplit broken fl
	1	"	8-9	Flake	L>W	Scars	-	Hinge					
	1	IM	<1	Piece									
	1	"	1-2	Flake	Elongate	Shattered	-	-					
	1	"	1-2	Flake	-	Faceted	-	Step					
	4	"	1-2	Piece									
	1	"	2-3	Piece									
	1	Quartz	2-3	Piece									
	1	Igneous	7-8	Pebble tool									
J44	1	Silcrete	3-4	Flake	L>W	Plain	Scar from same plat	Step					
	1	"	3-4	Flake	W>L	Plain	Scar from same plat	Feather					
	1	IM	2-3	Geomet									30x19x3mm.

Table D13: Catchment watersheds - artefact record

Location	No.	Raw material	Size in cm	Type	Flake shape	Flake platform	Flake dorsal	Flake termination	Core body	No. of platforms	Striking axis	Flaking pattern	Comments
BD1	1	Silcrete	3-4	Core					Flake	2 (1 cortex)	Long	Alternat	40x30x15mm. Cortex
BD2	1	IM	3-4	Core					Flake	2	Short	Alternat.	40x35x15mm
	1	Chalcedony	1-2	Flake	L>W	Scarred	MorD	Step					Hinge term on M scar
CD1	1	Silcrete	4-5	Piece									
EF1	1	Silcrete	3-4	Piece									
EF2	1	IM	2-3	Piece									
FG1	1	Silcrete	<1	Piece									
FG2	1	Silcrete	<1	Piece									
FG3	1	Silcrete	<1	Piece									
	1	"	2-3	Piece									
HI1	1	Silcrete	1-2	Piece									

APPENDIX E:

LONG TABLES

Table E1: Artefact distribution along transect from south to north through the Bengalla lease (along main A-B drainage line)

Distance	Profile	Gully			Hillslope			Tributary gullies Bengalla			Total	Raw Materials						Artefact types				
	height asl in m	No.	extent in ha	Density /ha	No.	Extent in ha	Density /ha	No.	Extent in ha	Density /ha	No.	Silc.	IM	P.wd	Q.tz	Ign.	Other	BB	RU	Pebble tools	Core	Debitage
Hunter flat	c.135																					
0	135				18	0.06	300/ha				18	18							4		2	12
200	136																					
400	137																					
600	138				94	0.06	1567/ha				94	40	6	31	1	10	6		10	1	19	74
800	139.5																					
1km	141				54	11.57	5/ha				54	27	11	5	1	7		1	6	2	10	35
1200	142.5																					
1400	144																					
1600	146																					
1800	148	10	0.41	24/ha	11	10.28	1/ha	0	0.07	0	21	13	4	1		2	1		4	1	1	15
2km	149	78	0.09	867/ha	1	0.43	2/ha	29	0.19	153/ha	108	63	30	3	9	2	1	2	4		12	90
2200	150	31	0.03	1033/ha	5	0.09	56/ha				36	24	9			1	2	2				31
2400	152.5				2	0.50	4/ha				2		2						1			1
2600	155	14	0.03	467/ha							14	3	7		4							14
2800	157.5	386	0.41	942/ha	2	0.42	5/ha				422	294	88	8	10	11	11	8	8	4	9	265
3km	160				27	0.31	87/ha	7	0.01	700/ha												
3200	163							44	0.85	52/ha	44	25	15			2	2			2	1	41
3400	166	50	0.22	227/ha				5	0.12	42/ha	55	29	22		1	2	1		5	2	2	46
3600	170	60	0.13	462/ha							60	31	15		11	2	1		1		5	54
3800	173	10	0.13	77/ha	5	0.16	31/ha				15	6	9								2	13

Table E2: Schematic artefact distribution along transect through catchments A & B, and catchments I & J

(extent of exposures, number of artefacts, artefact density and artefact assemblages calculated for height asl in 10m intervals, not distance along the profile)

Distance	Profile	Gully			Hillslope			Total	Raw Materials						Artefact types				
	height asl in m	No.	extent in ha	Density /ha	No.	Extent in ha	Density /ha	No.	Silc.	IM	P.wd	Q.tz	Ign.	Other	BB	RU	Pebble tools	Core	Debitage & buried
4km	176																		
4200	180																		
4400	183	4	0.09	44/ha				4	3			1							4
4600	186																		
4800	189																		
5km	193	32	0.31	103/ha		0.01		32	14	13	3	2			1	2		4	25
5200	197																		
5400	202	20	0.24	83/ha	82	0.29	283/ha	102	70	25	1	3	2	1					102
5600	206																		
5800	210	23	0.48	48/ha	5	0.27	19/ha	28	11	7		4	3	3		4	2	4	18
6km	218																		
6200	227	90	0.50	180/ha	1	0.30	3/ha	91	31	18	37	1	4			6	2	5	78
6400	237	22	0.73	30/ha	6	0.37	16/ha	28	13	10		2	3			3	2		23
6600	247	14	1.17	12/ha	1	0.11	9/ha	15	12	3						3		2	10
6800	259	18	1.47	12/ha	3	0.12	25/ha	21	15	3		1	2					4	17
7km	277	6	0.80	8/ha	4	0.26	15/ha	10	5	3				2				6	4
7200	300					0.13	0/ha	0											
7400	340																		
7600	365					0.04													
7800	325					0.63	0/ha	0											
8km	295	1	0.33	3/ha	1	0.23	4/ha	2	1	1								1	1
8200	275	1	0.24	4/ha	3	0.01	c.>100/ha	4	3	1								2	2
8400	264	6	0.15	40/ha	10	0.24	42/ha	16	8	6			2			3			13
8600	253	18	0.17	106/ha	46	0.58	79/ha	64	50	8		2	2	2	1	6		5	52
8800	243	14	0.32	44/ha	6	0.75	8/ha	20	11	5	1	1	2			4		2	14
9km	235	69	0.41	168/ha	8	0.75	11/ha	77	26	42		5	3	1	2	10	1	3	61
9200	227.5	28	0.33	85/ha	50	0.97	52/ha	78	45	24		1	5	3	1	9	2	4	62
9400	222																		
9600	215	157	2.30	68/ha	4	0.32	13/ha	161	120	30	2	2	6	1	2	7	2	18	132
9800	210																		
10km	205	100	0.15	667/ha		0.01		100	73	25		1	1		3	1	1	3	92
10200	200																		
10400	196	18	0.10	180/ha	1	0.01	c.100/ha	19	10	6	1	2						1	18
10600	193																		
10800	189																		
11km	186.5	170	0.15	1133/h				170	112	49	1	5		3	7	2		6	155
11200	183.5																		
11400	180																		

Table E3: Silcrete flakes and cores - along transect from the Bengalla lease through catchments A & B, and catchments I & J

Distance	Total flakes	Flake size in cm					Total cores	Core size in cm							
		<2cm	2-3cm	3-4cm	4-5cm	>5cm		2-3cm	3-4cm	4-5cm	>5cm	Cobble	Flake	Indeterm	Not recorded
0-1km	16		3	3	2	8	16		4	4	8		4	12	
1-<2km	16	1	6	6	2	1	6	1	2	1	2		4	2	
2km	18	2	6	5	3	2									
c.3km	79	15	30	19	10	5	8	1	3	3	1		3	5	
>3-<4km	20	4	7	4	4	1	6		1	1	4			6	
c.5km	19	9	4	5		1									
>6km	15	1	5	7	2		5	2	1		2		4	1	
<c.7km	22	6	4	6	1	5	7	1	2	4			5	2	
c.8.5km	20	4	6	4	3	3	7	1	3	2	1		1	4	2
c.9km	16	3	7	3	1	2									
9.2km	21	6	10	3	2		5	1	2		2		2	3	
9.5km	44	12	21	6	4	1						1	2	9	
10km	23	6	5	7	2	3	12	4	3	4	1				
c.11km	40	9	14	10	3	4	5	3	1	1		1	2	1	1

Table E4: Summary of finds at artefact locations

Location	Total	Axe/ pebble tool	RU piece	Backed piece	Core	Flake	Bipolar pieces	Other piece
A1	4		1			2		1
A2	7					6		1
A3	5	1				3		1
A4	25	1	6		1	14		3
A5	4					1		3
A6	1					1		
A7	3		1			2		
A8	9					5		4
A9	1					1		
A10	9					5		4
A11	1		1					
A12	1	1						
A13	1							1
A14	2					1		1
A15	2		1			1		
A16	1							1
A17	1				1			
A18	1		1					
A19	1					1		
A20	1					1		
A21	2					2		
A22	1	1						
A23	1				1			
A24	1	1						
A25	1				1			
A26	1							1
A27	2				1	1		
A28	4		2		1			1
A29	3					3		
A30	1							1
A31	2					2		
A32	1							1
A33	60					15		45
A34	19					12		7
B1	1					1		
B2	1							1
B3	1					1		
B4	2					1		1
B5	0+2 emb.d							
B6	2							2
B7	3				2			1
B8	1							1
B9	1					1		
B10	1					1		
B11	1					1		
B12	1							1
B13	1					1		
B14	2					2		
B15	1					1		
B16	2					1		1
B17	1					1		
B18	1					1		
B19	1					1		
B20	1							1
B21	4				3			1
B22	8				2	4		2
B23	5				1	2		2
B24	1				1			
B25	1		1					

Table E4: continued...

Location	Total	Axe/ pebble tool	RU piece	Backed piece	Core	Flake	Bipolar pieces	Other piece
B26	1		1					
B27	3				1	2		
B28	1				1			
B29	46				2	9		35
B30	1					1		
B31	1					1		
B32	9					8		1
B33	2					1		1
B34	1				1			
B35	1					1		
B36	7+1 emb.d		2			3		2
B37	4					2		2
B38	1							1
B39	1				1			
B40	1							1
B41	1	1						
B42	1					1		
B43	1							1
B44	1		1					
AB1	1							1
AB2	6				1	4		1
AB3	4			1		2		1
AB4	1					1		
AB5	1							1
AB6	1					1		
AB7	3				1			2
AB8	1							1
C1	12+1embd					2		10
C2	1							1
C3	1							1
C4	1		1					
C5	9+4 emb.d					3		6
C6	1		1					
C7	2					1		1
C8	1				1			
C9	1							1
C10	1		1					
C11	2					2		
C12	1					1		
C13	5					4		1
C14	1					1		
C15	1				1			
C16	1					1		
C17	3							3
C18	1					1		
C19	2				1	1		
C20	17					12		5
C21	4					4		
C22	1				1			
C23	3							3
C24	1							1
C25	3					2		1
C26	1					1		
C27	1							1
C28	1							1
C29	3					2		1
C30	1					1		
C31	1					1		
C32	1					1		
C33	1							1

Table E4: continued...

Location	Total	Axe/ pebble tool	RU piece	Backed piece	Core	Flake	Bipolar pieces	Other piece
D1	1	1						
D2	2		1			1		
D3	1		1					
D4	1							1
D5	2				2			
D6	1					1		
D7	0+2 emb.d							
D8	1					1		
D9	1				1			
D10	1		1					
D11	5					2		3
D12	1							1
D13	3		1			2		
D14	1							1
D15	1							1
D16	6					5		1
D17	3					1		2
D18	1					1		
D19	2		1					1
D20	1				1			
D21	1							1
D22	8					4		4
D23	9		1			3		5
D24	2							2
E1	1					1		
E2	5+1 emb.d					4		1
E3	1							1
E4	42+2 emb	2	1		5	20		14
E5	1				1			
E6	1					1		
E7	1				1			
E8	3				1	2		
E9	1					1		
E10	3					1		2
E11	7				1			6
E12	8				1	2		5
E13	2					1		1
E14	1							1
E15	1				1			
E16	1							1
E17	1							1
E18	4		1			2		1
E19	6				1	4		1
E20	2				1	1		
E21	1							1
E22	9		2		1	5		1
E23	1		1					
E24	1					1		
E25	1							1
E26	1				1			
E27	10				1	4		5
E28	1				1			
E29	1							1
E30	4				1	2		1
E31	3		1			1		1
E32	2				1	1		
E33	2	1						1
E34	1		1					
E35	1					1		
E36	1					1		

Table E4: continued...

Location	Total	Axe/ pebble tool	RU piece	Backed piece	Core	Flake	Bipolar pieces	Other piece
E37	1							1
E38	2				1			1
E39	1				1			
F1	1					1		
F2	1					1		
F3	1							1
F4	1					1		
F5	1							1
F6	2					2		
F7	4				1	3		
F8	8				2	2		4
F9	1							1
F10	1					1		
F11	1							1
F12	1					1		
F13	1							1
F14	2	1	1					
F15	1					1		
F16	1							1
F17	1					1		
G1	1							1
G2	1							1
G3	2					1		1
G4	1					1		
G5	5					1		4
G6	1							1
G7	1					1		
G8	2							2
H1	1					1		
H2	2					2		
H3	1					1		
H4	3							3
H5	1							1
H6	9		1		1has RU	2		5
H7	2					1		1
H8	1							1
H9	1					1		
H10	1		1					
H11	2					2		
H12	3				1	2		
H13	1							1
H14	1							1
I1	5		2			1		2
I2	5					1		4
I3	1				1			
I4	7				1	5		1
I5	14					1		13
I6	1					1		
I7	1							1
I8	1				1			
I9	1					1		
I10	1					1		
I11	2				1			1
I12	1		1					
I13	9				2			7
I14	12		3	1		7		1
I15	1							1
I16	4					2		2
I17	3		1		1			1
I18	3					2	1	

Table E4: continued...

Location	Total	Axe/ pebble tool	RU piece	Backed piece	Core	Flake	Bipolar pieces	Other piece
I19	44	1	6	2		21	2	12
I20	1		1					
I21	3		1			1		1
I22	1		1					
I23	1		1					
I24	1					1		
I25	1				1			
I26	6				1	5		
I27	1					1		
I28	4		1			2		1
I29	1		1					
I30	5					1		4
I31	3				1			2
I32	4				1	2		1
I33	13	1	1			4		7
I34	3				1	1		1
I35	1		1					
I36	4					2		2
I37	26				2	5		19
I38	2							2
I39	1							1
I40	2							2
I41	1							1
I42	11				1	4		6
I43	1							1
IJ1	1							1
IJ2	5					3		2
IJ3	22			1	2	3		16
IJ4	62+1 emb			2	2	20	1	37
IJ5	26+4 emb		1 glass	2		7		16
IJ6	1					1		
IJ7	2+1 emb.d							2
IJ8	31		1	1	1	18		10
IJ9	9+2 emb.d			1	1	3		4
IJ10	3					2	1	
J1	1					1		
J2	1							1
J3	1					1		
J4	18		1		3	7		7
J5	3		1			1		1
J6	4					4		
J7	3					3		
J8	1					1		
J9	1							1
J10	1		1					
J11	1					1		
J12	2		1			1		
J13	1		1					
J14	1							1
J15	1				1			
J16	3				1	2		
J17	1							1
J18	1							1
J19	7		2	1		2		2
J20	1					1		
J21	6				1	4		1
J22	1					1		
J23	1							1
J24	2		1			1		
J25	6					5		1
J26	13	1	1		3	6		2

Table E4: continued...

Location	Total	Axe/ pebble tool	RU piece	Backed piece	Core	Flake	Bipolar pieces	Other piece
J27	3				2	1		
J28	6				1	3		2
J29	18		2			9		7
J30	2					2		
J31	2		1			1		
J32	1					1		
J33	44	2	5		1	23		13
J34	2					1		1
J35	55+1 emb			1	9	15		30
J36	22				1	4		17
J37	1					1		
J38	1						1 core	
J39	5					2		3
J40	1							1
J41	13			1	1	3		8
J42	16			1		4		11
J43	49	1	2	1		15		30
J44	3			1		2		
BD1	1				1			
BD2	2				1	1		
CD1	1							1
EF1	1							1
EF2	1							1
FG1	1							1
FG2	1							1
FG3	2							2
HI1	1							1
327 locations	**1386**	**17**	**79**	**17**	**104**	**543**	**6**	**620**

Table E5: Sample size and artefact types (NB. excludes embedded items)

Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	17	18	19	22	25	26	31	42	44	46	49	55	60	62	Total
Axes & pebble tools	5	2			1								2							1			2	3		1				17
RU pieces	21	7	6	5	2		4		4			3	2				3			6	1	1	1	11		2				79
Backed pieces			1	1			1		1			1	1		1				1		2	1		2		1	1		2	17
Cores	23	9	12	7	1	5	2	5	5	1	1		4				3		3	1	2	1	5	1	2		9		2	104
Flakes	63	35	35	30	24	30	16	12	34	4	4	9	13	1	4	12	16	12	7	14	12	18	20	44	9	15	15	15	20	543
Bipolar	1		2																					2					1	6
Pieces	67	27	25	17	27	7	12	15	37	5	6	11	17	13	11	5	14	7	33	3	35	10	14	25	35	30	30	45	37	620
Total finds	180	80	81	60	55	42	35	32	81	10	11	24	39	14	16	17	36	19	44	25	52	31	42	88	46	49	55	60	62	1386
Total locations	180	40	27	15	11	7	5	4	9	1	1	2	3	1	1	1	2	1	2	1	2	1	1	2	1	1	1	1	1	325

Table E6: Sample size and diversity (NB. excludes embedded items)

No. of types	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	17	18	19	22	25	26	31	42	44	46	49	55	60	62	Total
1	180	16	5	2																										203
2		24	17	6	8	3	2	1	5			1		1		1		1										1		71
3			5	7	3	4	2	3	1	1					1		1		2		1				1					32
4							1		3		1	1	2				1				1						1		1	12
5													1							1		1	1	1		1				6
6																								1						1
7																														0
Total locations	180	40	27	15	11	7	5	4	9	1	1	2	3	1	1	1	2	1	2	1	2	1	1	2	1	1	1	1	1	325

PART 4: REPORTS FROM THE WANARUAH LOCAL ABORIGINAL LAND COUNCIL AND THE WONNARUA TRIBAL COUNCIL

SITE INSPECTION AT MT PLEASANT

A REPORT
BY

WANARUAH LOCAL ABORIGINAL
LAND COUNCIL

AUGUST 1996

SCOPE OF REPORT

Coal 7 Allied Pty Ltd propose to develop an Open Cut Mine at Mt Pleasant which is situated south of Wybong Rd to Dorset Rd in the North.
An archaeological survey was conducted by Elizabeth Rich (Consultant/Archaeologist) on behalf of E.R.M.Mitchell McCotter who were commissioned by Coal & Allied to carry out the necessary requirements for an Enviromental Impact Statement.

Elizabeth Rich with Barry French (Site Curator) Wanaruah L.A.L.C carried out the survey of the Mt Pleasant Lease for Aboriginal Sites during May-July 1994.

A preliminary and final draft report were published by the Archaeologist, without a report of the survey from the Wanaruah L.A.L.C representative.
The consultant has asked that a report from the land council be compiled, to assist in the compiling of the report a site inspection was arranged, and conducted on the 4th 5th of July 1996.

PARTICIPANTS OF SITE INSPECTION.

Elizabeth Rich	**(CONSULTING ARCHAEOLOGIST)**
Anthony Smith	**(WANARUAH L.A.L.C.)**
Trevor Griffiths	**(WANARUAH L.A.L.C.)**

RESULTS OF INITIAL SURVEY.

During the initial survey 327 locations with Aboriginal artefacts were found, of these half were isolated finds (180) . All these are isolated finds, it is well documented that this does not mean, that other artefacts are not present subsurface and cannot be disregarded. Sixty seven of the remaining Aboriginal Sites contained less than 5 artefacts, only twentyseven contained more than ten(10) again this does not mean other material would not be present subsurface.
Material located at the sites were; Silcrete, Indurated Mudstone,Petrified Wood,Quartz, Volcanic and Quartzite Rock.
Artefacts located included, Backed Blades, Axes, Cores,Retouched Used Flakes and Pieces.

SITE INSPECTION

During the site inspection the participants visited areas that were believed to be the most significant in the archaeological context, areas that have had minimal impact by ploughing and farming activities, and some areas that may be more significant to the Aboriginal community. The reason for not inspecting all the Aboriginal Site locations was because of time restraints.

CONSULTATION

Brief consultation was held between the participants on the proposed development with members from the land council suggesting that the following recommendations be implemented.

RECOMMENDATIONS

1.With the number of Aboriginal sites that were located further archaeological investigations would indeed be warranted.

2. An on site meeting between Coal & Allied representatives and Land Council representatives occur to discuss;

a. A Plan of Management for the Aboriginal Sites that will not be impacted by the proposed development.

b.Future mining proposals.

c.Employment Issues

d.On going Consultations/Negotiations

e.Written confirmation from Mine Management that the above mentioned occurs prior to any further development proceeding.

Wonnarua Tribal Council Inc

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Singleton NSW 2330

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REPORT ON ARCHAEOLOGICAL SURVEY

AT

MT PLEASANT COAL PROJECT

ON THE

4 & 5TH OF JULY 1996

BY

WONNARUA TRIBAL COUNCIL INC

Wonnarua Tribal Council Inc

PO BOX 184
14 Kent St
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Telephone Mobile 018 174946 PH 065 721889
Fax 065 721889

Consulting Archaeologist; Elizabeth Rich
ERM Mitchell McCotter
Po Box 943
CROWS NEST NSW 2065

10th July 1996

RE; Mt Pleasant Coal Lease
Archaeological Survey for Aboriginal Sites
2nd Survey on the 4th & 5th of July 1996

REPORT

For (2) two days on the 4th and 5th of July 1996, a re-survey was conducted, of the Coal Lease Proposal, for the visable signs of Aboriginal Cultural Material.

Consulting Archaeologist, Beth Rich, and Aboriginal representatives from the Local Land Council and the Tribal Council where involved in this re-survey, which looked at the most sensitive areas where Aboriginal Stone Tools where produced.

Beth presented us with a Summary Report of the survey ,which had been conducted in May & June of 1994.
This Report proved helpful when looking on the ground for the Camp Sites, Tool Production Areas and the Isolated Finds.

Beth suggested that we concentrate our search in the North-West and South area ,due to the fact that the highest concentration of Cultural Material occures in these areas.

On inspection of all the Camp Sites in the area, and the weighing up of what we have seen over the 2 days re-surveying the land surface.
The Tribal Council would recommend to the Developers , that an Archaeological Investigation, procceed before any development commences.

These recommendations are based on what our representatives have seen, and what the Tribal Council believes is the best path to follow, if this proposal gets the green light, in the future.

Wonnarua Tribal Council Inc

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RECOMMENDATIONS

.1. It is our recommendation that if this proposal is to go ahead, then we would agree to an Archaeological Excavation Salavage and Collection of all the Aboriginal Sites mentioned on P*age 13 Table 2, Summary Report, Mt Pleasant Coal Lease, by Beth Rich.*

2. It is our belief that at least 25 to 30 days should be set aside for this Archaeological work, within the Mt Pleasant Mine.

Yours Thankfully

Victor Perry
CULTURAL HERITAGE OFFICER
WONNARUA TRIBAL
COUNCIL INC

MT PLEASANT MINE EIS

Fine Rejects Emplacement Area

Archaeological Investigations

For:
COAL & ALLIED OPERATIONS PTY LIMITED

September 1997
94019arc

Report No. 94019ARC

This report has been prepared in accordance with the scope of services described in the contract or agreement between ERM Mitchell McCotter Pty Ltd ACN 002 773 248 (ERMMM) and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client and ERMMM accepts no responsibility for its use by other parties.

Approved by:	*Robert McCotter*
Position:	Project Director
Signed:	
Date:	*4 September, 1997*

ERM Mitchell McCotter Quality System

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EXECUTIVE SUMMARY

Archaeological investigations were conducted for the proposed Mount Pleasant Mine, located to the west of Muswellbrook. Previous archaeological survey of the Mount Pleasant Authorisation and north-west out-of-pit emplacement where prepared by Rich (1995) and ERM Mitchell McCotter (1996) respectively. Modifications to the mine plan required fine rejects to be emplaced west of the Authorisation and a rail loop to be constructed south of the infrastructure area. This report documents additional surveys of the fines rejects emplacement area and a small section of the rail loop which had not previously been investigated for the Bengalla Mine.

The study objectives were to determine the presence of Aboriginal archaeological sites and items, assess the impact of the proposal items and provide management recommendations for Aboriginal heritage. The study was undertaken in consultation with the Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated.

A total of 90 archaeological sites, comprising 3,952 artefacts, were recorded in the fine rejects emplacement area. Most sites were open artefact scatters, with a small number of scarred trees. Site type and distribution was consistent with those previously recorded in the locality and region. Archaeological sites were located within a number of landform units which included ridges, hillslopes and gullies.

The majority of open artefact scatters were assessed as having low archaeological significance because they contained low artefact density and offered little research potential. However, a small number of large, dense sites were recorded which were considered to have higher significance and research potential. Of greatest significance was a concentration of artefacts at site 44, where over 2,500 artefacts were recorded. Scarred trees were also considered significant given the scale of past land clearing in the region. One open camp site was located adjacent to the section of rail link surveyed.

About half of the sites recorded will be affected by the proposed fine rejects emplacement. However, some sites bordering affected areas or within the southern provisional emplacement catchment may not be impacted.

The establishment of an environmental dam in the westernmost part of the northern catchment will partially affect site 44. The construction of the dam will not take place until Year 10. A management plan developed in consultation with the local Aboriginal community is recommended to ensure mitigation against further impact prior to dam construction. Consultation will also determine the need for further works at the site. Site 64 on the southern catchment should also be incorporated into the management plan, being outside the area of impact and having a high potential for subsurface deposits. Programs for site preservation or destruction will be developed in consultation with the Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated. In addition, general measures to safeguard sites are recommended.

Chapter 1

INTRODUCTION

This chapter describes the Mount Pleasant mine proposal, objectives and scope of archaeological investigations and the process of consultation with the local Aboriginal community.

1.1 BACKGROUND

Coal & Allied Operations Pty Limited (Coal & Allied) proposes developing a large open cut coal mine at Mount Pleasant, located west of the township of Muswellbrook in the upper Hunter Valley of New South Wales. The location of the site is shown on *Figure 1*. This archaeological investigation forms part of a series of environmental studies into the proposed mine undertaken as part of the Environmental Impact Study prepared by ERM Mitchell McCotter (1997). Further detail on the Mount Pleasant mine project is contained in the Environmental Impact Statement (ERM Mitchell McCotter, 1997).

The mine plan for the Mount Pleasant Project has been modified from the original because the company was encouraged to examine the feasibility of moving mine infrastructure from the eastern side of the mine to the south-west of the mine workings. Muswellbrook Shire Council felt that this alternative location would be less visible from the township and more acceptable to the community in terms of environmental in terms of environmental outcomes and costs. Under the original plan, mine infrastructure would have been located about 3.5 kilometres north-west of Muswellbrook. Under the revised proposal it will be about seven kilometres west of residential areas in Muswellbrook. Revision of the mine plan required a revision of work undertaken and additional study to assess the following changes:

- mine infrastructure will be relocated to the south-western corner of Mount Pleasant;
- additional out-of-pit emplacements will be developed north-west of the mine. This will include a border zone of land in the north-western corner of the Mount Pleasant Authorisation;
- a rail loop will be built to the west of the Bengalla Mine to serve the new facilities; and
- coal washery fines will be directed to a series of ponds to the west of the Mount Pleasant Authorisation, known as the fine rejects emplacement area.

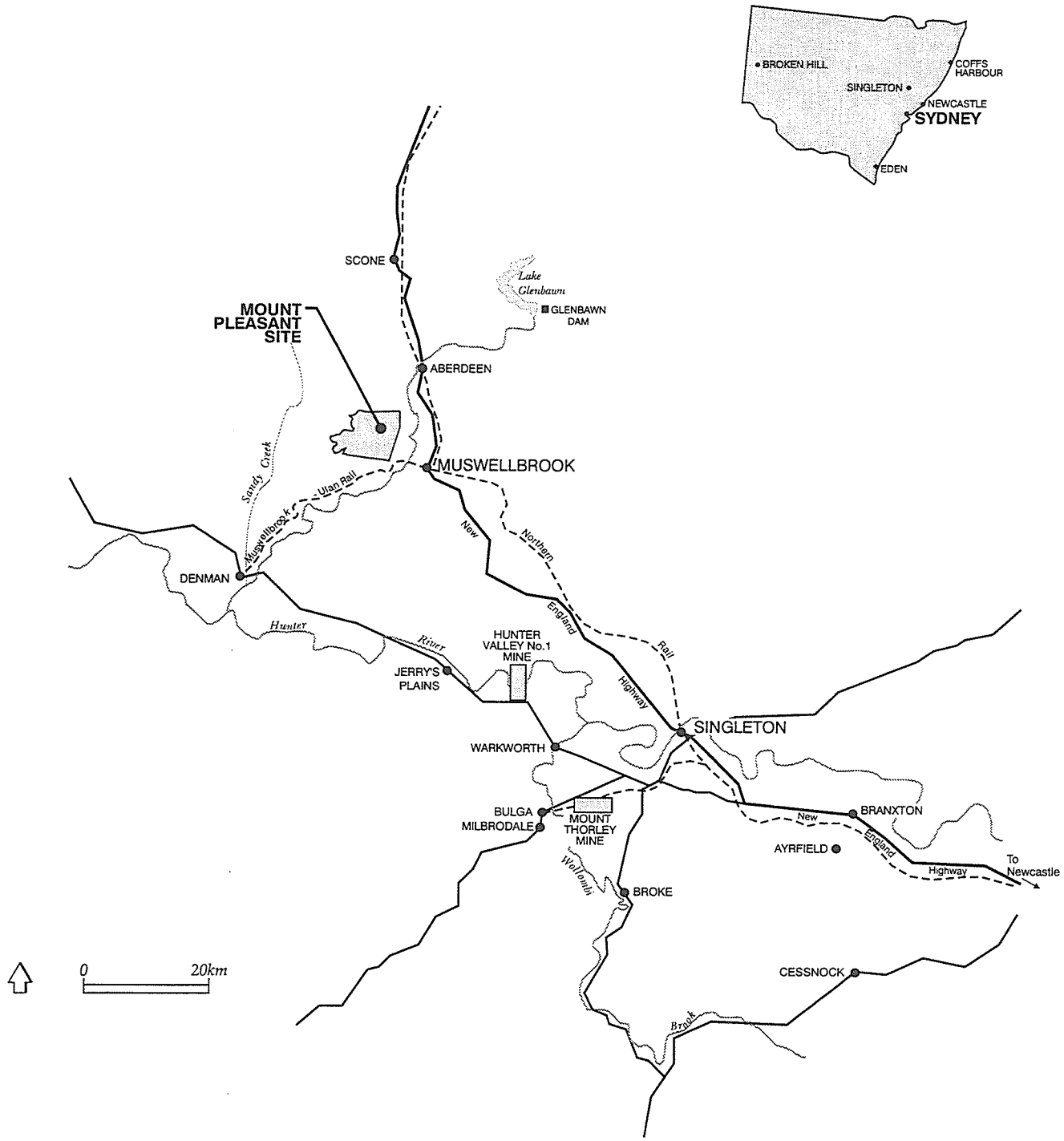


Figure 1 SITE LOCATION

This study examined the proposed fine rejects emplacement area to the west of the Authorisation as shown on *Figure 2*.

All fine rejects from the coal washing process will be pumped to a series of stepped emplacements near the south west corner of the site. Initially, two emplacement walls will be formed at the top end of the catchment and an environmental dam to contain water and sediment overflow from the emplacements will be constructed in the centre of the catchment. At about Year 10, the central environmental dam will be enlarged to facilitate continued fine rejects emplacement. Prior to this a new environmental dam will be built at the lower end of the catchment.

Emplacement walls will be raised in stages of approximately five metres to suit the operation of the dam and to avoid having to build a large dam wall at once. Emplacement walls will be built from coarse reject and other rock, with provision for a filter area and spillway. The building or raising of the dam walls will involve course reject material being stockpiled near the dam wall from where it will be picked up and rehandled by a number of self powered bowl scrapers onto the new section of dam wall.

Fine reject will be pumped into the emplacements as a slurry. Excess water will be returned to the mine water management system for reuse in the coal preparation plant, dust suppression and other site uses. In general, two emplacements will be active at any one time. As each emplacement fills another will be placed immediately downstream. The filled emplacement will be allowed to dry out before being covered by a layer of rock, topsoiled and then revegetated. Rehabilitation timing will depend upon drying rates which are controlled by rainfall and evaporation. Ultimately, a series of emplacement terraces will be constructed. They will be shaped to blend into the surrounding topography.

Two catchments were investigated as fine reject emplacement areas, as shown in *Figure 2*. Although only the northern catchment is likely to be used, a second is included in this assessment, in case more fine reject is generated than is currently predicted.

In addition, a small portion of the proposed rail link which was not subject to archaeological assessment as part of the Bengalla development was examined as part of the study. The area surveyed is shown on *Figure 2*.

The study area is defined as the two catchments identified for fine rejects emplacement, shown on *Figure 2*. The remainder of the proposed Mount Pleasant mine is referred to as the Authorisation, which for the purposes of this report includes the Authorisation area and the north-west out-of-pit emplacement. Rich (1995) referred to the Mount Pleasant Authorisation as the "lease". This term is used in this report when directly quoting Rich (1995).



Figure 2 SITE PLAN

1.2 STUDY OBJECTIVES

Archaeological investigations were conducted in order to determine the presence of archaeological sites and items in accordance with Part 6 of the *National Parks and Wildlife Act 1974.*

The objectives of the archaeological investigations were to:

- identify and record items of Aboriginal heritage;
- assess the significance of identified sites in relation to the local and regional archaeological context;
- assess the impact of the proposed development on the archaeological resource through survey and prediction; and
- provide management recommendations and safeguards for items of Aboriginal heritage in consultation with local Aboriginal groups.

This report, although a stand-alone document, is supplementary to the previous archaeological report prepared for the Mount Pleasant Coal Mine by Rich (1995) titled "Mount Pleasant Coal Lease, near Muswellbrook, New South Wales: Archaeological survey for Aboriginal sites". The assessment of sites in the fine rejects emplacement area and subsequent management recommendations are consistent with the results and conclusions for the Authorisation as outlined by Rich (1995).

1.3 SCOPE OF WORK

Archaeological investigations were carried out in three stages. Each stage and associated tasks are outlined below.

Stage A: Research and Investigation

- consultation with the National Parks and Wildlife Service Aboriginal sites register;
- literature review;
- consultation with Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated; and
- field investigation and site recording.

Stage B: Analysis and Evaluation

- analysis of Aboriginal archaeological sites with reference to the local and regional archaeological context;
- assessment of the significance of archaeological sites;
- impact assessment; and
- determining management recommendations and safeguards.

Stage C: Report Preparation

- compilation of the report, detailing stages A and B to provide a comprehensive account of the archaeological resource and site management issues.

1.4 ABORIGINAL CONSULTATION

This study was undertaken in consultation with the Wanaruah Local Aboriginal Land Council and the Wonnarua Tribal Council Incorporated. Representatives from both groups were involved during field investigations. An on-site meeting was held at the outset of the investigations to discuss the proposal and agree on an appropriate methodology for the archaeological investigations. Regular discussions were held regarding the conduct of the fieldwork, results of the survey, potential impacts and any other relevant issues that should be addressed as part of the study. This allowed formulation of management recommendations which incorporate the views of both Land Council and Tribal Council representatives.

Wonnarua Tribal Council's views on sites recorded in the study area are expressed in their report, attached as Appendix A. No written response regarding the study area has been submitted by the Wanaruah Local Aboriginal Land Council at the time of preparation of this report. The significance of the study area to the Aboriginal community may not be confined to the archaeological resource, rather may be based on the spiritual or social value of the landscape. Continued consultation with both groups will aim to determine the Aboriginal significance of this area to the local Aboriginal community and an appropriate manner for undertaking proposed development.

Chapter 2

ENVIRONMENTAL CONTEXT

This chapter describes the landscape and environment of the study area and defines landform units for undertaking the investigations.

2.1 TOPOGRAPHY AND LANDSCAPE CONTEXT

The site is located on predominantly undulating country to the west of the Hunter River, with small areas on the eastern boundary extending into the floodplain. The topography of the study area is characterised by gentle, rolling hills and ridgelines divided by streams and gullies. The highest elevations in the study area occur in proximity to Mount Pleasant (368 metres ASL) with hillslopes grading to the south west. The topography of the study area is shown on *Figure 3*.

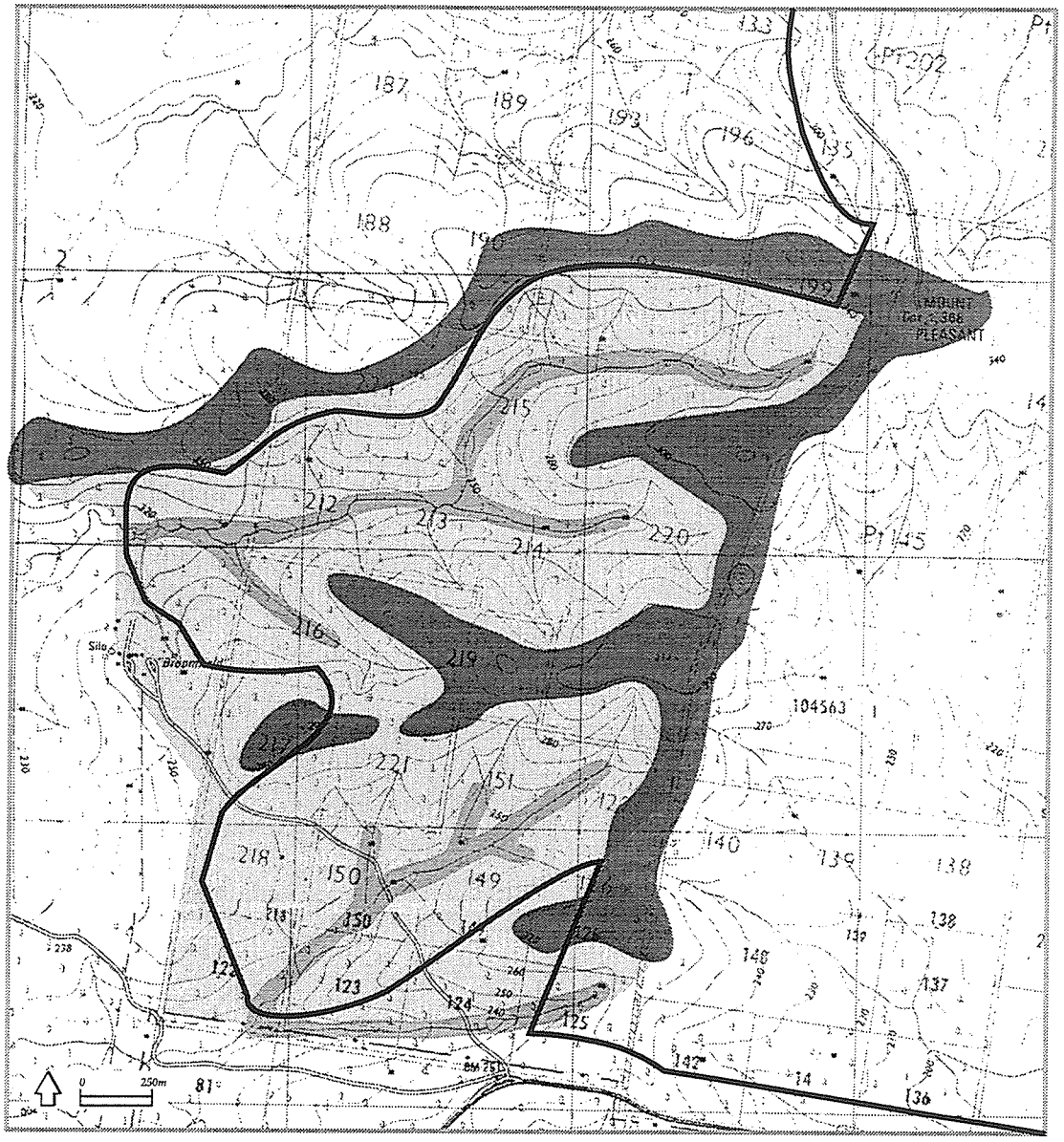
The study area is drained by two main gullies with a south west orientation which form a northern and southern catchment. A number of confluences and minor drainage lines occur along the main gullies with the upper parts tending to be steep, becoming more gentle in the lower downstream parts.

Three vegetation communities were identified in the study area, namely:

- White Box - Narrow-leaved Ironbark Open Forest;
- Spotted Gum - White Box Open Forest; and
- Grassland.

The forest communities were located predominantly along the southern drainage line with most of the study area having previously been cleared and now dominated by grasses.

Mount Pleasant is situated on the north-eastern margin of the Sydney Basin, a geological structure containing the major coal resources of NSW. Rock strata between coal seams typically comprise sandstone, siltstone, conglomerate and tuffaceous claystone (known as the Fairford Formation). Soils are largely derived from the weathering of the bedrock.



Hillslope within Surveyed Area

Gullies

Ridges

Figure 3 TOPOGRAPHY AND LANDFORM UNITS

A soil survey of the site was undertaken by Veness and Associates (1997) who identified five soil mapping units. Hillslope soils dominate the study area and include uniform non-cracking clay soils, gradational solonised brown soils, red-brown earths, and red-yellow solodic and solonetzic soils. They consist of clay loam or light clay topsoil overlying fine sandy clay loam lower topsoils. Topsoils are generally stable. The subsoils are light clay to light medium clay.

The study area has undergone varying degrees of land use impact, including clearing, and is predominantly used for stock grazing on native pasture. Clearing, however, will have had minimal impact on the survival and condition of archaeological sites within the study area, including stone artefact scatters, with the exception of scarred trees which may have been present. Archaeological sites may be disturbed by stock grazing which can create eroded tracks and erosion along creeklines and stock dams. The impact on potential archaeological resources is heightened with the construction of farm dams, which are often constructed in or adjacent to natural drainage lines. The degree of impact is a cumulation of the level of construction involved and given stone artefacts generally occur in highest densities along water courses.

Two main types of erosion were present in the study area, namely gully erosion along the drainage lines and sheet erosion on flats, hillslopes and ridges. Accelerated erosion has been caused in places from vehicle and stock use, producing a series of dirt tracks through the study area. Fence construction has resulted in erosion along some fencelines.

Eroded areas generally provide a greater opportunity for identifying archaeological sites than a stable surface. Exposure resulting from erosion was primarily along the drainage lines, which is common in the central lowlands of the Hunter Valley.

The portion of the rail link area surveyed to the south of the Mount Pleasant Authorisation covered grassy hillslopes. The general topography and landscape context of low, rolling hills and ephemeral drainage lines follows that described by Rich (1993) for the Bengalla site.

2.2 LANDFORM UNITS

To assess the relationship of archaeological sites (indicators of Aboriginal occupation) within various parts of the landscape, the study area was categorised into a series of landform units. The study area was divided into three landform units based on definitions provided by the field handbook for soil and land survey in Australia (McDonald, *et. al*, 1990). These included ridge/hill top, hillslopes and valley bottoms/gullies, which are defined in Appendix B. The three broad landform units in the study area are shown on *Figure 3*. The hillslope unit makes up the majority of the study area.

The two major drainage lines, associated flats and sections of minor drainage lines on the flats were classed as valley bottoms/gullies. Upper reaches of minor drainage lines were described as hillslopes, however, sites located along minor drainage lines were recorded in association with the drainage line.

Chapter 3

ARCHAEOLOGICAL CONTEXT

This chapter outlines the regional and local archaeological context, which forms the basis for evaluating the archaeological resource of the study area.

3.1 INTRODUCTION

Relevant literature and data from previous archaeological investigations in the general area was reviewed to assist in predictions of potential site locations and types in the study area.

A review of information at a regional and local scale was used to establish regional issues such as Aboriginal heritage conservation, range of types of archaeological remains, rare examples, cumulative impacts, site distribution and models of land use. A review of work previously undertaken in the vicinity of the study area assisted in placing the findings of this study in a local context.

3.2 REGIONAL ARCHAEOLOGICAL CONTEXT

The Hunter Valley has been the subject of a substantial number of archaeological investigations, mainly due to the large number of development proposals in the area. Previous archaeological surveys undertaken in the central lowlands of the Hunter Valley have indicated the occurrence of a large number of open campsites along the drainage networks that ultimately flow into the Hunter River. The size and density of these archaeological deposits varied considerably from isolated artefacts to large, dense artefact scatters.

Previous investigations in the region have been based on assessing site location patterns. Assemblage contents, such as raw materials, artefact densities, size and shape categories, presence of diagnostic artefacts and frequency of modified artefacts have been assessed in relation to topography and available resources. Signs of patterning within sites, such as different densities of artefacts, size or raw material frequencies, have been considered to indicate different activities or technological traditions (Brayshaw, 1984). Other regional issues include identifying stratigraphic evidence for the presence or absence of artefact types or assemblages with Holocene

or Pleistocene sediments or horizons, the influence of raw materials on reduction sequences and artefact types and the value and use of surface collections as indicators of the character of open sites (Brayshaw and Haglund, 1984).

Models have been proposed regarding the distribution of sites across the landscape. These models generally state that:

- most archaeological material in the Hunter lowlands is concentrated along streams with artefact and site density tending to decrease along upper tributary gullies and away from stream banks;
- artefact scatters are also found on hillslopes and ridges, however, these appear to be low density scatters;
- differences in the distribution of archaeological material across the landscape is taken to indicate or reflect behavioural differences; and
- drainage lines appear to be the most archaeologically sensitive landscape unit.

There appears to be a high degree of conformity in the stone assemblages of the Hunter region. Previous studies have found Hunter Valley stone assemblages consist principally of indurated mudstone, silcrete and quartz. Indurated mudstone was generally predominant in artefact assemblages and the preferred material for modified artefacts.

Open sites in the Hunter Valley occur within topsoil (A horizon) deposits and are exposed when this is disturbed, generally through sheet and gully erosion. Artefacts have also been recorded resting on the surface of the upper subsoil (B horizon) (Stern, 1981).

Most archaeological material in the Hunter Valley appears to be of Holocene age and probably less than 5,000 years old. Radiocarbon dates from shelter and open sites indicate that the Hunter Valley was occupied continuously throughout the later Holocene. Open sites in the Hunter Valley all appear to date to the last 5,000 years on the basis that artefacts characteristic of the small tool tradition are present. This tradition first appeared in Australia some 4,500 years ago and included a range of finely-made artefacts known as backed blades and geometric microliths. Examples of these types of artefact are common in open sites throughout the Hunter Valley. Until recently, it was thought that these and other elements of the small tool tradition gradually disappeared from the stone tool kit between 1,500 and 1,000 years ago across Australia. Subsequently, sites with such artefacts present were thought to be between 4,500 and 1,000 years of age. However, findings from other regions appear to show that these types of artefacts continued in use through to

European settlement and it has been suggested that this may also have been the case in the Hunter Valley (Hiscock, 1986). Use of age/depth curves on material excavated from a rockshelter at Sandy Hollow appeared to show that backed blades were manufactured until at least 250-300 years ago, though production of these items may have decreased markedly just prior to this, compared with numbers produced prior to 800 BP (Before Present) (Hiscock, 1986). Hiscock (1986) also identified major changes taking place through time in the manufacturing techniques of backed blades which he considered may be related to the decrease in numbers made. Three phases of artefact manufacture were identified in Sandy Hollow I, two of these being associated with backed blades.

Baker (1992) assessed the technological description of stone artefacts in relation to Hiscock's (1986) relative chronology of open sites based on the artefact sequence at the excavated rock shelter at Sandy Hollow. Baker (1992) argued that there was no demonstration that the variation in the technological parameters on the artefacts from the dated and stratified sequence at Sandy Hollow was repeated at any other site. It was therefore considered doubtful whether the variation that Hiscock claimed to be observing resulted from chronological changes in methods of artefact manufacture rather than some other determinant of artefact variation. Therefore, it is appropriate that this be viewed as a relative chronology for the sequence of stone artefact technology observed in Hunter Valley sites.

Dated sites within the Hunter Valley, including shelter sites on the Goulburn River had basal dates of no more than 4,000 years, while a site on the divide had a basal date of 5,000 to 6,000 BP (Haglund, 1981a and 1981b). Artefacts at these sites included backed implements characteristic of Bondaian assemblages of south eastern Australia (Koettig and Hughes, 1983). The presence of backed blades on the surface of stratified deposits of both shelter and open sites in the Goulburn and Upper Hunter sites suggest the persistence of Bondaian technology into more recent times than elsewhere in south eastern Australia (Moore, 1970; Haglund, 1981a, 1982).

Changes in artefact assemblages through time have been identified and described as the Eastern Regional Sequence for the wider Sydney Basin (Koettig, 1985), including:

- Pre-Bondaian: earlier than around 4,500 years. Assemblages include uniface pebble tools, horsehoof cores, retouched "scrapers", hammerstones, "burins", "dentated saws", relatively larger artefacts than in later phases, and a few bipolar artefacts.

- Early Bondaian: dated between around 4,500 and 3,000 years ago. Backed blades first appear, fine grained siliceous materials predominated, ground implements first appear, and elements of pre-Bondaian continue.

- Middle Bondaian: dated between around 3,000 and 1,500 years ago. Backed blades become more frequent and occurred in higher frequencies than bipolar artefacts, and the frequency of quartz increased.

- Late Bondaian: backed blades occurred in low numbers or were absent, quartz was the predominant material, the frequencies of edge-ground artefacts and bipolar artefacts increased.

However, it is not possible to date open sites by simple comparison with this sequence. Variation between individual sites has been found, and in some areas quartz was always a minor raw material. At the excavated Sandy Hollow shelter in the Goulburn Valley, the change from the Middle Bondaian to the Late Bondaian has been dated to around 800 years ago, which is substantially later than the suggested date of 1,500 years ago according to the Eastern Regional Sequence. In addition, the comparison of artefact assemblages from open sites with those from shelter sites is limited in its success.

Previous studies have revealed information on stone knapping and reduction strategies in the Hunter Valley lowlands. Baker (1992) identified two types of reduction of the core, including opportunistic and specialised. Opportunistic reduction strategies included reduction of cobble cores and cores of indeterminate core body. Specialised strategies involved an alternating flaking sequence, including the preparation of platform surfaces, and were sometimes used to make backed blades. However, Baker suggested that alternating flaking was also used to bifacially reduce cobble cores, which are not thought to be associated with backed blade production, indicating that there was not a simple correlation between core form, flaking pattern and reduction strategy. Hiscock (1993) suggested that backed blades were produced more often from other knapping sequences. Heat shattering of silcrete cobbles and knapping of suitable stone pieces was also a reduction process used to make backed blades.

Indicators of site function or activities that may have been carried out include:

- backed blade production (Bondi points or geometric backed blades);

- the production of flakes and pieces suitable for non-backed tasks - these may have been produced as occasionally struck flakes or less frequently on (non-backed blade) knapping floors. Suitable pieces appear to have also been selected from blade debitage on backed blade knapping floors; and

- a range of activities on and off campsites, characterised by discarded pebble tools or axes and a variety of flake tools (that is, pieces with retouch and/or usewear) and debitage, with or without specific stone working areas.

3.3 LOCAL ARCHAEOLOGICAL CONTEXT

The local archaeological context forms the basis for examining the archaeological resource in the study area. Previous studies include surveys for the Bengalla coal mine (Rich, 1993) and Mount Pleasant coal mine Authorisation area and out-of pit emplacements (Rich, 1995; ERM Mitchell McCotter, 1996).

3.3.1 Bengalla Mine

Archaeological sites were documented in the adjacent Bengalla site to the south (Rich, 1993). Notable in that area was a silcrete extraction site. A total of 39 sites and 17 isolated finds were recorded in all landform units across much of the Bengalla site. The greatest amount of exposed land was recorded on the hillslopes and ridges, although the gullies and the main creek contained the most artefacts. The main creek, the gullies and the low rises above the Hunter flats had the highest artefact density. The bluffs above the Hunter flats and hillslopes and ridges had the lowest artefact densities.

It was hypothesised that three stone industries were present in the area given the variety of stone artefacts found. These industries were the microblade industry based on the production of backed blades, small flake tool industry based on small retouched flakes and a large tool industry including large retouched flakes, pebble tools, axes, hammerstones and a broken grindstone. Many sites comprised artefacts from two or three of the industries. Some sites belonged predominantly to the small flake tool industry although included some large tools. Other sites were predominantly or only of the microblade industry, where activities at the site appeared to be entirely focused on the production of backed blades. Different industries appeared to have been carried out in different landform units with microblade assemblages concentrated along the main creek and around the confluences of minor gullies, small flake tool assemblages on minor gullies, hillslopes and ridges and large tools occurring on most landform units, but most frequently occurring on all landform units close to the Hunter flats and on hillslopes and ridges away from the flats. Large tools occurred only rarely along the main creek and infrequently along gullies.

Differences in distribution of the various stone artefact industries were considered to reflect differences in past Aboriginal behaviour with apparent "rules about what kinds of stone working or stone tools were used (or left behind) in the landscape" (Rich, 1993a:12).

The silcrete extraction site associated with tertiary ridge gravels was considered a significant site. The silcrete quarry was located on a ridge near the Hunter flats. The silcrete was distinctive, being whitish in colour and with small pebbles in it. The silcrete was taken into other parts of the lease by Aboriginal people in the past and was an important source of stone material for making tools. On the extraction site the artefacts occurred in all shapes and sizes, including large cores, large flakes, large tools, smaller flakes and pieces and a petrified wood backed blade knapping floor.

3.3.2 Mount Pleasant Authorisation

Archaeological investigations have been undertaken in a number of stages over the Mount Pleasant Authorisation area including out-of-pit emplacements. Survey of the Authorisation was undertaken by Rich (1995). Additional survey of the proposed north-west out-of-pit emplacement to the north of Mount Pleasant was undertaken by ERM Mitchell McCotter in 1995. The addendum report (ERM Mitchell McCotter, 1996) formed a supplementary report to Rich (1995). The north-west out of pit emplacement area forms part of the coal Authorisation area covered by Rich's (1995) original report and subsequent amendments to this resulting from changes to the mine plan.

A total of 327 artefact locations or sites consisting of 1,408 artefacts were recorded by Rich (1995) in the Mount Pleasant Authorisation. The majority of artefact locations were single isolated finds (55%), followed by sites with two to three artefacts (20%) and sites with more than ten artefacts (8%). Rich (1995) stated that artefact identification was somewhat constrained by the extent of ground exposures with sufficient visibility to locate artefacts. Artefact density along gullies tended to be higher than on hillslopes and ridges. The highest artefact densities occurred within the north west part of the lease in catchments I and J and at the IJ confluence. No artefacts were found on the slopes of Mount Pleasant above 300 metres ASL or on the Hunter flats. Rich (1995) stated that "compared to some other parts of the Hunter Valley, the Mount Pleasant lease appears to have a fairly sparse archaeological record".

Variation in the nature and structure of archaeological material was considered to indicate differences in the way Aboriginal people used different parts of the landscape (Rich, 1995). Areas of higher artefact density suggested variation in the nature of past occupation.

Artefact assemblages included backed blades, associated knapping debris, cores, a variety of retouched and used flakes and pieces, larger pebble tools and axes. All but one of the backed blades were found within the north western catchments and all were adjacent to drainage lines. In contrast to the restricted distribution of backed pieces, the pebble tools and stone axes appeared to have a much more

random distribution, occurring in most catchments and along various gullies and hillslopes. Other retouched or used flakes and pieces and cores occurred across most of the Authorisation.

Debitage occurred more frequently amongst larger artefact assemblages than smaller assemblages. Higher rates of flake breakage may have resulted from stone reduction techniques associated with backed blade production.

No cores of heat shatter core body were recorded within the Authorisation. There was only one item, of petrified wood, with possible heat treatment recorded. Rich (1995) stated that "the paucity of heat treatment could be a function of recorder misidentification, but might also reflect a real paucity of heat shatter technology".

Archaeological material was mostly reported in largely disturbed contexts. Artefacts consisted of a wide variety of raw materials including chert, indurated mudstone, petrified wood, quartz, silcrete and "silicified conglomerate". Artefact assemblages include large pebble and flaked stone tools, cores and debitage which are indicators of stone knapping and reduction sequences.

Silcrete appeared to be the main artefact material. Backed pieces and retouch/usewear pieces were of comparable proportions of indurated mudstone and silcrete, however, there were more cores and debitage of silcrete than indurated mudstone. In terms of debitage, there were more indurated mudstone flakes than other pieces of the same raw material, however more silcrete pieces than flakes. It was suggested that this may indicate that silcrete debitage was more prone to breakage than indurated mudstone debitage (Rich, 1995). Indurated mudstone artefacts tended to be slightly smaller in size than silcrete artefacts, probably reflecting more distant sources of that raw material. Cores were predominantly silcrete followed by indurated mudstone.

Silcrete was the predominant raw material across the study area for debitage and cores. This material appeared to have been most frequently knapped in the Authorisation. It was suggested that cores of indurated mudstone were knapped to produce smaller flakes and less broken debitage than resulted in the knapping of silcrete. Rich (1995) suggested that "the more 'reckless' use of silcrete may have been associated with the presence of a silcrete source and extraction site within the Bengalla coal lease to the south" of the study area.

In relation to raw materials, silcrete made up 58% of the sample at Mount Pleasant and 60% at Bengalla. The frequency of other raw material was also similar between the two leases. The predominance of silcrete was expected given the presence of a silcrete extraction source within the Bengalla lease. However, Rich (1995) stated that the close similarity in raw material frequencies between the Mount Pleasant Authorisation and Bengalla site was unexpected, given a standard distance-decay

model of raw material distribution would suggest greater dissimilarity (Rich, 1995). Based on a distance-decay model, it would be expected that:

- artefact density might decrease with increasing distance from the silcrete source;
- the frequencies of silcrete artefacts amongst assemblages might decrease; and
- the overall size of silcrete flakes might decrease.

However, all these expectations were not met for sites within the Authorisation. This suggests that factors other than proximity of raw material source are likely to have influenced the distribution and nature of artefact assemblages.

The presence of backed pieces generally, edge-ground axes and bipolar artefacts of indurated mudstone and silcrete as well as quartz, suggest that occupation was during the past 5,000 years, by comparison with the Eastern Regional Sequence. However, there was no indication as to when people first occupied the area. The Authorisation was occupied in recent times, given evidence of a glass retouch/usewear piece in the IJ confluence in the north west which can be dated to around 1790-1830 AD. In addition, identifiable flake cores of a particular reduction strategy where recorded in the north west of the Authorisation. These may date to a period of pre-1,300 BP to 800 BP or possibly to the contact period (Hiscock, 1986, 1993).

It was concluded that while the archaeological picture is likely to be distorted by the effects of ground visibility and exposure and by agricultural land use, there does appear to be some patterning in the composition of assemblages and the distribution of material across the landscape. Artefact distribution does not appear to have been controlled by the availability or proximity to the silcrete source. Aboriginal occupants appeared to have given primacy to factors other than stone materials in the location of activities in the landscape.

Field investigations of the north-west out-of-pit emplacement area identified 24 artefact locations with a total of 79 artefacts (ERM Mitchell McCotter, 1996). Most locations contained two to four artefacts (46%), followed by isolated artefacts (38%), then sites with five to ten artefacts (13%) and one site with more than ten artefacts (4%). Sites were located on ridge tops, hillslopes and along drainage lines and gullies. Site distribution was comparable to the pattern identified by Rich (1995) over the remainder of the Authorisation. Artefacts included knapping debris such as flakes, flaked pieces and cores. No backed blades or retouched or used flakes and pieces were found in the assemblages.

Investigations in the Authorisation and north-west out-of-pit emplacement area appears to indicate that the Mount Pleasant Authorisation does not contain a substantial archaeological resource (Rich, 1995; ERM Mitchell McCotter, 1996). Rich (1995: 6) states that *"compared to some other parts of the Hunter lowlands, the Mount Pleasant lease appears to have a fairly sparse archaeological record"* which is consistent with artefact assemblages reported within the Bengalla lease to the south. However, Rich (1995: 29-30) states that the results should be regarded "as general indications, rather than as conclusive statements regarding the archaeology of the lease".

3.4 PREDICTED SITES

Given the existing archaeological information for sites in the region and the environmental setting of the study area, a number of site types could be expected to occur. Based on work undertaken in this part of the Hunter Valley it was expected that the majority of sites likely to be found in the study area would be open artefact scatters, isolated finds and scarred trees. Grinding grooves may be found if suitable outcrops of sandstone occur in the stream beds or on ridge crests.

Open sites comprising scatters of stone artefacts are the most likely type of site to occur in the study area. Open camp sites consist of surface scatters or accumulations of artefacts and may be associated with hunting and gathering activities, domestic camps with hearths or the manufacture and maintenance of stone tools. Most sites will be expected to occur along permanent water courses and eroded gully lines, however, artefact scatters are also expected to occur on the hillslopes, ridges and hill tops. Artefact densities are likely to vary across the study area. Open sites are usually found in areas where the ground surface has been exposed by vegetation clearing or through soil erosion.

Open artefact scatters and isolated finds were considered likely to occur in greater numbers along creek bottoms. Sites were expected to be smaller and less dense on ridges and hillslopes.

Isolated artefacts were also expected within the study area. These are defined as being a single stone artefact at least 50 metres away from the nearest stone artefact. Individual finds can occur anywhere in the landscape and may represent the random loss or deliberate discard of artefacts, or the remains of dispersed artefact scatters.

Scarred trees may occur if trees greater than 100 years old remain in the study area. These trees have had bark removed for a variety of purposes, such as for manufacturing containers, shields or canoes. Scarring can also occur from the making of toe-holds for climbing. The majority of the study area showed evidence of clearing in the past. Consequently, it was considered that the likelihood of scarred trees remaining was limited.

Axe grinding grooves may occur on sandstone outcrops in or adjacent to drainage lines.

3.5 INVESTIGATING THE ARCHAEOLOGICAL RESOURCE

The study aimed to investigate the nature of the archaeological resource in the Mount Pleasant study area in relation to the regional and local archaeological context. Key areas examined include:

- location of sites in the landscape;
- types of artefacts within the assemblages, including indicators of age;
- raw materials utilised; and
- preliminary technological analysis.

Chapter 4

FIELD INVESTIGATION

This chapter outlines the methodology and findings of the field survey and the analysis and evaluation of the results.

4.1 SURVEY STRATEGY

Two areas were investigated as part of this study, including the fine rejects emplacement area adjoining the Mount Pleasant Authorisation and a small portion of the proposed rail link to the west of the Bengalla site which was not subject to previous archaeological survey. These areas are shown on *Figure 2*.

Based on the information gathered from the literature review, the potential for sites to occur in the study area was identified. The identification of areas with archaeological potential was based on previously determined site location patterns for Aboriginal sites recorded in the Hunter Valley lowlands and an assessment of landuse impact within the study area. A field methodology was then determined which would investigate a sample of the study area.

Landform units were identified to form the basis of the sample survey units, based on definitions provided in Appendix B. Three broad landform units were defined, that is ridges, hillslopes and gullies. The extent of each landform unit within the study area is shown on *Figure 3*. The survey design was such that a sample survey of each of the three landform units would serve as a basis for examining the distribution pattern of Aboriginal sites across the landscape with reference to the models previously proposed for the Hunter region, within both a local and regional context.

Sample survey areas within each landform unit were selected based on factors such as degree of exposure and visibility, areas of remnant woodland where old trees may exist or large isolated trees, distinctive features which may have attracted occupation and units of vegetation and ground cover. Particular attention was given to areas of exposed land where artefacts may be identified. However, sample units within vegetated areas were covered to minimise survey bias on areas where sites are commonly expected. Locations such as knolls, saddles and remnant woodland were surveyed for features which may not have been found if a random sample survey procedure was adopted.

4.2 FIELD METHODOLOGY

Sample survey areas were systematically inspected to locate and describe archaeological sites and to identify potential site locations and areas of archaeological sensitivity. A team of people, including an archaeologist, an assistant and two representatives from both the Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated provided maximum coverage of the sample units for the survey. Sample units were covered by transects on foot, generally with the survey team working at spaced intervals. This approach was considered to allow for a detailed examination of each landform unit. In addition, it was anticipated that a sample survey of each of the landform units of gullies, hillslopes and ridges would identify any sites located in or related to these landform units. This assisted in identifying the relationship between archaeological sites and different landform features in the Hunter Valley lowlands, where recorded sites are predominantly associated with water courses.

A record was made of the overall exposure and degree of archaeological visibility to enable an estimation of effective survey coverage. The aim of the investigations was to sample the archaeological resource present in the study area with predictive modelling used to supplement areas where sites are likely to be located and which do not require 100 per cent survey coverage, such as along creeklines. However, as much of the study area was covered as possible in the timeframe of field investigations. Several transects were walked across the study area, covering all landform units and areas of varying potential archaeological sensitivity. A number of transects were surveyed along and bisecting the contour. It is estimated that at least 80 per cent of the study area was surveyed on foot. The area surveyed is shown on *Figure 4*.

The survey was undertaken over 17 days in five stages throughout the period from the 11th December 1996 to 7th May 1997.

4.3 SURVEY COVERAGE

The most expected site type were open artefact scatters. Open camp sites can be difficult to locate and may go unrecorded due to thick grass cover or lack of erosional exposures.

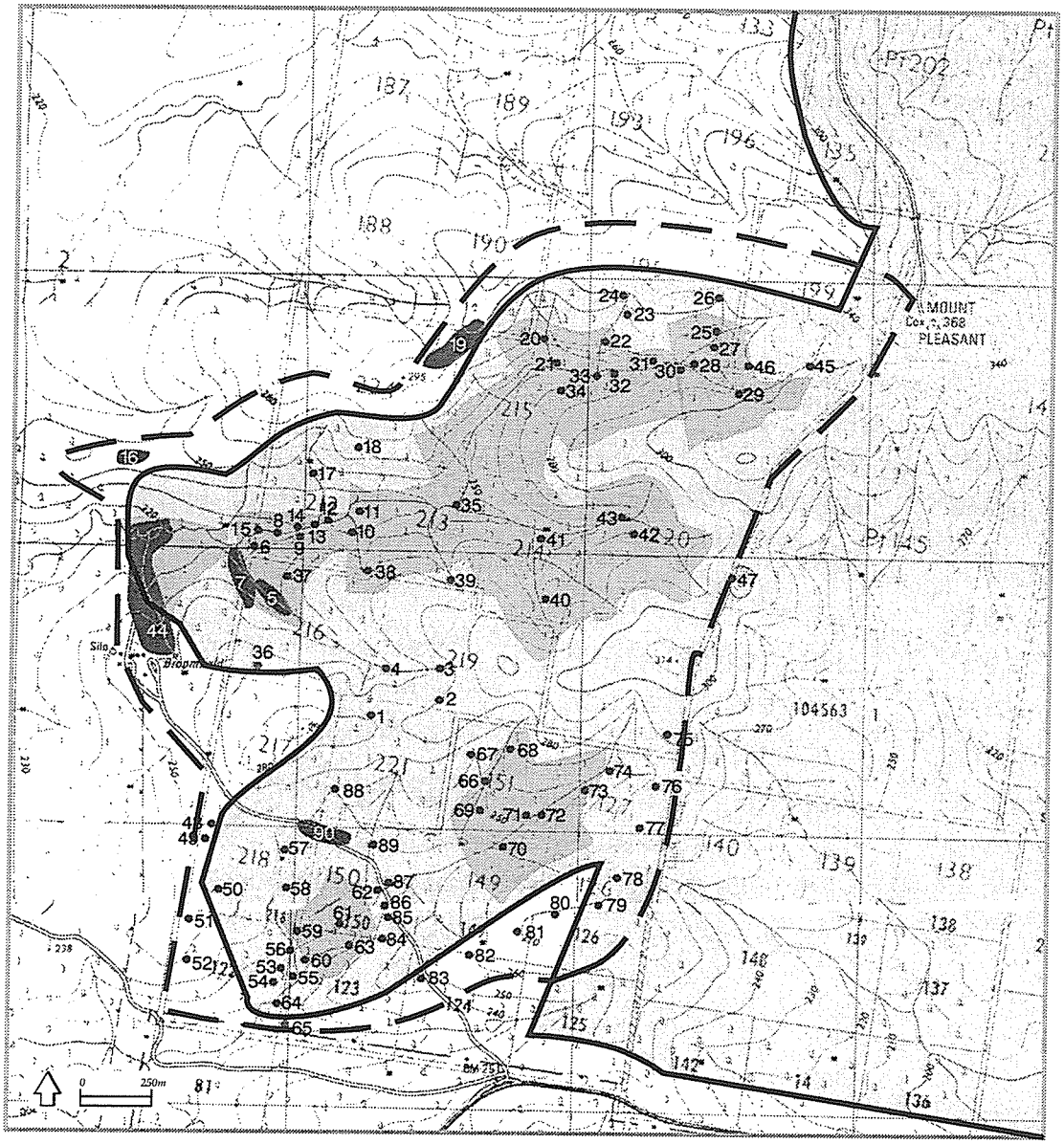


Figure 4 ARCHAEOLOGICAL SURVEY

Field survey effectiveness is related to ground surface visibility, which is a measure of the bare ground visible during the survey. The predominant factor affecting surface visibility is the degree of vegetation and ground cover, including leaf litter and stone "background noise". However, deposition of eroded material can also influence visibility. Surface visibility was variable, as expected, over the study area and estimated to be approximately ten per cent overall. Erosion was most prevalent along the creeklines, with other exposed ground mainly comprising areas of sheet erosion on flats, hillslopes and ridges and exposed vehicle tracks throughout the study area. Most of the study area had been cleared of original woodland, with only minimal areas of remnant woodland and regrowth.

Ground surface exposure was estimated to be ten per cent overall. Therefore, given the survey team covered at least 80 per cent of the study area, effective survey coverage was around eight per cent of the study area. However, in reality, effective coverage is higher given isolated artefacts, pebble tools and scarred trees are not necessarily related to surface exposure and visibility.

4.4 RECORDING TECHNIQUES

Sites identified during the survey were recorded in a field diary. All factors associated with each site, such as location, type, content, size, condition, environmental setting and observations for management options were noted. Sites are recorded on National Parks and Wildlife Service Standard Recording Forms and submitted to the National Parks and Wildlife Service for inclusion on the Aboriginal sites register.

4.5 RESULTS

4.5.1 Findings

i. Fine Rejects Emplacement Area

Investigations of the proposed study area located 90 sites, most of which were stone artefact scatters or isolated artefacts, with a total of 3,952 artefacts. The northern catchment contained 47 sites with 3,227 artefacts recorded. There were 43 sites with a total of 725 artefacts recorded in the southern catchment. A number of scarred and possible scarred trees were also found throughout the catchments.

A particularly large concentration of artefacts was recorded in the northern catchment. This was recorded in the field as a number of "sites", that is artefact scatters 50 metres or more away from another artefact scatter, in close proximity.

However, during analysis the artefact scatters were linked together as one site (site 44) as it was apparent that the entire area was utilised and the potential for artefacts to exist in the subsurface grassed areas between exposures was high. Consequently, the artefact concentration has been analysed as one site. There were 2,551 artefacts recorded on both sides of the creekline at its junction with the minor drainage line north of the Broomfield homestead. Artefacts were located in exposures down the hillslope along the minor drainage line and adjacent vehicle track, with a dense concentration at the main creekline. Artefacts may be concentrated at the creekline due to some degree of slope wash, particularly on the exposed and eroded track. Artefacts were also observed in large numbers along a dug-out channel formed to allow water to flow into a stock dam and on eroded surfaces around the dam. Although large numbers of artefacts were recorded in this area, further unrecorded surface and subsurface artefacts are anticipated in the adjacent undisturbed grassed areas.

ii. Rail link

Investigation of a portion of the proposed rail link to the south of the study area identified one open camp site, comprising nine artefacts, on a hillslope.

4.5.2 Site Descriptions

Sites located during the survey are described in *Table 4.1*. Site types include artefact scatters/open camp sites (OCS), isolated finds (ISF) and scarred trees (ST).

Table 4.1 SITE DESCRIPTIONS

Site Number	Field Site Number	Site Type	Artefact Numbers	Landform	Exposure (%)	Visibility (%)
1	1	OCS	28	hillslope	40	40
2	2	OCS	4	hillslope	40	30
3	3	OCS	2	gully	70	60
4	4	OCS	5	gully	70	60
5	5	OCS	24	gully	70	70
6	6	OCS	87	gully	80	80
7	7	OCS	50	hillslope to gully	40	90
8	8	OCS	8	gully	80	80
9	9	OCS	13	gully	80	50
10	10	OCS	106	gully	90	80

Table 4.1 SITE DESCRIPTIONS *(Contd)*

Site Number	Field Site Number	Site Type	Artefact Numbers	Landform	Exposure (%)	Visibility (%)
11	11	OCS	79	gully	80	80
12	12	OCS	8	gully	50	50
13	13	OCS	88	gully	90	60
14	14	OCS	37	gully	70	70
15	15	OCS	10	gully	70	70
16	16	OCS	9	hillslope	50	50
17	17	ST	-	hillslope	-	-
18	18	OCS	19	hillslope	50	50
19	19	OCS	10	ridge	10	10
20	20	OCS	5	hillslope (MDL)	50	70
21	21	ISF	1	gully	90	90
22	22	OCS	2	hillslope	90	90
23	23	ISF	1	hillslope	90	80
24	24	ISF	1	hillslope	90	80
25	25	ISF	1	hillslope (MDL)	40	50
26	26	OCS	11	hillslope (MDL)	40-50	40-50
27	27	OCS	5	hillslope (MDL)	40-50	40-50
28	28	OCS	4	gully	50	60
29	29	OCS	4	gully	70	70
30	30	OCS	5	gully	80	70
31	31	OCS	3	gully	80	70
32	32	OCS	2	gully	80	70
33	33	OCS	3	gully	80	80
34	34	ISF	1	gully	80	80
35	35	ISF	1	gully	90	90
36	-	ST (possible)	-	hillslope	-	-
37	36	ISF and ST	1	hillslope	10-100	10-100
38	37	OCS	2	hillslope (MDL)	50	50
39	38	OCS	5	hillslope (MDL)	50	50

Table 4.1 SITE DESCRIPTIONS *(Contd)*

Site Number	Field Site Number	Site Type	Artefact Numbers	Landform	Exposure (%)	Visibility (%)
40	39	ISF	1	hillslope (MDL)	50	10-20
41	40	OCS	17	hillslope	50	50
42	41	OCS	6	hillslope	80	80
43	42	OCS	2	gully	80	80
44	43-50	OCS	2,551	hillslope to gully	up to 100 (40-100)	up to 95 (30-95)
45	A	OCS	2	hillslope	5	5
46	B	ISF	1	hillslope	95	90
47	C	OCS	2	ridge	20	50
48	S1	OCS	15	hillslope	5-20	20-70
49	S2	OCS	21	hillslope	95	95
50	S3	ST (possible)	-	hillslope	-	-
51	S4	ISF	1	hillslope	90	90
52	S5	OCS	2	hillslope	5	40
53	S6	OCS	4	hillslope (MDL)	40	20
54	S7	OCS	21	hillslope to gully	90	90
55	S8	OCS	107	gully	60	80
56	S9	OCS	6	hillslope	50	70
57	S10	OCS	7	hillslope (MDL)	90	90
58	S11	OCS	2	hillslope (MDL)	90	90
59	S12	OCS	33	gully	90	90
60	S13	OCS	2	gully	90	80
61	S14	OCS	4	gully	90	80
62	S15	OCS	36	hillslope	90	90
63	S16	OCS	125	gully	70	70
64	S17	OCS	150	gully	50	60-70
65	S18	OCS	29	gully	95	90
66	S19	OCS	5	hillslope (MDL)	50	40
67	S20	OCS	2	hillslope	40	40

Table 4.1 SITE DESCRIPTIONS *(Contd)*

Site Number	Field Site Number	Site Type	Artefact Numbers	Landform	Exposure (%)	Visibility (%)
				(MDL)		
68	S21	OCS	8	hillslope (MDL)	50	40
69	S22	ISF	1	hillslope (MDL)	90	80
70	S23	OCS	4	gully	80	80
71	S24	OCS	2	gully	60-80	80
72	S25	OCS	2	hillslope	40	50
73	S26	ISF	1	gully	40	40
74	S27	OCS	3	hillslope (MDL)	60	70
75	S28	OCS	6	ridge	50-80	60-80
76	S29	ISF	1	ridge	90	80
77	S30	OCS	4	ridge	90	90
78	S31	OCS	9	ridge	95	90
79	S32	OCS	4	hillslope	80	80
80	S33	OCS	3	ridge	5	5
81	S37	ISF	1	hillslope	5	5
82	S38	OCS	2	hillslope	80	60
83	S39	OCS	9	hillslope	50	40
84	S40	OCS	16	hillslope (MDL)	70	70
85	S41	OCS	13	hillslope	40	40
86	S42	OCS	2	hillslope	80	70
87	S43	OCS	26	hillslope	30-80	80
88	A1	OCS	8	hillslope (MDL)	40	70-80
89	A2	OCS	2	hillslope (MDL)	60	60
90	A3	OCS	26	hillslope	100	50-90
91	Rail Link	OCS	9	hillslope	60	70

Notes:
1. *S in field site number indicates site in southern catchment*
2. *OCS = open camp site*
3. *ISF = isolated find*
4. *ST = scarred tree*
5. *MDL = minor drainage line*

4.6 ANALYSIS

Artefact analysis descriptions below are for the fine rejects emplacement area. Results for the site recorded in the rail link corridor are given separately.

4.6.1 Site Types

The range of site types recorded in the study area included:

- 73 open camp sites or artefact scatters (81%);
- 13 isolated finds (15%);
- three scarred trees, including two possible scarred trees (3%); and
- one isolated find in association with a scarred tree (1%).

The proportion of site numbers and types within each of the two catchments in the study area was comparable. In the northern catchment, there were 47 sites recorded including:

- 36 open camp sites (77%);
- eight isolated artefacts (17%);
- two scarred trees, including one possible scarred tree (4%); and
- one isolated artefact associated with a scarred tree (2%).

The southern catchment contained 43 sites including:

- 37 open camp sites (86%);
- five isolated artefacts (12%); and
- one possible scarred tree (2%).

4.6.2 Artefact Numbers

There was a vast range in artefact numbers within sites. Of the artefact scatter sites there were:

- 14 isolated artefacts (16%);
- 47 sites with two to ten artefacts (54%);
- 18 sites with between 11 and 50 artefacts (21%);
- seven sites with 51 to 150 artefacts (8%); and
- one site with over 150 artefacts (containing 2,551 recorded artefacts) (1%).

The proportions of artefact numbers within sites was comparable between the northern and southern catchments, with the majority of sites containing two to ten artefacts. The northern catchment contained a greater number of isolated finds than the southern catchment. The southern catchment contained a higher frequency of sites with higher numbers of artefacts than the northern catchment, however, there were no sites with over 150 artefacts in the southern catchment. Artefact numbers within sites in each catchment are shown in *Table 4.2* below.

Table 4.2 ARTEFACT NUMBERS

Catchment	Isolated Finds	2-10 artefacts	11-50 artefacts	51-150 artefacts	over 150 artefacts	Total
Northern	9 (20%)	23 (51%)	8 (18%)	4 (9%)	1 (2%)	45 (100%)
Southern	5 (12%)	24 (57%)	10 (24%)	3 (7%)	0	42 (100%)
TOTAL	**14 (16%)**	**47 (54%)**	**18 (21%)**	**7 (8%)**	**1 (1%)**	**87 (100%)**

Artefact numbers within sites is similar to the pattern identified by Rich (1995) for the Mount Pleasant Authorisation. However, the largest site in terms of artefact numbers previously recorded in the Mount Pleasant Authorisation, situated in the IJ confluence in the north, contained 63 artefacts (Rich, 1995). Within the study area, a small number of sites contained over 100 artefacts. In addition, the large concentration of artefacts north of the Broomfield homestead appears unique in a local and regional context given the artefact numbers recorded over the remainder of the Mount Pleasant Authorisation and Bengalla site as documented by Rich (1995).

4.6.3 Site Location

Sites were located in each landform unit as shown in *Table 4.3*. The majority of sites were located on the hillslopes followed by gullies then ridges. This is consistent with the degree of each landform unit within the study area as the study area mostly comprised hillslopes. Proportions of each type of site was comparable between the three landform units with each site type predominantly located on hillslopes followed by gullies then ridges. Open camp sites and isolated finds were associated with all three landform units. The scarred tree and two possible scarred trees were found on hillslopes.

Table 4.3 SITE LOCATION

Landform Unit	Open Camp Sites	Isolated Finds	Scarred Trees	Total
Gully	29 (32%)	4 (5%)	0	33 (37%)
Hillslopes	38 (42%)	9 (10%)	3 (3%)	50 (55%)
Ridge	6 (7%)	1 (1%)	0	7 (8%)
TOTAL	**73 (81%)**	**14 (16%)**	**3 (3%)**	**90 (100%)**

The range of artefact numbers in open camp sites in relation to the three landform units is tabulated below in order to assess the nature of sites in the landscape.

Table 4.4 OPEN CAMP SITE LOCATION

Landform Unit	2-10 artefacts	11 - 50 artefacts	51-150 artefacts	over 150 artefacts
Gully	16 (22%)	7 (10%)	7 (10%)	1 (1%)
Hillslopes	12 (16%)	9 (12%)	0	0
Hillslope associated with drainage line	13 (18%)	2 (3%)	0	0
Ridge	6 (8%)	0	0	0

Larger open camp sites or artefact scatters were associated with gullies. The majority of sites comprised between two and ten artefacts and were found in all three landform units, predominantly on hillslopes (including hillslopes associated with the upper reaches of creeklines or minor drainage lines), followed by gullies then ridges. The majority of sites with between 11 and 50 artefacts were also found on hillslopes, followed by gullies. There were no sites with this range of numbers of artefacts within the ridge/hilltop landform unit. No sites with over 50 artefacts were located on hillslopes or ridges within the study area. Sites on the ridge/hilltop landform unit all comprised up to ten artefacts.

In terms of artefact numbers, the majority of finds were situated along gullies and drainage lines. Lower numbers of artefacts were found on hillslopes and ridges.

4.6.4 *Artefact Assemblage*

The artefact assemblage for the study area, comprising the northern and southern catchments, was analysed to gain an overall impression of the nature of the archaeological resource within this part of the Mount Pleasant mine area.

i. Raw material

In relation to raw material, the vast majority of artefacts were silcrete, followed by mudstone, quartz, other fine grained siliceous material, petrified wood, chert, volcanic material including basalt, quartzite, siliceous conglomerate, porcellanite and one other unidentified material. Numbers and percentages of raw material in the artefact assemblage are shown below.

Table 4.5 RAW MATERIAL

Raw material	Number	Percentage
Silcrete	2,657	67.2%
Mudstone	650	16.4%
Quartz	227	5.7%
Fine Grained Siliceous	156	3.9%
Petrified Wood	101	2.6%
Chert	86	2.2%
Volcanic	32	0.8%
Quartzite	26	0.7%
Siliceous Conglomerate	14	0.4%
Porcellanite	2	0.1%
Other	1	0.0%
TOTAL	**3,952**	**100%**

The predominance of silcrete within the study area is consistent with results for the remainder of the Mount Pleasant Authorisation and Bengalla site to the south.

The numbers and percentages of artefact types according to raw material are detailed in *Table 4.6* following. Each percentage given is the proportion of the artefact type according to that particular raw material, as opposed to the entire artefact assemblage.

Table 4.6 ARTEFACT ASSEMBLAGE ACCORDING TO RAW MATERIAL

Type	S		MS		Q		FGS		PW		CH		Qite		V		SCG		Porc		Other	
		%		%		%		%		%		%		%		%		%		%		%
A	10	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	2	0.1	0	0	0	0	0	0	0	0	1	1.2	0	0	0	0	0	0	0	0	0	0
BB	14	0.5	3	0.5	0	0	0	0	1	1.0	0	0	0	0	0	0	0	0	0	0	0	0
C	109	4.1	12	1.8	0	0	4	2.6	0	0	2	2.3	1	3.8	0	0	2	14.3	0	0	0	0
F	664	25.0	203	31.2	6	2.6	18	11.5	17	16.8	17	19.8	0	0	1	3.1	1	7.1	1	50	0	0
FP	1,856	69.9	431	66.3	220	97.0	117	75.0	82	81.2	66	76.7	25	96.2	7	21.9	11	78.6	1	50	0	0
FRP	2	0.1	0	0	1	0.4	14	9.0	0	0	0	0	0	0	21	65.6	0	0	0	0	1	100
PT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6.3	0	0	0	0	0	0
P	0	0	1	0.2	0	0	3	1.9	1	1.0	0	0	0	0	1	3.1	0	0	0	0	0	0

Notes: 1. *Raw materials (across) - S (silcrete), MS (mudstone), Q (quartz), FGS (fine grained siliceous), PW (petrified wood), CH (chert), Qite (quartzite), V (volcanic including basalt), SCG (siliceous conglomerate), Porc (porcellanite).*

2. *Artefact types (down) - A (artefact in situ), B (blade), BB (backed blade), C (core), F (flake), FP (flaked piece), FRP (fractured pebble), PT (pebble tool), P (other piece).*

For the majority of raw materials, artefacts were predominantly flaked pieces and flakes, with the exception of quartzite and the "other" unidentified material. Large pebble tools and fractured pebbles/pieces were mostly volcanic and other fine grained siliceous materials. Tools and smaller artefacts were generally silcrete, mudstone, chert and petrified wood. This fits the pattern identified by Rich (1995) within the Mount Pleasant Authorisation.

The distribution of raw materials across the landscape was examined and the results are provided in *Table 4.7* below. The artefacts recorded at Site 44 were included in the analysis for "gully" as the site was predominantly associated with the creekline regardless of artefacts also being identified on the hillslopes.

Table 4.7 RAW MATERIAL DISTRIBUTION

Raw material	Gully		Hillslope		Ridge		Total	
	Number	%	Number	%	Number	%	Number	%
Silcrete	2,436	68.2	206	59.7	15	42.9	2,657	67.2
MS	601	16.8	45	13.0	4	11.4	650	16.4
Q	164	4.6	51	14.8	12	34.3	227	5.7
FGS	132	3.7	22	6.4	2	5.7	156	4.0
PW	97	2.7	4	1.2	0	0	101	2.6
CH	84	2.4	1	0.3	1	2.9	86	2.2
Qite	18	0.5	8	2.3	0	0	26	0.7
V	23	0.6	8	2.3	1	2.9	32	0.8
SCG	14	0.04	0	0	0	0	14	0.4
Porc	2	0.06	0	0	0	0	2	0.05
Other	1	0.03	0	0	0	0	1	0.03
TOTAL	**3,572**	**100**	**345**	**100**	**35**	**100**	**3,952**	**100**

Notes: 1. Raw materials (across) - S (silcrete), MS (mudstone), Q (quartz), PW (petrified wood), CH (chert), Qite (quartzite), V (volcanic including basalt), SCG (siliceous conglomerate), Porc (porcellanite).

Raw materials were predominantly located within the gully landform unit, followed by hillslopes then ridges. Some raw materials were only located in gullies, however, only in small amounts, including porcellanite, siliceous conglomerate and the "other" unidentified material. Petrified wood and quartzite artefacts were only found in sites on gullies and hillslopes.

ii. Artefact Types

The artefact assemblage predominantly comprised flaked pieces, followed by flakes, cores, fractured pebbles, backed blades including Bondi point and geometric microlith forms, artefacts *in situ*, other pieces, blades and pebble tools including a hammerstone.

The distribution of artefact types across the landscape was examined and the results are provided below.

Table 4.8 ARTEFACT TYPE DISTRIBUTION

Artefact Type	Gully		Hillslope		Ridge		Total	
	Number	%	Number	%	Number	%	Number	%
A	9	0.3	1	0.3	0	0	10	0.3
B	3	0.1	0	0	0	0	3	0.1
BB	17	0.5	1	0.3	0	0	18	0.5
C	118	3.3	11	3.2	1	2.9	130	3.3
F	853	23.9	67	19.4	8	22.9	928	23.5
FP	2536	71.0	254	73.3	26	74.3	2816	71.3
FRP	32	0.9	7	2.1	0	0	39	1.0
PT	2	0.1	0	0	0	0	2	0.1
P	2	0.1	4	1.5	0	0	6	0.2
TOTAL	3572	100	345	100	35	100	3952	100

Notes: 1. Artefact types (down) - A (artefact in situ), B (blade), BB (backed blade), C (core), F (flake), FP (flaked piece), FRP (fractured pebble), PT (pebble tool), P (other piece).

In general, most artefact types were located within the gully landform unit. Some types were only situated in gullies, including blades and pebble tools. Other "pieces" were found mostly on hillslopes, followed by gullies, however, only a small number of "pieces" were recorded. A total of 18 backed blades were recorded, with 17 (94%) situated in gullies and one (6%) found on a hillslope. A small number of artefact types were located on all three landform units of gullies, hillslopes and ridges. Cores, flakes and flaked pieces were the only types recorded within the ridge/hilltop landform unit. All other artefact types were found in gullies followed by hillslopes, with the exception of "pieces" which were mostly found on hillslopes.

iii. Reduction sequence indicators

The assemblage contained a number of artefacts displaying evidence of secondary modification for use including retouch and/or usewear. There were 146 artefacts recorded with retouch and/or usewear, comprising 3.7 per cent of the artefact assemblage within the study area. Modified artefacts in relation to raw materials and artefact types are tabulated below.

Table 4.9 MODIFIED ARTEFACTS ACCORDING TO RAW MATERIAL

Raw Material	Number	Percentage
Silcrete	81	55.5
Mudstone	38	26.0
Petrified Wood	9	6.2
Fine Grained Siliceous	8	5.5
Chert	5	3.4
Quartz	2	1.4
Volcanic	2	1.4
Porcellanite	1	0.7
TOTAL	**146**	**100**

Table 4.10 MODIFIED ARTEFACTS ACCORDING TO ARTEFACT TYPE

Artefact Type	Number	Percentage
Flaked Pieces	63	43.2
Flakes	60	41.1
Backed Blades	18	12.3
Blades	3	2.1
Pebble Tool	1	0.7
Core	1	0.7
TOTAL	**146**	**100**

Modified artefacts were found in both the northern and southern catchments, with the majority of pieces (81 or 55%) recorded within the concentration of artefacts at site 44.

The distribution of modified artefacts across the landscape was examined and the results provided in *Table 4.11*.

Table 4.11 DISTRIBUTION OF RETOUCH/USEWEAR ARTEFACTS

	Gully		Hillslope		Ridge		Total	
	Number	% of gully artefacts	Number	% of hillslope artefacts	Number	% of ridge artefacts	Number	% of all artefacts
TOTAL	126	3.5	16	4.6	4	11.4	146	3.7

Modified artefacts were predominantly found within sites located on gullies, with low numbers recorded on hillslopes and ridges.

A number of artefacts were recorded with cortex, the outer layer of rock. This may indicate reduction sequence and working areas or knapping floors within the study area. Of the entire assemblage recorded in the study area, there were 143 artefacts (3.6%) with varying percentages of cortex.

Artefacts with cortex were predominantly of mudstone, followed by silcrete, fine grained siliceous, chert, quartz, quartzite and volcanic. The proportions of raw materials and artefact types for artefacts with cortex are tabulated below.

Table 4.12 CORTEX ACCORDING TO RAW MATERIAL

Raw Material	Number	Percentage
Mudstone	69	48.3
Silcrete	50	35.0
Fine Grained Siliceous	16	11.2
Chert	5	3.5
Quartz	1	0.7
Quartzite	1	0.7
Volcanic	1	0.7
TOTAL	**143**	**100**

Artefact types with cortex were mostly flaked pieces, followed by flakes, cores, fractured pebbles/pieces and one artefact *in situ*.

Table 4.13 CORTEX ACCORDING TO ARTEFACT TYPE

Artefact Type	Number	Percentage
Flaked Pieces	81	56.6
Flakes	42	29.4
Cores	13	9.1
Fractured Pebbles	6	4.2
Artefact *in situ*	1	0.7
TOTAL	**143**	**100**

The majority of artefacts with cortex were found within the artefact assemblage of site 44 (113 or 79%).

The distribution of artefacts with cortex across the landscape was examined and the results are provided in *Table 4.14* below.

Table 4.14 DISTRIBUTION OF CORTEX

	Gully		Hillslope		Ridge		Total	
	Number	% of gully artefacts	Number	% of hillslope artefacts	Number	% of ridge artefacts	Number	% of all artefacts
TOTAL	134	3.8	9	2.6	0	0	143	3.6

The majority of artefacts with cortex were found in sites located within the gully landform unit. A small number of artefacts with cortex were found in sites on hillslopes. There were no recorded artefacts with cortex in sites within the ridge/hilltop landform unit.

iv. Artefact size

The size of artefacts within the assemblage were analysed in relation to both raw material and artefact types. The numbers and percentages of each are given in *Tables 4.15* and *4.16* following.

Table 4.15 ARTEFACT SIZE ACCORDING TO RAW MATERIAL

Artefact size	less than 3cm		3-5cm inclusive		greater than 5cm and up to 10cm		greater than 10cm		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
chert	67	77.9	15	17.4	4	4.7	-	-	86	100
FGS	60	38.5	66	42.3	28	17.9	2	1.3	156	100
mudstone	490	75.4	144	22.2	14	2.2	1	0.2	649 [1]	100
other	-	-	-	-	1	100	-	-	1	100
petrified wood	78	77.2	22	21.8	1	1.0	-	-	101	100
porcellanite	-	-	2	100	-	-	-	-	2	100
quartz	203	89.4	24	10.6	-	-	-	-	227	100
quartzite	17	65.4	8	30.8	1	3.8	-	-	26	100
silcrete	1,846	69.5	705	26.5	99	3.7	6	0.2	2,656 [1]	100
siliceous conglomerate	1	7.1	12	85.7	1	7.1	-	-	14	100
volcanic	3	9.4	9	28.1	19	59.4	1	3.1	32	100
TOTAL	**2,765**	**70.0**	**1,007**	**25.5**	**168**	**4.3**	**10**	**0.3**	**3,950**	**100**

Notes: 1. One mudstone and one silcrete artefact with no recorded dimensions.

Artefacts of mudstone, silcrete, other fine grained siliceous material and volcanic was represented in all size categories. Artefacts of fine grained siliceous materials were predominantly less than five centimetres, with the majority of mudstone and silcrete artefacts less than three centimetres. Volcanic artefacts, on the other hand, were generally larger, with the majority between five and ten centimetres.

Chert artefacts were predominantly smaller than three centimetres, followed by artefacts between three and five centimetres and artefacts between five and ten centimetres. There were no artefacts greater than ten centimetres. Other raw materials that followed this pattern included petrified wood and quartzite.

Quartz artefacts were all less than five centimetres, with most being less than three centimetres and the remainder between three and five centimetres.

Quartzite artefacts were predominantly less than three centimetres, followed by artefacts between three and five centimetres, then artefacts between five and ten centimetres.

The two porcellanite artefacts recorded were both between three and five centimetres.

The one artefact of "other" unidentified material was between five and ten centimetres.

Table 4.16 ARTEFACT SIZE ACCORDING TO ARTEFACT TYPE

Artefact size	less than 3cm		3-5cm inclusive		greater than 5cm and up to 10cm		greater than 10cm		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Artefact type										
Artefact in situ	8	80.0	1	10.0	1	10.0	-	-	10	100
Blade	3	100	-	-	-	-	-	-	3	100
Backed blade	13	72.2	5	27.8	-	-	-	-	18	100
Core	33	25.4	67	51.5	28	21.5	2	1.5	130	100
Flake	648	69.8	253	27.3	25	2.7	1	0.1	927 [1]	100
Flaked piece	2054	72.9	669	23.8	89	3.2	3	0.1	2815 [1]	100
FRP	3	7.7	10	25.6	23	59.0	3	7.7	39	100
Pebble Tool	-	-	-	-	1	50.0	1	50.0	2	100
Piece	3	50.0	2	33.3	1	16.7	-	-	6	100
TOTAL	**2765**	**70.0**	**1007**	**25.5**	**168**	**4.3**	**10**	**0.3**	**3950**	**100**

Notes: *1. One flake and one flaked piece with no recorded dimensions.*

Artefact types recorded in all size categories, although at varying proportions, were cores, flakes, flaked pieces and fractured pebbles or pieces.

Cores were predominantly between three and five centimetres, followed by less than three centimetres, then between five and ten centimetres and then over ten centimetres. The majority of flakes were less than three centimetres, followed by flakes between three and five centimetres, then artefacts between five and ten centimetres then those greater than ten centimetres. Flaked pieces were recorded in the same proportions of size categories as flakes.

The majority of backed blades were less than three centimetres, with a small number between three and five centimetres. Blades all measured less than three centimetres.

Artefacts in situ predominantly measured less than three centimetres, followed by between three and five centimetres, then between five and ten centimetres.

Pebble tools were recorded in the same proportion for between five and ten centimetres and over ten centimetres.

Fractured pebbles or pieces were mostly between five and ten centimetres, followed by those between three and five centimetres. Those less than three centimetres and those over ten centimetres were present in the same proportions.

Other pieces were mostly less than three centimetres, followed by those between three and five centimetres then between five and ten centimetres.

4.7 SITE 44

The number of artefacts recorded at site 44 was 2,551, comprising 65 per cent of the total artefact assemblage for the study area. In relation to raw material, the site 44 artefact assemblage predominantly consisted of silcrete, followed by mudstone, quartz, fine grained siliceous, chert, petrified wood, quartzite, volcanic, porcellanite and siliceous conglomerate. Proportions of raw materials are detailed in *Table 4.17* below.

Table 4.17 SITE 44 RAW MATERIALS

Raw Material	Number	Percentage
Silcrete	1,855	72.7
Mudstone	416	16.3
Quartz	89	3.5
Fined Grained Siliceous	71	2.8
Chert	68	2.7
Petrified Wood	31	1.2
Quartzite	11	0.4
Volcanic	7	0.3
Porcellanite	2	0.1
Siliceous Conglomerate	1	0
TOTAL	**2,551**	**100**

Artefact types included tools such as backed blades and other blades, modified pieces with retouch and/or usewear, knapping debris such as cores, flakes and flaked pieces and artefacts of volcanic materials such as fractured pebbles/possible pebble tools. Proportions of artefact types are provided in *Table 4.18* below.

Table 4.18 SITE 44 ARTEFACT TYPES

Artefact Type	Number	Percentage
Flaked pieces	1,786	70.0
Flakes	633	24.8
Cores	94	3.7
Backed blades	13	0.5
Fractured pebbles	13	0.5
Artefacts *in situ*	9	0.4
Blades	3	0.1
TOTAL	**2,551**	**100.0**

Site 44 contained 13 out of the 18 (72%) backed blades recorded within sites in the study area.

There were 82 artefacts recorded with some form of identifiable modification, including retouch and/or usewear. This comprised just over three per cent of artefacts recorded at site 44 and 56 per cent of all retouched and/or usewear artefacts recorded within the study area.

There were 114 artefacts at site 44 with some degree of cortex, constituting just over four per cent of artefacts recorded at site 44 and approximately 80 per cent of all artefacts with cortex within the study area.

Artefact types according to raw material within the site 44 assemblage are detailed in *Table 4.19*.

Table 4.19 SITE 44 ARTEFACT ASSEMBLAGE

Raw Material / Artefact Type	S		M		Q		FGS		CH		PW		Qite		V		Porc		SCG	
		%		%		%		%		%		%		%		%		%		%
FP	1,281	69.1	276	66.3	83	93.3	49	69.0	55	80.9	28	90.3	11	100	2	28.6	1	50.0	-	
F	471	25.4	132	31.7	5	5.6	11	15.5	10	14.7	2	6.5		-	1	14.3	1	50.0	-	
C	81	4.4	7	1.7		-	3	4.2	2	2.9	-		-		-		-		1	100
BB	11	0.6	1	0.2	-		-		-		1	3.2	-		-		-		-	
A	9	0.5	-		-		-		-		-		-		-		-		-	
B	2	0.1	-		-		-		1	1.5	-		-		-		-		-	
FRP	-		-		1	1.1	8	11.3	-		-		-		4	57.1	-		-	
TOTAL	**1,855**	**100**	**416**	**100**	**89**	**100**	**71**	**100**	**68**	**100**	**31**	**100**	**11**	**100**	**7**	**100**	**2**	**100**	**1**	**100**

Notes: 1. *Raw materials (across) - S (silcrete), MS (mudstone), Q (quartz), FGS (fine grained siliceous), CH (chert), PW (petrified wood), Qite (quartzite), V (volcanic including basalt), Porc (porcellanite) and SCG (siliceous conglomerate).*

2. *Artefact types (down) - FP (flaked piece), F (flake), C (core), BB (backed blade), A (artefact in situ), B (blade), FRP (fractured pebble).*

4.8 DISCUSSION

The distribution of sites across the landscape provides an indication of the nature and extent of past Aboriginal occupation of the study area and the area in general with comparison with the results over the remainder of the Mount Pleasant Authorisation.

Site types recorded within the study area were predominantly open camp sites or artefact scatters, with a small number of isolated finds and scarred and possible scarred trees. The range of site types recorded within the study area was typical for the region.

There was a wide variety of sizes of open camp sites in terms of artefact numbers. Sites ranged from two to 2,551 artefacts. The largest proportion of artefact scatters were within the range between two and ten artefacts, followed by sites with 11 to 50 artefacts, with a small number of sites containing between 51 and 150 artefacts and one site was recorded with over 150 artefacts (with 2,551 recorded artefacts).

Site types and artefact numbers within sites was similar to the pattern identified by Rich (1995) for the Mount Pleasant Authorisation. However, the maximum number of artefacts recorded at any location within the Authorisation was 63 (Rich, 1995). This partially indicates the significance of site 44 where 2,551 artefacts have been recorded with a high probability of additional surface and subsurface artefacts.

Sites were found in all three landform units, including gullies/valley bottoms, hillslopes and ridges/hilltops. Most sites were situated on hillslopes, being the most prominent landform in the study area. Fewer sites were located in gullies and on ridges. Artefact scatters were found in all three landform units. Open camp sites with a higher number of artefacts were found along gullies, while sites with fewer artefacts were mostly located on hillslopes and ridges. Scarred trees were associated with hillslopes.

Raw materials identified within the study area were mainly located in gullies, with fewer finds on hillslopes and ridges. Raw materials occurring in small proportions, including porcellanite, siliceous conglomerate and the "other" unidentified material, were only found in gully sites.

Artefact types were generally situated in sites within the gully landform unit. Types of artefacts occurring in low frequencies, including blades and pebble tools, were confined to gully locations. A small number of backed blades were found amongst the artefact assemblage, with 17 out of the 18 (94%) recorded in sites within the gully landform unit and one on a hillslope. In the remainder of the Mount Pleasant

Authorisation, backed blades were only recorded along gullies and mostly within the I and J catchments in the north of the Authorisation (Rich, 1995).

Artefacts with retouch and/or usewear were found within all three landform units with the greatest quantities located in gullies, followed by hillslopes and ridges.

Artefacts with cortex were mainly located within gullies and less commonly on hillslopes. There were no items with cortex recorded within the ridge/hilltop unit.

In relation to artefact size, the majority of artefacts of all raw materials were generally less than five centimetres, with the exception of volcanic artefacts and "other" unidentified material. Rich (1995) divided raw materials within the Mount Pleasant Authorisation into two types, including igneous material (axes and pebble tools) and fine grained siliceous materials such as silcrete, mudstone and quartz. Adopting a consistent approach for the study area shows that fine grained siliceous artefacts were generally smaller than igneous materials, with 96 per cent being less than five centimetres in size (71% were less than three centimetres). Igneous artefacts were present in all size categories, even though they comprised less than two per cent of the entire artefact assemblage. Most igneous artefacts were between five and ten centimetres, followed by those between three and five centimetres, those less than three centimetres and a small number larger than ten centimetres.

The majority of artefact types were smaller than five centimetres, with the exception of pebble tools and fractured pebbles. Tools such as backed blades were predominantly less than three centimetres.

The artefact assemblage was classified according to artefact type and raw material. Tools comprised backed blades of fine grained siliceous materials and larger igneous pebble tools. Backed blades were predominantly silcrete with small numbers of mudstone and one example of petrified wood. Blades were mostly silcrete or chert to a lesser degree. Pebble tools were made from volcanic material. The remainder of the artefact assemblage consisted of knapping debris or debitage, which was mostly silcrete with smaller numbers of other fine grained siliceous materials. Fractured pebbles and indeterminate pieces were predominantly of volcanic materials followed by fine grained siliceous, silcrete, quartz and the "other" unidentified raw material.

Most artefact assemblages in the study area consisted of knapping debris or debitage comprising cores, flakes, flaked pieces and other pieces, with some artefacts showing evidence of modification including retouch and usewear. Tools such as backed blades were located at a small number of sites. The majority of backed blades recorded were located at site 44. Artefacts at this site were concentrated at the creekline, but also recorded on the hillslope. Site 54, also situated on a gully and hillslope, contained two backed blades, cores, flakes and flaked pieces. Only three

other recorded sites contained backed blades. Site 10, which also contained a hammerstone, and Site 63 were situated in gullies, and Site 42 on a hillslope. Apart from site 10, the only other definite pebble tool recorded was located at Site 55 in a gully.

Backed pieces and other artefacts with retouch and/or usewear were predominantly of silcrete, and to a lesser degree mudstone, fine grained siliceous and petrified wood. Few were formed from chert, quartz, volcanic and porcellanite. The proportions generally reflected the abundance of these raw materials, with the exception of quartz.

Artefacts with cortex were mostly mudstone, comprising 48 per cent of all artefacts with cortex. Other raw materials included silcrete, fine grained siliceous, chert, quartz and quartzite.

The majority of artefact types were silcrete. However, the proportion of silcrete found within the study area was substantially greater than any other raw material recorded within the study area. Tools and debitage were predominantly silcrete. Pebble tools were formed from volcanic material, while fractured pebbles were predominantly volcanic material or fine grained siliceous material.

The majority of artefacts were flaked pieces or flakes for almost all raw materials, except volcanic artefacts which were predominantly fractured pebbles and the "other" unidentified raw material.

The high frequency of debitage within the study area is consistent with the findings for the Authorisation and Bengalla site (Rich, 1995). There was also a close similarity of artefact type distribution proportions between gullies, hillslopes and ridges. Tool types were generally located within gullies as opposed to the other two landform units.

Silcrete was the predominant raw material across the study area for tools and debitage. This is consistent with the findings over the remainder of the Authorisation (Rich, 1995) and may be associated with the known silcrete extraction site on the Bengalla site, although only low numbers of white silcrete were recorded in the study area.

Within the study area, silcrete made up 67 per cent of all artefacts recorded compared to 58 and 60 per cent recorded within the Mount Pleasant Authorisation and Bengalla site respectively (Rich, 1995). In comparison with the Mount Pleasant Authorisation and Bengalla sites, the frequency of mudstone in the study area was lower, quartz slightly higher, igneous materials lower and other fine grained siliceous materials slightly higher. As identified by Rich (1995) this pattern does not correspond with a standard distance-decay model which would suggest that with

increasing distance from the silcrete source, artefact density might have decreased, the frequencies of silcrete artefacts in sites might have decreased and the overall size of silcrete artefacts may have decreased. However, the expectations of a standard distance-decay model were not met within sites within the study area, due to a particularly large site and a high proportion of silcrete artefacts overall. This suggests that other factors, rather than proximity to a raw material source may have influenced the distribution and nature of artefact assemblages. The unusually large artefact concentration at site 44 on the creekline north of the Broomfield property suggests that this was a particularly pleasant setting or good location for occupation, regardless of a paucity of resources in the immediate vicinity.

There were no features of heat shatter technology recorded within the artefact assemblage.

Larger assemblages of artefacts are generally the most diverse in terms of artefact types (Kintigh, 1989). Consequently, backed blades would be expected to be found in larger site assemblages. Within the study area, there was a tendency for sites with higher artefact numbers to contain a wider variety of artefact types. The artefact assemblage of site 44 displayed a variety of both artefact types and raw materials within the study area as did other sites with higher artefact numbers (around 100 artefacts). Backed blades were more common in sites with higher artefact numbers, although they were also in some sites with low artefact numbers, including a site with only six artefacts recorded. The two pebble tools recorded were found in sites with just over 100 artefacts each.

The presence of backed blades and quartz artefacts within the artefact assemblage were the main indicators of age, suggesting occupation during the last 4,000 to 5,000 years, by comparison with the Eastern Regional Sequence and from dated sites in the Hunter region, as discussed in Section 3.2 on the regional archaeological context. However, there is no proven direct correlation between dated subsurface deposits and open deposits. No "contact" artefacts such as glass or ceramic were found during the field survey of the study area. Rich (1995) located a glass artefact and cores within the Authorisation, suggesting that occupation of the area continued into the contact period. There is a possibility that concentrated occupation, as evidenced by the extremely high number of artefacts recorded at site 44, may have been associated with the Broomfield homestead during the contact period, however, there were no artefacts observed to identify the site as a contact period site.

While ground surface exposure, visibility and past land use will have affected the observed archaeological record within the study area, both the observation potential of sites and the artefacts themselves, there appears to be some patterning in the composition and distribution of sites across the landscape. Rich (1995) suggested from results for the Mount Pleasant Authorisation that there may have been differences in base residential camps and other locations of resource gathering trips

into surrounding areas to procure food and various materials. Stone tools may have been made, used or maintained or discarded at these locations away from the residential bases. This was primarily based on the distribution of recorded assemblages by size (numbers of artefacts). Larger assemblages were generally 1.4 to 1.9 kilometres apart with smaller sites more dispersed. It was suggested that this may represent the distribution of residential bases from which daytime resource procurement trips were made, with localities such as the IJ confluence being repeatedly occupied (Rich, 1995: 43).

The results for the study area appear to show a different pattern of occupation. A dense concentration of artefacts at site 44 suggests that this location was potentially intensively and/or repeatedly occupied, to a much greater degree than over the remainder of the study area and Authorisation. A number of other larger, dense sites were recorded in the study area, particularly in the southern catchment. However, the results show that the whole of the study area was utilised to some degree by Aboriginal people in the past. Sites were recorded across the landscape of the study area, suggesting that the study area should be viewed as one large "site" of occupation, with artefacts only being observed where exposure and visibility allowed.

4.9 RAIL LINK

One open camp site recorded on the section of the proposed rail link to the west of the Bengalla site contained nine artefacts. The site was located on the hillslope approximately 200 metres north east of the drainage line.

Five silcrete artefacts were recorded, three flakes and two flaked pieces. Four mudstone artefacts included one flake and three flaked pieces. The mudstone flake had retouch. No artefacts were recorded with cortex.

Chapter 5

SIGNIFICANCE ASSESSMENT

This chapter describes assessment criteria, significance of archaeological sites and Aboriginal views on the study area.

5.1 SIGNIFICANCE ASSESSMENT CRITERIA

The basic processes of assessing significance for items of heritage are outlined by *The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance: The Burra Charter* and its associated *Guidelines*. Significance is a concept used to identify and assess attributes which make a place of value (Kerr, 1985). Heritage assessment guidelines from the Department of Planning (1990) propose a range of values which indicate some of the types of significance often used in heritage assessment, including archaeological and Aboriginal significance.

Significance of Aboriginal archaeological sites can be assessed according to a range of criteria including scientific or archaeological significance, significance to Aboriginal people, aesthetic value, representativeness and public value as an educational or recreational resource. Sites may be significant according to several of these criteria.

Criteria outlined by the NSW Department of Urban Affairs and Planning for evaluating items or places for inclusion in the State Heritage Inventory database are based on the nature of the significance and the degree of significance of the item or place. The nature of significance relates to historic, aesthetic, social, scientific or other special values. Degree of significance specifies whether the item or place is rare, representative or associative.

Aboriginal archaeological sites are generally assessed on their research or archaeological potential, rarity or significance for preservation. However, they may also be assessed on the degree to which they are representative or characteristic or whether they are associated with historical or cultural connections. Scientific significance is generally based on:

- a site's research or analytical potential;
- stratigraphic context;

- uniqueness;
- whether the site is a particularly good example of its type;
- state of preservation; and
- density and size.

Representativeness is determined where, as more sites are destroyed those that remain become more valuable and more representative of what is left.

The principal aim of cultural resource management is to conserve a representative sample of site types from different areas. Sites with inherently unique features or which are poorly represented elsewhere are considered to be archaeologically significant.

Aboriginal significance is the value placed upon a site or site complex by the local or regional Aboriginal community. A site's significance can be the result of several factors including:

- continuing cultural links with an historic, archaeological or landscape feature;
- concern for the protection and custodianship of burials; and
- the value of sites as tangible links with the lifestyle and values of their ancestors.

Significance may also be traditional or contemporary.

Aboriginal significance is taken as the perceived and expressed view of significance of the Aboriginal community in the present and not necessarily to its traditional significance to people in past times. It is important that the significance of sites to modern Aboriginal people as part of their living culture be used to assess Aboriginal significance (Davidson *et. al.*, 1993). These statements are made on the premise that it is difficult for a non-Aboriginal person to assess the significance of Aboriginal sites.

In Australia, all sites have some significance to Aboriginal people. Within this concept of significance some sites have particular traditional, historic or contemporary value to particular Aboriginal people. The antiquity of a site is not necessarily a guide to the significance to Aboriginal people. The Aboriginal significance of sites is a matter for the Local Aboriginal Land Council and/or local Aboriginal community to determine.

Aboriginal significance can only be assessed by Aboriginal communities. As part of this study, consultation with the Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated has aimed to identify the significance of sites to Aboriginal people.

The assessment of significance provides a basis for decisions about site management.

5.2 ARCHAEOLOGICAL SIGNIFICANCE OF SITES

Based on criteria for determining archaeological significance, each site located during the survey was awarded a significance rating. Site significance was assessed on scientific values including:

- research potential of the site (based on state of preservation and nature);
- rarity (in a local, regional, state or national context);
- representativeness of the site; and
- site density and size.

Site significance is detailed in *Table 5.1* below. Levels of significance are relative to each other, ranging from 1 to 5, with 1 indicating sites with the lowest relative significance and 5 indicating sites with the highest significance relative to other sites located during the survey. The research potential, representativeness and density/size of sites are indicated according to high, moderate or low. The site's rarity within a local, regional or State context is also detailed in the table below. A cross indicates that the site had no research potential, was not rare, representative, dense or large. A dash means that the category was not applicable to the site.

Table 5.1 SITE SIGNIFICANCE

Site Number	Research Potential	Rarity	Representative-ness	Density and Size	Significance Rating
1	×	×	Low	×	2
2	×	×	×	×	1
3	×	×	×	×	1
4	×	×	×	×	1
5	×	×	Low	×	2
6	×	×	Low	Low	3
7	×	×	×	×	2

Table 5.1 SITE SIGNIFICANCE *(Contd)*

Site Number	Research Potential	Rarity	Representative-ness	Density and Size	Significance Rating
8	×	×	×	×	1
9	×	×	×	×	1
10	×	×	Moderate	High	4
11	×	×	×	×	2
12	×	×	×	×	1
13	×	×	Low	×	3
14	×	×	×	×	2
15	×	×	×	×	1
16	×	×	×	×	1
17	×	Local	Moderate	-	4
18	×	×	×	×	1
19	×	×	×	×	1
20	×	×	×	×	1
21	×	×	×	×	1
22	×	×	×	×	1
23	×	×	×	×	1
24	×	×	×	×	1
25	×	×	×	×	1
26	×	×	×	×	1
27	×	×	×	×	1
28	×	×	×	×	1
29	×	×	×	×	1
30	×	×	×	×	1
31	×	×	×	×	1
32	×	×	×	×	1
33	×	×	×	×	1
34	×	×	×	×	1
35	×	×	×	×	1
36	×	Local	Low	-	4
37	×	Local	Moderate	×	4
38	×	×	×	×	1
39	×	×	×	×	1
40	×	×	×	×	1

Table 5.1 SITE SIGNIFICANCE *(Contd)*

Site Number	Research Potential	Rarity	Representative-ness	Density and Size	Significance Rating
41	×	×	×	×	2
42	×	×	×	×	2
43	×	×	×	×	1
44	High	Regional	Moderate	High	5
45	×	×	×	×	1
46	×	×	×	×	1
47	×	×	×	×	1
48	×	×	×	×	1
49	×	×	×	×	1
50	×	Local	Low	-	4
51	×	×	×	×	1
52	×	×	×	×	1
53	×	×	×	×	1
54	×	×	×	×	2
55	Low	×	×	Moderate	3
56	×	×	×	×	1
57	×	×	×	×	1
58	×	×	×	×	1
59	×	×	×	×	2
60	×	×	×	×	1
61	×	×	×	×	1
62	×	×	×	×	2
63	Low	×	Low	Moderate	3
64	Moderate	×	Low	High	4
65	×	×	×	×	2
66	×	×	×	×	1
67	×	×	×	×	1
68	×	×	×	×	1
69	×	×	×	×	1
70	×	×	×	×	1
71	×	×	×	×	1
72	×	×	×	×	1
73	×	×	×	×	1

Table 5.1 SITE SIGNIFICANCE *(Contd)*

Site Number	Research Potential	Rarity	Representative-ness	Density and Size	Significance Rating
74	×	×	×	×	1
75	×	×	×	×	1
76	×	×	×	×	1
77	×	×	×	×	1
78	×	×	×	×	1
79	×	×	×	×	1
80	×	×	×	×	1
81	×	×	×	×	1
82	×	×	×	×	1
83	×	×	×	×	1
84	×	×	×	×	1
85	×	×	×	×	1
86	×	×	×	×	1
87	×	×	×	×	2
88	×	×	×	×	1
89	×	×	×	×	1
90	×	×	×	×	2
91	Moderate [6]	×	×	×	1

Notes:
1. *values 1 to 5 = low to high level significance.*
2. *low, moderate and high values relates to research potential, representativeness and site density and size.*
3. *local and regional values relates to the site's rarity.*
4. *× indicates "No".*
5. *indicates "Not Applicable".*
6. *research potential in surrounding area.*

Sparse and disturbed sites are generally less significant than large, intact sites. The nature of the artefacts and the potential for undisturbed subsurface deposits were also factors considered.

All sites have value at a general heritage level in that they provide further information on local and regional site nature and distribution.

The majority of open artefact scatters located within the study area have little archaeological significance due to the low density of artefacts and high degree of disturbance from erosion and extensive land clearing and grazing. Isolated finds are generally considered to have low archaeological significance.

The large concentration of artefacts at site 44 and a number of other dense concentrations of artefacts were considered to have high and moderate archaeological significance.

The majority of sites were of limited archaeological significance and research potential due to low artefact density, the nature of the deposits (that is, low potential to provide new information on the archaeology of the locality or region) and the degree of disturbance.

Potential exists for subsurface archaeological deposits to occur in the study area, based on the distribution of archaeological material in exposed areas over the three landform units. While it is accepted that the surface distribution of artefacts is not always reflective of the subsurface archaeological deposits, it is considered that the nature of surface and subsurface deposits will be comparable. Consequently, surface sites recorded can be used to predict a site location pattern across the study area.

The distribution of sites in the landscape appear to conform to regional models, namely that gullies/valley bottoms have the highest artefact density. Further, sites in gullies are likely to mainly be open artefact scatters. Hillslopes and ridges have low artefact density with a higher proportion of isolated finds.

The sites located in the study area were typical of sites identified in the local area and region. Artefact scatters are the most common site type. The range of open camp sites were generally similar in size, content and context to known sites in the region. However, some of the larger, more dense sites were considered to be archaeologically significant and have potential for site interpretation or conservation. Highly significant artefact scatter sites included:

- site 10, which had high artefact density and size and was a moderately representative sample;
- site 44, which had high research potential, regional rarity, moderate representativeness and high artefact density and size; and
- site 64, which had moderate research potential and high artefact density and size.

In addition, sites of moderate archaeological significance site, predominantly based on artefact density, included:

- site 55; and
- site 63.

The scarred trees were classed as highly significant as this type of site is not often recorded in the region given the degree of past clearing. Sites of this type included:

- site 17;
- site 36;
- site 37; and
- site 50.

5.3 ABORIGINAL VIEWS

Aboriginal significance is an issue for the local Aboriginal community to determine. Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated were consulted as outlined in section 1.4. At the time of report preparation, the Land Council had not provided a written response on the findings of the survey.

Tribal Council provided a letter outlining their views on the Aboriginal sites recorded within the study area in relation to the proposed development. The letter is attached as Appendix A. Their report states that Tribal Council does not support the destruction of any sites or "Cultural Areas" until further negotiation with the developer has taken place.

Consultation will continue to determine the need for further work prior to destruction of Aboriginal sites with proposed operations and to ensure that the concerns of the Aboriginal community are considered in relation to the proposed development.

Chapter 6

IMPACTS AND SAFEGUARDS

This chapter outlines the impact of the proposal and appropriate management measures for the archaeological resource.

6.1 IMPACT OF THE PROPOSAL

A series of ponds will be established in the study area for coal washery fines as part of the Mount Pleasant coal mine development. Two emplacement walls will initially be formed at the top end of the northern catchment and an environmental dam constructed in the centre of the catchment. At about Year 10, the central environmental dam will be enlarged to facilitate continued fines emplacement and a new environmental dam constructed at the lower end of the catchment. In general, two emplacements will be active at any one time. As each emplacement fills another will be placed immediately downstream, forming a series of emplacement terraces.

The southern catchment is a provisional fine rejects emplacement area. The catchment will be utilised if more fine reject is generated than currently predicted, with the progression of emplacements and environmental dams following the stepped approach of the northern catchment.

The location of emplacements and dams are shown on *Figure 4.*

6.2 IMPACTS TO ARCHAEOLOGICAL SITES

A number of archaeological sites will be impacted by the proposed development of the fine rejects emplacement areas. Impacts will be greatest in the northern catchment due to the progressive construction of fine rejects emplacement and environmental dams from the upper catchment in the east to the west. A number of sites within the northern catchment and the provisional southern catchment will not be impacted by proposed operations. The location of archaeological sites in relation to areas affected by fine rejects emplacement are shown on *Figure 4.*

Based on the location and timing of fine rejects emplacement, the impact to archaeological sites was determined. Sites which will be impacted or avoided, in addition to those situated on the border of proposed works are given in *Table 6.1.*

Table 6.1 SITE IMPACT

Not Impacted		Impacted		On Border	
Site Number	Significance Rating	Site Number	Significance Rating	Site Number	Significance Rating
1	2	5	2	46	1
2	1	6	3	74 (just outside)	1
3	1	7	2	84 (just outside)	1
4	1	8	1		
16	1	9	1		
17	4	10	4		
18	1	11	2		
19	1	12	1		
23	1	13	3		
24	1	14	2		
26	1	15	1		
36	4	20	1		
39	1	21	1		
45	1	22	1		
47	1	25	1		
48	1	27	1		
49	1	28	1		
50	4	29	1		
51	1	30	1		
52	1	31	1		
53	1	32	1		
54	2	33	1		
55	3	34	1		
56	1	35	1		
57	1	37	4		
58	1	38	1		
62	2	40	1		
64	4	41	2		
65	2	42	2		
67	1	43	1		
75	1	44 (partial impact)	5		

Table 6.1 SITE IMPACT *(Contd)*

Not Impacted		Impacted		On Border	
Site Number	Significance Rating	Site Number	Significance Rating	Site Number	Significance Rating
76	1	59	2		
77	1	60	1		
78	1	61	1		
79	1	63	3		
80	1	66	1		
81	1	68	1		
82	1	69	1		
83	1	70	1		
85	1	71	1		
86	1	72	1		
87	2	73	1		
88	1				
89	1				
90	2				

Note: 1. *Lowest relative significance*

Fine rejects emplacement and environmental dam construction in both the northern and southern catchments was considered when assessing impacts to the archaeological resource. Half of the recorded sites within the study area, that is 45 out of the 90 sites, will not be affected by the proposed development. A total of 42 recorded sites will be impacted by progressive fine rejects emplacement. A number of these were situated within the southern catchment, which is a provisional emplacement area. Three sites were situated on the border of proposed works and may or may not be affected.

The average significance of sites that will be affected by proposed development was only slightly higher than the average for sites that will not be impacted. However, a number of sites that will be affected were representative of sites in the area, with a degree of rarity and moderate to high density/size. One scarred tree, associated with an isolated artefact, will be impacted by proposed development while the other scarred tree and two possible scarred trees will not be affected. Sites situated on the border of proposed works were not archaeologically significant.

The establishment of an environmental dam in the westernmost part of the northern catchment will affect the largest concentration of archaeological deposits at site 44. The construction of the dam will not take place until at least Year 10 of operations and impact will be partial, affecting the creekline artefacts rather than higher up the hillslope. Continued consultation with the Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated during this period should determine appropriate options for managing this area or further works in the ten year period prior to proposed operations.

The southern catchment is a provisional fine rejects emplacement in case greater quantities of fine rejects are generated than currently anticipated. As such, it is unlikely that this area will be disturbed within this development consent. However, should this provisional area be utilised, site 64, a dense site with moderate research potential, will not be affected.

6.3 MANAGEMENT RECOMMENDATIONS

The basic principle of cultural resource management is that where possible very significant sites should be left undisturbed.

The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance: The Burra Charter specifies guidelines on Cultural Significance and Conservation Policy. The Australia ICOMOS Charter specifically deals with items of built heritage but can also be applied to Aboriginal heritage items. The guidelines state that "the aim of conservation is to retain or recover the cultural significance of a place and must include provision for its security, its maintenance and its future" (Australia ICOMOS, p2).

Appropriate conservation policy is determined by an understanding of the cultural significance and physical condition of a place. In general, sites with inherently unique features or which are poorly represented elsewhere are considered to be archaeologically significant and warrant conservation.

A number of measures may be adopted to limit the potential impact of the development on the archaeological resource of the study area. These measures are consistent with those outlined by Rich (1995) for the Mount Pleasant Authorisation. Management measures include:

- avoidance of archaeological sites, where possible;
- sites that will be affected by proposed development be given Consent to Destroy where they had (i) a significance rating of three (3) or lower, or (ii) a significance rating of four (4) but low research potential;

- sites adjacent to works should be protected from inadvertent damage, such as through site locations being identified to the developer prior to construction works and temporary fencing;

- preparation of a management plan for site 44 to ensure mitigation against further disturbance in the ten year period prior to proposed construction of the environmental dam;

- preservation of site 64 and adjacent land to the south towards site 65 as it was a large, dense site with moderate research potential. Management measures may be incorporated into the management plan for site 44; and

- continued consultation with the local Aboriginal community through the Wanaruah Local Aboriginal Land Council and Wonnarua Tribal Council Incorporated, particularly in relation to the management of sites 44 and 64.

Management recommendations are detailed in *Table 6.2* below.

Table 6.2 MANAGEMENT RECOMMENDATIONS

Avoid (No Impact)	Consent to Destroy Recommended	Management Measures
sites 1 - 4	sites 5 - 9	site 10 - collection prior to destruction as moderately representative sample of artefacts but no research potential
sites 16 - 19	sites 11 - 15	site 37 - consider refining emplacement pond to avoid scarred tree
sites 23 - 24	sites 20 - 22	site 44 - management plan in consultation with local Aboriginal community
site 26	site 25	site 64 - will be avoided, but should be incorporated into management plan in consultation with local Aboriginal community
site 36	sites 27 - 35	
site 39	site 38	
site 45	sites 40 - 43	
sites 47 - 58	sites 59 - 61	
site 62	site 63 - as low research potential and not representative	
sites 64 - 65	site 66	
site 67	sites 68 - 73	
sites 75 - 83	site 46 (if required)	
sites 85 - 90	site 74 (if required)	
	site 84 (if required)	

Site 91, situated off the proposed rail link alignment, will not be affected by the development. The site was not archaeologically significant, however, further consultation with the local Aboriginal community will determine whether additional work is required at this location on the basis of recent excavation works undertaken on the Bengalla site. The archaeological results of this work have not yet been made available. A review of the results will also indicate whether further archaeological work would be appropriate as research potential in the surrounding area was considered to be moderate.

Under section 90 of the National Parks and Wildlife Act 1974, it is an offence to knowingly deface, damage or destroy an Aboriginal relic or place without first obtaining written consent from the Director-General of the National Parks and Wildlife Service. Permits may be obtained to allow the destruction of a site. Consent to destroy known artefacts which will be affected must be obtained from the National Parks and Wildlife Service prior to the commencement of operations.

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GLOSSARY

Artefact — artefacts are identified as culturally produced stone flakes. Stone used for tool production would be flakeable, fine grained, homogenous and sufficiently hard to hold a reasonable edge. Siliceous rocks are suitable for flaking.

Backed blade — a modified flake or section of a flake, usually with a triangular cross-section, with retouch along one edge (the thick edge) and the opposite margin is a sharp edge. Including Bondi point forms and other geometric microlith forms such as scrapers.

Blade — a flake which is at least twice as long as broad, with fairly regular margins approximately parallel or ending in a point.

Core — cores are the main pieces of stone from which flakes are struck and show negative flake scars, including reverse bulbs of percussion. The original piece of stone may have been a cobble, a heat-shattered piece, a large flake or flaked piece.

Cortex — the weathered outer surface of a piece of rock.

Debitage — the component of the assemblage consisting of cores and unmodified flakes, broken flakes and flaked pieces.

Flake — whole flakes have a conchoidal fracture (a bulb of percussion) and a ringcrack on the platform where the flake was struck. Flakes have a number of distinguishing features. The top of the flake is the striking platform, carried away from the striking platform of the core. The flake has also carried away part of the side of the original core and this surface of the flake is called the dorsal surface. The other surface of the flake, that was inside the core, is called the bulbar or ventral surface. The bulbar surface shows several features (conchoidal fractures) that are characteristic of culturally produced flakes. The point of impact may survive as a circular crack on the striking platform. From this point the shock waves, that detached the flake, radiated out through the core and left characteristic features on the bulbar surface including the bulb of percussion and bulbar scar. Over the bulbar surface, waves or ripples which represent the dispersal of energy from the blow which

	detached the flake emanate from the point of impact. Fissures radiate out from the point of impact and are especially noticeable near the margins of the flake.
Flaked Piece	flaked pieces can be distinguished as an artefact as they exhibit flaking fracture, but can not be classified as a flake or core as the defining characteristics are missing.
Hammerstone	a piece of stone used to strike another block of stone to remove flakes.
Isolated Find	an isolated artefact, that is, not in association with other artefacts in an area.
Knapping	the process of flaking stone for use
Knapping floor	a discrete concentration of artefacts resulting from one or more knapping events involved in the reduction of a single type of stone. Floors resulting from single events are usually less than three metres across, but they may overlap or be superimposed to form a composite floor, where more than one reduction sequence and more than one raw material may be represented.
Manuport	a lump of unworked but useable raw material.
Open Camp Site	an artefact scatter or a concentration of artefacts.
Reduction Sequence	the order in which flakes are removed from a core.
Retouch	flakes can be retouched, that is, shaped by further flaking after being detached from the core. Common retouched forms include backed blades and geometrics. Backed blades are thin, elongated flakes or blades which are blunted by retouch along one margin, the thick edge. Geometrics are small triangular flakes with two edges blunted by retouch and one sharp edge. Secondary flaking is the modification of the flake for use.
Scarred Tree	a tree where the bark has been removed for use leaving a scar
Usewear	secondary modification may be accidental, such as usewear where an edge is fractured by a chopping action or abraded where the edge of the flake becomes striated or polished.

APPENDICES

Appendix A

ABORIGINAL CONSULTATION LETTERS

Wonnarua Tribal Council Inc.

Po Box 184
14 Kent St
Singleton NSW 2330

Telephone Mobile 017 625521 / 010 174946
Phone 02 6572 1889 Fax 02 6572 1889

Alison Nightingale
Consulting Archaeologist
ERM Mitchell McCotter
Po Box 943
Crows Nest NSW 2065

2nd September 1997

RE; Mt Pleasant Dam Site Inspection

Dear Alison
As stated in our telephone conservation, dated the 2nd of September 1997, with regards to Mr Tom Millers 2nd assessment of the Dam Site Proposal, I have been in contact with Mr Miller about his views concerning the Wonnarua Aboriginal Sites relocated during the Sites Survey.

The recommendations and conditions that where previously tabled, 10th April 1997 have now been withdrawn following Mr Tom Millers Heritage Assessment, based upon our Rights as the Traditional Land Owners of the Hunter Valley.

The new recommendations are as follows;

1. The Wonnarua Tribal Council would not agree to the Consent to destroy of any Sites found within the current Dam Proposal Survey area.

2. The Wonnarua people, who make up the Wonnarua Tribal Council, are the present day Descendants of the Historical Wonnarua People, who made the Aboriginal sites now relocated on the land close to the Mine Proposal, **do hereby withdraw their support for any Cultural Areas or Recorded Sites to be Destroyed within the Mt Pleasant Coal Lease area,** also

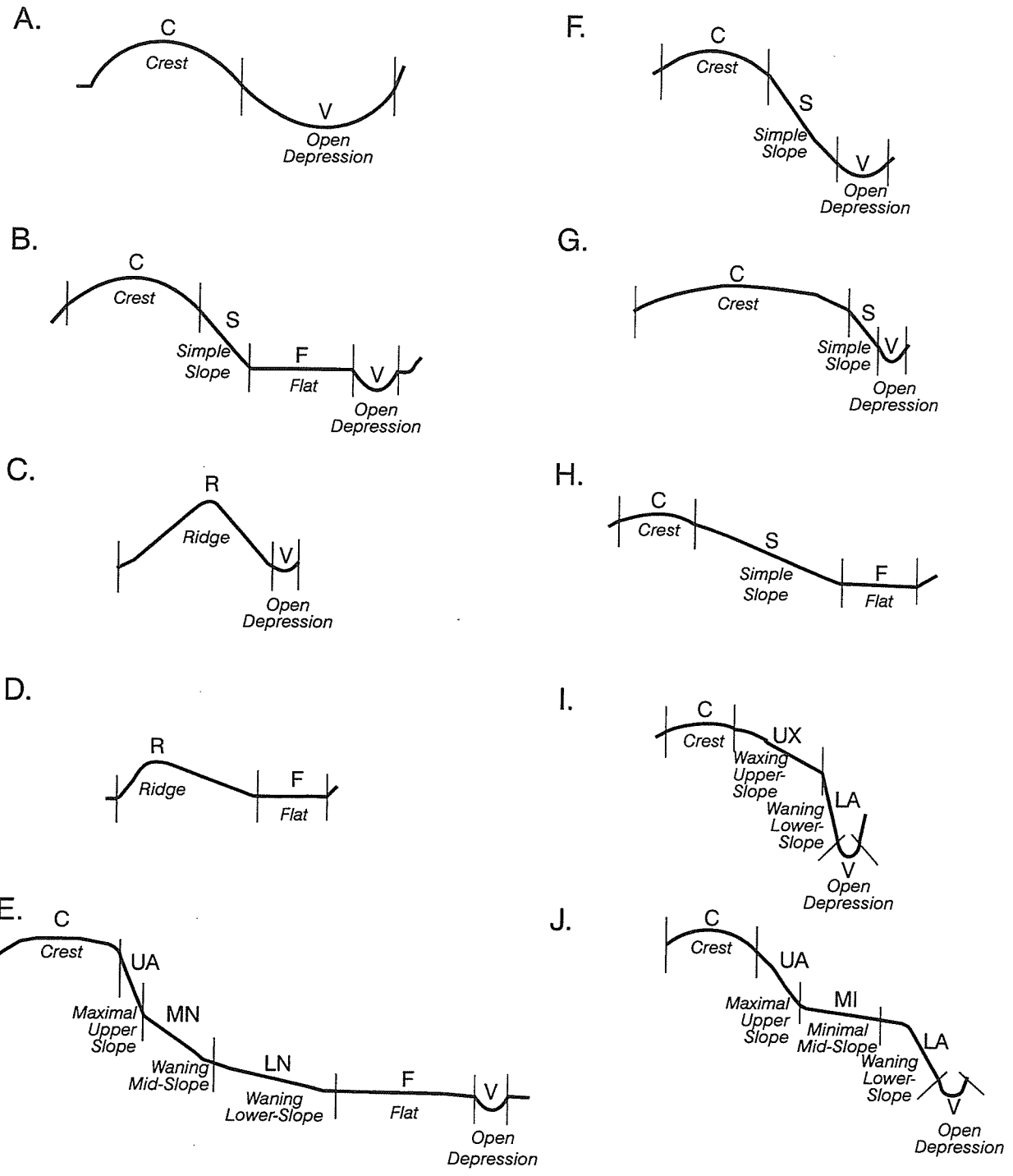
3. This position will only be negotiated after proper Consultation has taken place with the Developer RIO -TINTO through their top level management.

Yours Thankfully

Victor Perry
Cultural Heritage Officer
Wonnarua Tribal Council Inc.

Appendix B

LANDFORM UNIT DEFINITIONS



Examples of profiles across terrain divided into morphological types of landform element. Note that the boundary between crest and slope elements is at the end of the curvature of the crest. Each slope element is treated as if it were straight.

Source: AUSTRALIAN SOIL AND LAND SURVEY, 2ND EDITION, 1990

LANDFORM ELEMENTS

B.1 DEFINITIONS

Crests and depressions form the highest and lowest parts of the terrain.

Crests were defined as the landform element that stands above all, or almost all points in the adjacent terrain, being characteristically smoothly convex upwards with the margin of the crest at the limit of observed curvature.

A depression was defined as the landform element that stands below all, or almost all points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave upwards and their margins should be drawn at the limit of observed curvature.

Slopes were defined as a planar landform element that is neither a crest nor a depression and has an inclination greater than about 1 per cent. Slopes were divided into four morphological types which are distinguished relative to crests, flats and depressions. These include:

- a simple slope which is a slope element adjacent below a crest or flat and adjacent above a flat or depression,
- an upper slope which is a slope element adjacent below a crest or flat but not adjacent above a flat or depression;
- a mid-slope which is a slope element not adjacent below a crest or flat and not adjacent above a flat or depression; and
- the lower slope which is a slope element not adjacent below a crest or flat but adjacent above a flat or depression.

Flats were defined as a planar landform element that is neither a crest nor a depression and is level or very gently inclined (less than 3 per cent tangent approximately).

In addition, several types of landform feature have crests and adjoining hillslopes, including hillock and ridge. A hillock was defined as a compound landform element comprising a narrow crest and short adjoining hillslopes, the crest length being less than the width of the landform element. A ridge was defined as a compound landform element comprising a narrow crest and short adjoining hillslopes, the crest length being greater than the width of the landform element.

Other landform elements referred to in the study are defined below.

A bank was defined as a very short, very wide slope, moderately inclined to precipitous, forming the marginal upper parts of a stream channel and resulting from erosion or aggradation by channelled stream flow.

A drainage depression or drainage line is a level to gently inclined, long, narrow, shallow open depression with smoothly concave cross-section, rising to moderately inclined side hillslopes, eroded or aggraded by sheet wash.

A gully was defined as an open depression with short, precipitous walls and moderately inclined to very gently inclined floor or small stream channel, eroded by channelled stream flow and consequent collapse and water-aided mass movement.

Appendix C

RAW DATA

C.1 KEY TO ABBREVIATIONS

C.1.1 Site Types

ISF	Isolated Find
OCS	Open Camp Site
ST	Scarred Tree

C.1.2 Artefact Types

A	Artefact in situ
B	Blade
BB	Backed Blade (Bondi point form)
BB(SCR)	Backed blade, geometric microlith or scraper form
C	Core
F	Flake
FP	Flaked Piece
FRP	Fractured Pebble
PT	Pebble Tool
P	Piece (other)

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
1	1	292250	6430400	OCS	hillslope	surface sheet erosion	40x30	40	40	on hard ground surface	eroded	28	grey	FGS	piece	5.0	3.5	2.0			
					north aspect, facing onto drainage line								grey	mudstone	F	3.5	4.0	2.0			
													grey	mudstone	F	3.5	2.5	1.0			
													grey	mudstone	FP	1.0	1.0	0.5			
													grey	mudstone	FP	1.0	1.0	0.2			
														volcanic	FRP	5.0	4.0	3.0			
														quartz	FP	3.0	2.0	1.0		50 (on one side)	
														quartz	FP	1.0	1.0	1.0			
														quartz	FP	1.0	1.0	1.0			
														quartz	FP	1.0	0.5	0.5			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	0.5	0.5	0.2			
													grey	silcrete	F	4.0	2.0	2.0			
													grey	silcrete	F	1.0	1.5	0.2			
													grey	silcrete	F	4.0	2.0	1.0			
													grey	silcrete	F (broken)	2.0	3.0	1.0			
													grey	silcrete	FP	2.0	1.5	1.0			
													grey	silcrete	FP	2.0	1.5	1.0			
													grey	silcrete	FP	4.0	3.5	2.5			
													grey	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	3.0	2.5	2.0			
													grey	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	3.5	3.0	2.5			
													grey	silcrete	FP	2.0	1.5	1.0			
													dark grey (red fleck)	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	2.5	2.0	1.0			
													grey	silcrete	FP	1.0	1.0	0.2			
													grey	silcrete	FP	3.5	2.5	1.0			
2	2	292500	6430450	OCS	hillslope	sheet erosion	25x5	40	30	on surface	eroded	4		FGS	F	2.0	1.5	0.5			bulb of percussion but no point of impact, weathered
														volcanic	FRP	7.0	5.0	5.0			
													grey	silcrete	C (blade)	5.5	3.5	4.0			
													grey	silcrete	FP	2.0	1.5	0.5			probable blade flake but broken
3	3	292500	6430550	OCS	gully	gully erosion	20x3	70	60	in gully	eroded	2	grey red edges along top)	mudstone	F (broken)	4.0	2.5	1.5			
					upper drainage line									quartzite	FP	2.5	2.0	0.5			
4	4	292300	6430550	OCS	gully	gully erosion	20x10	70	60	in gully	eroded	5	brown - striated (dark/light)	chert	F	2.5	2.5	0.5			
					upper drainage line								grey	mudstone	F						
														quartz	FP	2.5	0.5	0.5	backed		
														quartz	FP	4.5	3.5	3.0			
													red	silcrete	FP	3.0	2.5	1.0		50	
5	5	291900	6430850	OCS	gully	sheet and gully erosion	100x20	70	70	on ground surface and amongst grass	eroded	24	grey	mudstone	C	6.0	4.0	3.0		85	
													orange	mudstone	F	4.0	2.5	2.0			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	mudstone	FP	7.0	3.0	3.0			
														volcanic	FRP	7.0	5.0	2.0			
														quartz	FP	2.0	2.0	1.5			on stream bank
														quartz	FP	1.5	1.5	1.0			worn on one side
														quartz	FP	2.5	1.5	1.0			
														quartz	FP	2.0	1.5	1.0			
													pink	silcrete	F	4.0	2.0	1.0			
													pink	silcrete	F	5.0	5.0	1.5			
													pink	silcrete	F	2.0	1.0	0.5			
													grey	silcrete	F	3.5	2.5	1.0			
													yellow/pink	silcrete	F	4.0	2.0	0.5			
													yellow/grey	silcrete	F	4.0	6.0	3.0			
													pink speckled	silcrete	F	2.0	2.0	0.2			been used as a core
													pink	silcrete	FP	2.0	1.5	0.5			
													pink	silcrete	FP	4.0	3.0	0.5			
													grey	silcrete	FP	4.0	3.0	1.5			
													grey	silcrete	FP	4.0	4.0	1.5	along one edge		
													grey	silcrete	FP	4.5	4.0	3.0			
													pink/grey	silcrete	FP	3.0	1.5	0.5			
													pink/grey	silcrete	FP	3.5	3.5	0.5			
														silcrete/conglomerate	C (cobble)	4.0	4.0	3.0			with large inclusions up to 8mm x 5mm
													grey	silcrete/conglomerate	F	4.0	3.0	2.5			with inclusions
6	6	291800	6431000	OCS	gully	sheet and gully erosion	100x50	80	80	on exposed surface and amongst grass	eroded	87	grey	chert	F	2.0	2.0	1.0			
					junction of drainage lines/confluence								grey	chert	F	3.0	2.0	0.5			
													pink	chert	F	3.0	3.0	0.5	retouch on one side		
													grey	chert	FP	3.5	2.5	1.5			
													grey	chert	FP	2.0	1.5	1.0			
													black	chert	FP	2.0	1.0	0.5			
													red	FGS	FP	3.0	1.5	0.5			
													grey	FGS	FP	3.0	2.0	1.5			
													grey	FGS	FP	2.0	2.0	0.5			
														FGS	FRP	7.0	7.0	5.0			
													red	ironstone	FRP	7.0	6.0	4.0			
													grey	mudstone	F	2.5	2.5	0.2			
													orange/red	mudstone	FP	1.0	1.0	0.2			
													red	mudstone	FP	2.0	1.5	0.5			
													red	mudstone	FP	2.0	2.5	0.5			
													pink	mudstone	FP	3.0	3.0	0.2	usewear/retouch		
													cream	mudstone core	C	2.5	2.5	2.0			
														petrified wood	piece	3.0	2.0	0.5			
														quartz	FP	1.5	1.0	0.5			
														quartz	FP	2.0	1.5	1.0			
														quartz	FP	2.5	1.5	1.0			
														quartz	FP	1.0	0.5	0.5			
														quartz	FP	2.0	1.5	0.2			
														quartz	FP	2.0	2.0	0.5			
														quartz	FP	2.0	1.5	1.0			
													grey	silcrete	c	3.0	4.0	1.5			
													grey	silcrete	c	4.0	3.0	2.0			
													grey	silcrete	c	2.0	2.0	1.0			
													grey	silcrete	c	3.0	3.0	2.0			
													pink/grey	silcrete	c	6.0	7.0	6.0			
													grey	silcrete	c	5.0	5.0	5.0			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													dark pink/brown	silcrete	F	3.0	1.0	1.5			
													pink	silcrete	F	5.0	3.5	0.5			
													pink	silcrete	F	2.0	0.5	0.2			
													grey	silcrete	F	2.5	2.5	1.0			
													grey	silcrete	F	2.5	2.0	0.5			
													grey	silcrete	F	2.5	3.0	1.0			
													grey	silcrete	F	2.5	2.0	0.5			
													grey	silcrete	F	5.0	4.0	1.0			
													grey	silcrete	F	7.0	7.0	1.0			
													grey	silcrete	F	2.5	2.0	1.0			
													grey/red striated	silcrete	F	3.5	2.0	1.0			
													cream	silcrete	F	2.0	2.0	1.0			
													pink	silcrete	F	4.0	2.5	0.5			
													cream	silcrete	F	2.0	2.5	0.8			
													cream	silcrete	F	2.0	1.5	0.2			
													pink	silcrete	F	2.0	2.0	0.5			large inclusions up to 2mm
													pink	silcrete	F (blade)	4.0	1.5	0.5			
													grey	silcrete	F (blade)	2.5	1.5	0.5			
													grey	silcrete	FP	1.5	1.5	1.0			
													pink	silcrete	FP	3.0	2.0	1.5			
													grey	silcrete	FP	2.5	1.5	0.5			
													grey	silcrete	FP	3.0	2.0	0.5			
													red	silcrete	FP	1.5	1.0	0.5			
													grey	silcrete	FP	2.0	3.0	1.0			
													grey	silcrete	FP	3.0	2.0	2.0			
													pink	silcrete	FP	2.0	2.0	0.5			
													pink	silcrete	FP	4.0	2.0	1.0			
													pink	silcrete	FP	1.0	1.0	1.0			
													grey (red)	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	2.0	1.5	1.0			
													grey (red)	silcrete	FP	2.0	2.0	1.0			
													grey	silcrete	FP	3.0	2.0	0.1			
													pink	silcrete	FP	2.5	2.0	1.0			
													pink	silcrete	FP	1.5	1.0	0.3			
													cream	silcrete	FP	2.0	1.0	0.3			
													cream	silcrete	FP	2.0	2.0	0.5			
													cream	silcrete	FP	2.5	2.0	1.0			
													yellow	silcrete	FP	1.5	1.5	0.3			
													cream/pink	silcrete	FP	1.5	1.0	0.2			
													pink	silcrete	FP	2.5	2.0	0.5			
													pink	silcrete	FP	1.0	0.5	0.3			
													pink	silcrete	FP	2.0	2.0	0.5			
													yellow	silcrete	FP	2.0	1.0	0.2			
													cream/pink	silcrete	FP	2.0	2.0	1.0			
													grey	silcrete	FP	3.5	3.0	1.0			
													yellow	silcrete	FRP	9.0	7.0	4.0			
													red	siliceous conglomerate	FP	4.0	4.0	2.0			
													cream	siliceous conglomerate	FP	4.0	2.5	2.0			
													white	siliceous conglomerate	FP	4.0	3.0	2.0			
													grey	siliceous conglomerate	FP	4.0	4.0	1.5			
													cream/grey	siliceous conglomerate	FP	3.5	2.5	1.5			with large inclusions
													grey	siliceous conglomerate	FP	6.0	4.0	1.5			
													yellow	siliceous conglomerate	FP	2.5	2.0	0.5			large inclusions up to 5mm
													grey	siliceous conglomerate	FP	5.0	4.0	1.0			inclusions up to 10 mm

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
														volcanic	FRP	7.5	5.5	2.5			
														volcanic(basalt)	FRP	9.0	6.5	4.0			
7	7	291750	6430850	OCS	hillslope to gully	surface exposure	50x50	40	90	on exposed surface and around ants nest	eroded	50	dark grey	FGS	F	2.5	2.5	0.8			
					site is above confluence on south side of gully								pink	FGS	FP	2.0	1.5	0.5			
													grey	FGS	FP	3.5	3.5	0.5	retouch		
													grey	FGS	FP	1.5	1.0	0.5			
													black/red	FGS	FP	3.0	1.5	1.5			
													orange	mudstone	F	1.0	1.0	0.2			
													grey	mudstone	F	4.0	4.0	1.5	edgewear/retouch		
													grey	mudstone	FP	1.0	1.0	0.8			
													orange/yellow	mudstone	FP	3.5	2.5	1.0			
													cream	mudstone	FP	2.5	2.0	0.5			
													red	mudstone	FP	3.0	2.5	0.5			potlidded
													cream	mudstone	FP	4.0	1.5	1.5			
													orange	mudstone	FP	1.0	1.0	0.5			
														quartz	FP	4.0	2.0	1.0			
														quartz	FP	1.5	1.0	0.5			
														quartz	FP	1.0	1.0	1.0			
														quartz	FP	1.0	0.8	0.5			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	4.0	2.5	1.0			
														quartz	FP	2.0	1.5	0.5			
														quartz	FP	2.5	2.0	0.8			
														quartz	FP	1.0	1.0	1.0			
														quartzite	C	5.0	5.0	5.0			
													red	silcrete	C	3.5	4.0	3.0			
													grey	silcrete	C	4.0	5.0	4.0			
													grey	silcrete	F	3.0	2.5	0.5	backed		
													pink/red	silcrete	F	0.8	1.5	0.1			
													pink/red	silcrete	F	2.0	1.0	0.3			
													pink	silcrete	F	4.0	3.0	1.0			
													red	silcrete	F	3.0	2.0	2.0			
													orange/red	silcrete	F (blade)	3.5	1.5	0.5			
													grey	silcrete	FP	2.5	2.0	1.5			
													grey	silcrete	FP	3.0	2.0	2.0			
													grey	silcrete	FP	2.5	1.5	0.3			
													pink	silcrete	FP	4.0	3.5	1.5			
													grey	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	2.5	2.5	1.0			
													grey/pink	silcrete	FP	3.5	2.0	1.5			
													pink	silcrete	FP	1.0	1.0	1.0			
													pink/grey	silcrete	FP	2.0	1.5	0.3			
													grey	silcrete	FP	3.0	2.5	2.5			
													grey	silcrete	FP	1.5	1.0	0.2			
													red/orange	silcrete	FP	3.0	1.0	0.8			
													pink	silcrete	FP	3.0	1.0	0.5			
													grey	siliceous conglomerate	FP	3.5	3.0	0.8			
													red	siliceous conglomerate	FP	3.0	3.0	1.0			large inclusions up to 4mm

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
8	8	291900	6431100	OCS	gully	surface/gully erosion	10x5	80	80	on exposed surface	eroded	8	grey	mudstone	FP	4.0	3.0	0.2			
					approx 50m SE of site 6								grey	silcrete	F	3.0	4.0	1.5			
													pink/red	silcrete	FP	1.5	0.5	0.2			
													pink	silcrete	FP	2.0	2.0	0.3			
													grey	silcrete	FP	2.5	2.0	0.5			
													pink	silcrete	FP	3.0	2.0	0.3			
													pink	silcrete	FP	1.5	1.0	0.3			
													pink	silcrete	FP	3.0	1.5	1.0			
9	9	292000	6431050	OCS	gully	surface erosion slopes north to gully	25 x 10	80	50 - 90	on exposed surface	eroded	13	black	FGS	FP	5.0	4.5	2.0			
					exposure extends north down slope to gully								red	mudstone	F	3.5	2.0	1.5			
													yellow	mudstone	F	6.0	3.0	1.0			
													grey	mudstone	F	3.0	3.0	0.5			
													grey	mudstone	FP	2.0	1.0	0.5			
													red	mudstone	FP	4.0	4.0	1.0			
														quartz	FP	2.0	1.5	1.0			
														quartz	FP	3.0	2.0	2.0			
														quartzite	FP	3.0	3.0	2.0			
													grey	silcrete	F	1.0	1.5	0.2			
													pink	silcrete	FP	1.5	1.0	0.2			
													grey	silcrete	FP	6.0	5.0	1.5			
													grey	silcrete	FRP	5.0	4.0	3.0			
10	10	292150	6431050	OCS	gully	sheet erosion, ants nest and stock dam	50x50	90	80	on exposed surface	eroded	106	grey	FGS	FP	6.0	4.0	3.0			
													grey	FGS	FP	5.0	5.0	1.0			
													dark grey	FGS	FP	4.0	3.0	3.0			
													pink	FGS	FP	2.5	2.0	0.5			
													grey	mudstone	F	4.0	3.0	2.0			
													grey	mudstone	F	2.5	3.0	0.5			
													orange	mudstone	F	3.0	3.0	0.5			
													red	mudstone	F	2.5	1.0	0.5			
													red	mudstone	F	4.0	2.0	0.5			
													orange	mudstone	FP	3.0	3.0	0.5			
													grey	mudstone	FP	2.5	1.5	0.5			
													orange	mudstone	FP	1.5	0.5	0.2			
													yellow	mudstone	FP	5.0	4.0	1.5		20	
													grey	mudstone	FP	2.0	2.0	0.3			
													red/cream	mudstone	FP	0.5	0.5	0.2			
													grey	mudstone	FP	2.5	1.5	0.5			
													red	mudstone	FP	2.5	2.0	0.5			
													grey	mudstone	FP	2.0	1.5	0.5			
													red	mudstone	FP	1.5	1.0	0.2			
													grey	mudstone	FP	1.0	0.5	0.2			
													red	mudstone	FP	1.5	0.5	0.2			
													red	mudstone	FP	2.5	1.0	0.5			
													red	mudstone	FP	1.0	1.0	0.5			
													grey	mudstone	FP	2.0	1.5	1.0			
													red	mudstone	FP	1.0	1.5	0.3			
													grey	mudstone	FP	2.0	2.0	0.5			
													red	mudstone	FP	1.0	1.0	0.2			
													grey	mudstone	FP	3.0	1.0	0.5			
													orange	mudstone	FP	3.0	2.5	0.5			
													pink	mudstone	FP	2.0	1.5	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													red	mudstone	FP	1.0	0.5	0.1			
													grey/red	mudstone	FP	1.0	1.0	0.5			
													grey	mudstone	FP	1.5	2.0	1.0			
													grey/red	mudstone	FP	2.5	1.0	0.5			
														quartz	FP	3.0	2.0	1.5			
														quartz	FP	3.0	1.0	0.5			
														quartz	FP	2.0	1.0	1.0			
														quartzite	FP	3.5	3.0	1.5			
													red	silcrete	BB (broken)	3.0	0.5	0.5	retouch		point has broken off
													grey	silcrete	F	4.0	6.0	2.5			large inclusions up to 5mm
													grey	silcrete	F	6.0	4.0	2.0			
													light grey	silcrete	F	3.0	4.0	0.5			
													pink	silcrete	F	1.0	1.0	0.2			
													yellow	silcrete	F	2.5	3.0	1.0			
													grey	silcrete	F	2.0	1.5	0.3			
													pink	silcrete	F	4.5	4.0	1.0			
													cream	silcrete	F	2.0	2.0	0.5			
													cream	silcrete	F	1.5	0.5	0.1			
													pink	silcrete	F	5.0	3.5	1.0			
													grey	silcrete	F	5.0	4.0	3.0			
													grey	silcrete	F	2.0	1.5	0.5			
													grey	silcrete	F	2.0	2.0	0.3			
													grey	silcrete	F	4.0	2.5	1.0			
													grey	silcrete	F	1.5	2.0	0.5			
													grey	silcrete	F	2.5	1.0	0.5			
													red	silcrete	FP	4.0	3.0	1.0			
													grey	silcrete	FP	2.5	2.0	1.0			
													grey	silcrete	FP	2.0	2.0	1.0			
													red	silcrete	FP	3.0	3.0	1.0			
													grey	silcrete	FP	6.0	3.0	2.0			
													red	silcrete	FP	4.0	3.0	2.0			large inclusions
													red	silcrete	FP	4.0	2.0	0.5			
													red/pink	silcrete	FP	3.5	2.0	1.0			
													grey	silcrete	FP	4.5	2.5	2.0			
													grey	silcrete	FP	1.5	1.5	0.5			
													grey	silcrete	FP	3.0	2.0	0.5			
													grey	silcrete	FP	2.0	2.0	0.3			
													grey	silcrete	FP	1.0	0.5	0.3			
													pink	silcrete	FP	1.0	0.5	0.1			
													pink/grey	silcrete	FP	2.5	1.5	0.3			
													grey	silcrete	FP	1.0	0.5	0.2			
													grey	silcrete	FP	2.0	1.5	0.3			
													grey	silcrete	FP	4.0	2.0	3.0			
													grey	silcrete	FP	3.0	3.0	1.0			
													grey	silcrete	FP	3.0	1.5	1.0			
													grey	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	1.0	1.5	0.2			
													grey	silcrete	FP	3.0	1.5	0.5			
													cream	silcrete	FP	1.5	1.0	0.3			
													cream	silcrete	FP	2.0	1.0	1.0			
													grey	silcrete	FP	2.5	1.5	0.5			
													grey	silcrete	FP	2.5	2.0	0.5			
													grey	silcrete	FP	2.0	1.5	1.0			
													grey	silcrete	FP	1.5	1.0	0.5			
													red	silcrete	FP	1.5	1.0	0.5			large inclusions
													red	silcrete	FP	3.0	1.5	1.0			
													grey	silcrete	FP	2.5	2.0	1.0			
													grey	silcrete	FP	2.5	1.0	0.5			
													cream/yellow	silcrete	FP	2.5	2.5	0.5			
													grey	silcrete	FP	1.0	1.5	0.5			
													grey	silcrete	FP	2.0	1.0	0.2			
													grey	silcrete	FP	3.5	2.0	0.5			
													grey	silcrete	FP	1.0	1.0	0.2			
													grey	silcrete	FP	3.0	2.0	1.0			
													grey	silcrete	FP	1.5	1.0	0.5			
													grey	silcrete	FP	3.0	3.0	1.0	retouch/usewear		
													grey	silcrete	FP	1.0	2.0	0.2			
													grey	silcrete	FP	1.0	0.5	0.1			
													grey	silcrete	FP	1.0	1.0	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	1.5	1.0	0.3			
													grey	silcrete	FP	2.5	1.5	1.0			
													grey	silcrete	FP	1.0	1.0	0.2			
													grey	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	1.0	1.0	0.2			
														volcanic	FRP	6.0	4.0	3.0			
													grey	volcanic	hammerstone	6.0	6.0	4.0			
11	11	292200	6431150	OCS	gully		70x15	80	80			79	dark grey	FGS	FP	6.0	4.0	2.0			
													yellow/orange	FGS	FP	2.0	1.0	0.5			
													grey	mudstone	F	1.5	1.5	0.3			
													orange	mudstone	F	2.0	1.0	0.5			
													cream/yellow	mudstone	F	1.5	1.0	0.5			
													red	mudstone	F (blade)	4.0	1.5	0.5			
													grey	mudstone	FP	4.0	3.0	2.0			
													red/grey	mudstone	FP	2.0	1.5	0.5	usewear/retouch		
													red	mudstone	FP	2.5	2.0	1.0			
													red	mudstone	FP	3.5	1.5	0.5		50	
													red	mudstone	FP	3.0	1.0	0.5			
													red	mudstone	FP	4.0	3.0	1.0			
													yellow	mudstone	FP	2.1	5.0	0.5			
													red	mudstone	FP	4.0	4.0	1.5			
													orange	mudstone	FP	2.0	0.5	0.3			
													grey	mudstone	FP	1.0	0.3	0.3			
													red	mudstone	FP	3.0	1.5	0.8			
													orange	mudstone	FP	1.5	0.5	0.2			
													yellow	mudstone	FP	0.3	0.3	0.1			
													grey/red	mudstone	FP	2.5	1.5	1.0			
													grey/red	mudstone	FP	2.0	1.0	0.5			
													yellow/red	mudstone	FP	1.0	1.0	0.5			
													red	mudstone	FP	1.0	0.5	0.2			
													grey	volcanic	FRP	7.5	7.0	4.0			
														volcanic	FRP	5.0	5.0	5.0			
														volcanic	FRP	8.0	4.5	1.0			
														quartz	FP	3.0	2.5	1.0			
														quartz	FP	1.0	0.5	0.2			
														quartzite	FP	2.0	1.0	0.5			
														quartzite	FP	1.5	1.0	1.0			
													grey/yellow	silcrete	F	4.5	4.0	1.0			
													red	silcrete	F	2.5	3.5	1.0			
													grey	silcrete	F	3.0	1.0	0.5			
													pink	silcrete	F	4.5	4.0	1.5			
													grey	silcrete	F	4.0	3.0	1.0			
													cream/yellow	silcrete	F	2.5	2.5	1.0			
													orange/pink	silcrete	F	1.5	1.0	0.5			
													grey/pink	silcrete	F	3.0	3.0	1.0			
													red/pink	silcrete	F	4.0	2.5	1.0			
													yellow/orange	silcrete	F	2.0	2.0	0.3			
													grey	silcrete	FP	4.0	4.0	2.0			
													grey	silcrete	FP	2.0	1.0	0.3			
													grey	silcrete	FP	4.0	4.0	1.0			
													grey	silcrete	FP	4.0	5.0	2.0			
													grey	silcrete	FP	2.0	2.5	0.5			
													red	silcrete	FP	3.5	2.5	1.0			
													grey	silcrete	FP	2.0	2.0	1.5			
													grey	silcrete	FP	6.0	4.0	1.0			
													pink/red	silcrete	FP	4.0	3.0	3.0			
													grey	silcrete	FP	3.5	3.0	0.5			
													grey	silcrete	FP	4.0	4.0	1.0			
													grey	silcrete	FP	1.5	1.5	0.5			
													pink	silcrete	FP	2.0	1.0	0.5			
													yellow	silcrete	FP	5.0	5.0	1.0			
													grey	silcrete	FP	2.0	2.0	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													pink	silcrete	FP	1.5	1.5	0.8			
													pink	silcrete	FP	3.0	4.0	1.5			
													pink	silcrete	FP	3.0	2.0	0.5			
													pink	silcrete	FP	1.0	1.0	0.5			
													pink	silcrete	FP	2.0	2.0	2.0			
													pink	silcrete	FP	2.0	2.0	1.0			
													pink	silcrete	FP	2.0	1.5	1.0			
													grey	silcrete	FP	7.0	4.0	1.0			
													grey	silcrete	FP	2.5	6.0	2.0			
													grey	silcrete	FP	2.0	2.0	1.0			
													grey	silcrete	FP	1.5	1.0	1.0			
													grey	silcrete	FP	3.0	2.5	1.0			
													grey	silcrete	FP	1.0	0.5	0.2			
													grey	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	3.0	3.0	1.0			
													red	silcrete	FP	0.5	0.5	0.2			large inclusions
													red	silcrete	FP	1.0	1.5	0.5			
													red	silcrete	FP	1.5	1.0	0.3			
													grey	silcrete	FP	1.5	2.0	1.0			
													pink	silcrete	FP	1.5	1.5	0.5			
													yellow/crea m	silcrete	FP	2.0	1.0	0.5			
													red	silcrete	FP	0.5	0.5	0.1			
													grey	silcrete	FP	1.0	1.0	0.2			
													grey	silcrete	FP	1.0	1.5	0.3			
12	12	292100	6431150	OCS	gully	amongst grass	5x5	50	50	on surface and amongst low grass cover	fair	8	grey	FGS	FP	5.0	5.0	3.0			
					on main gully and eastern side of minor drainage line								grey	mudstone	FP	2.5	3.0	1.0			
													grey/red	silcrete	F	2.5	2.5	0.5			
													grey	silcrete	F	2.5	1.0	0.5			
													grey	silcrete	F	1.5	1.5	0.9			
													grey	silcrete	FP	2.5	2.5	1.0			
													grey	silcrete	FP	3.0	2.0	1.0			
													grey	silcrete	FP	2.0	1.5	0.3			
13	13	292050	6431150	OCS	gully	track and stock dam erosion	70x20	90	60	on eroded track and around dam bank	disturbed	88	grey	chert	FP	1.0	1.0	0.3			
					60m west of site 12 on north side of gully								grey	chert	FP	1.5	1.0	0.5			
													grey	FGS	FP	2.5	2.0	1.0			
													grey	FGS	FP	3.0	2.5	1.5			
													yellow	mudstone	C	4.0	4.0	3.0			
													yellow	mudstone	F	3.5	4.0	0.8			
													yellow/crea m/red	mudstone	F	2.5	2.0	0.5			
													grey	mudstone	F	2.0	1.0	0.5			
													yellow	mudstone	FP	7.0	6.0	1.5			
													grey	mudstone	FP	3.0	2.0	0.5			
													red	mudstone	FP	1.5	0.8	0.3			
													red	mudstone	FP	2.0	2.0	0.8			
													red	mudstone	FP	2.5	3.0	0.5			
													yellow	mudstone	FP	1.0	2.5	0.3			
													yellow/pink	mudstone	FP	2.0	1.5	0.4			
													grey	mudstone	FP	1.5	1.5	1.0	retouch		
													grey/red	mudstone	FP	1.5	1.5	0.8			
													cream	mudstone	FP	0.8	0.8	0.2			
													red	mudstone	FP	2.0	0.8	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey/red	mudstone	FP	2.0	1.0	0.5			
													grey	mudstone	FP	1.5	0.5	0.3			
														petrified wood	FP	2.0	3.0	1.0			
														petrified wood	FP	1.5	1.5	0.8			
														quartz	FP	1.0	1.0	0.3			
														quartz	FP	2.0	1.0	0.3			
														quartz	FP	0.8	0.8	0.2			
														quartz	FP	1.5	0.5	0.3			
													grey/pink	silcrete	c	6.0	4.0	4.0			
													grey	silcrete	c	5.0	5.0	5.0			
													grey	silcrete	c	5.0	5.0	2.0			
													yellow	silcrete	F	3.0	3.0	0.5			large inclusions up to 10 mm
													red/grey	silcrete	F	8.0	8.0	1.5			
													red	silcrete	F	3.5	3.0	0.5	edgewear/retouch		
													grey/pink	silcrete	F	2.5	1.5	0.5			
													pink/grey	silcrete	F	1.5	1.5	0.5			step fracture
													yellow/grey	silcrete	F	2.5	1.5	0.5			
													grey	silcrete	F	1.0	1.5	0.3			
													grey	silcrete	F	3.0	2.0	0.5			
													grey/pink	silcrete	F	2.5	2.0	0.5			
													pink	silcrete	F	2.5	1.0	0.5			
													pink	silcrete	F	1.5	1.0	0.3			
													orange	silcrete	FP	1.5	1.5	0.3			
													red	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	1.0	1.0	0.3			
													grey/red	silcrete	FP	1.0	2.0	0.5			
													pink	silcrete	FP	6.0	4.0	3.0			
													yellow	silcrete	FP	3.0	3.0	0.5			large inclusions up to 10 mm
													grey	silcrete	FP	5.0	4.0	2.0			large inclusions
													red/grey	silcrete	FP	1.0	2.0	0.8			
													grey	silcrete	FP	4.0	4.0	1.0			
													grey	silcrete	FP	2.0	2.0	0.3			
													red/pink	silcrete	FP	3.0	3.0	0.5			
													grey	silcrete	FP	1.5	1.0	0.3			
													grey	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	3.0	2.0	0.8			
													grey	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	6.0	4.0	3.0			
													grey	silcrete	FP	3.5	3.0	1.0			
													yellow	silcrete	FP	6.0	3.0	1.0			
													pink	silcrete	FP	4.0	3.0	2.0			
													yellow	silcrete	FP	6.0	6.0	3.0			
													grey	silcrete	FP	6.0	4.0	3.0			
													pink	silcrete	FP	5.0	4.0	2.0			
													yellow	silcrete	FP	2.0	2.0	0.5			
													grey	silcrete	FP	3.0	2.0	1.0			
													grey	silcrete	FP	2.0	2.0	2.0			
													grey	silcrete	FP	2.5	1.5	1.0			
													grey	silcrete	FP	4.0	3.0	1.0			
													grey	silcrete	FP	3.0	1.5	0.5			
													grey/pink	silcrete	FP	2.5	2.5	0.5			
													grey	silcrete	FP	2.5	2.0	0.5			
													pink	silcrete	FP	2.5	2.0	0.5			
													pink	silcrete	FP	2.5	2.5	0.5			
													pink	silcrete	FP	3.0	1.5	1.0			
													grey	silcrete	FP	2.0	1.0	0.5			
													grey/yellow	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	1.5	1.0	0.3			
													pink/grey	silcrete	FP	2.0	1.5	0.5			
													pink	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	2.5	1.5	0.5			
													pink	silcrete	FP	1.0	1.5	0.3			
													cream	silcrete	FP	0.8	0.5	0.2			
													pink	silcrete	FP	2.0	2.0	1.0			
													pink	silcrete	FP	1.5	1.5	0.5			
													yellow	silcrete	FP	1.0	0.5	0.3			
													yellow	silcrete	FP	1.0	1.0	0.3			
													yellow	silcrete	FP	1.5	1.0	0.5			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	siliceous conglomerate	FP	3.0	3.0	1.0			
14	14	291950	6431150	OCS	gully approx 100m west of site 13	gully and sheet erosion	25x15	70	70	on eroded surface	disturbed	37	grey	chert - striated	FP	4.0	2.0	0.5			
													pink	FGS	FP	5.0	4.0	1.5			
													pink	FGS	FP	8.0	4.0	2.0			
													grey	FGS	FP	4.0	5.0	0.5			
													grey	FGS	FP	3.0	3.0	1.0			
													red	mudstone	F	2.0	1.0	0.5			
													cream	mudstone	F	3.0	2.0	0.5			
													grey	mudstone	F	3.0	2.0	0.8	retouch		
													red	mudstone	FP	3.0	1.5	0.5	retouch		
														quartz	FP	4.0	1.5	1.0			
														quartz	FP	1.0	1.0	0.3			
														quartz	FP	1.5	1.5	1.0			
														quartz	FP	2.0	2.0	0.5			
														quartz	FP	0.5	0.5	0.2			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	1.5	1.0	0.3			
													grey	silcrete	C	6.0	5.0	5.0			
													pink	silcrete	F	2.0	1.5	0.5			
													grey	silcrete	F	5.0	3.0	1.0			
													pink	silcrete	F	1.5	1.0	0.3			
													pink	silcrete	FP	4.0	2.0	0.8			
													pink	silcrete	FP	4.0	1.5	1.0			
													cream	silcrete	FP	2.5	1.5	1.0			
													pink	silcrete	FP	1.5	1.0	0.2			
													pink	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	3.0	1.5	1.0			
													pink	silcrete	FP	2.0	1.0	0.5			
													grey/pink	silcrete	FP	1.5	1.0	1.0			
													cream	silcrete	FP	1.5	1.5	0.5			
													grey	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	1.5	0.8	0.3			
													pink/grey	silcrete	FP	1.5	2.5	1.0			
													grey	silcrete	FP	1.5	1.0	0.8			
													cream	silcrete	FP	1.0	1.5	0.3			
													grey	silcrete	FP	1.5	1.0	0.5			
													grey	silcrete	FP	1.0	1.0	0.3			potlidded
15	15	291800	6431100	OCS	gully opposite site 6 on north side of gully	gully erosion	10x5	70	70	on eroded surface	disturbed	10	grey	FGS	FP	5.0	2.5	0.5			
													grey	FGS	FP	3.0	3.0	0.5			
													cream	mudstone	FP	1.5	0.5	0.2			
													grey	silcrete	C	2.0	2.0	1.5			
													grey	silcrete	F	4.0	4.0	2.0			
													grey	silcrete	FP	2.5	1.0	1.0			
													grey	silcrete	FP	1.5	1.0	0.2			
													grey	silcrete	FP	1.0	1.0	0.5			
													pink	silcrete	FP	1.5	1.0	0.5			
													grey	silcrete	FP	1.5	1.0	0.3			
16	16	291400	6431300	OCS	hillslope (upper)	sheet erosion	50x15m	50	50	on surface and amongst low grass	fair on surface	9	yellow/red	mudstone	FP	15.0	9.0	7.0			hard to tell if core or not as moss/lichen over 50% of one side; large enough for a hammerstone
														volcanic	FRP	5.0	4.0	1.5			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	volcanic		6.0	5.0	2.5			
														petrified wood	FP	5.0	4.0	1.0			
														petrified wood (silicified)	FP	3.0	2.5	1.0			
														petrified wood (silicified)	FP	3.5	3.0	1.0			
													pink	silcrete	F	8.0	8.0	2.0		50	
													red	silcrete	FP	1.5	1.5	0.5			
													pink	silcrete	FP	5.0	2.0	1.5			
17	17	292050	6431250	ST	hillslope																
18	18	292200	6431350	OCS	hillslope	cattle track	30x2	50	50	on exposed track and amongst grass	eroded and stable	19	dark grey	FGS	FP	4.0	3.0	2.0			
													grey	mudstone	FP	1.0	1.0	0.3			
													grey	mudstone	FP	2.0	1.0	0.5			
														quartz	FP	3.0	2.0	0.5			
														quartz	FP	1.0	1.0	0.8			
													grey	silcrete	F	1.5	1.5	0.5			
													grey	silcrete	F	2.5	1.0	0.3			
													red	silcrete	F	2.0	1.0	0.5			
													grey	silcrete	F	2.0	1.5	0.8			
													red	silcrete	F	1.5	1.5	0.3			
													grey	silcrete	FP	1.0	1.0	0.5			
													grey	silcrete	FP	1.0	1.5	0.8			
													grey	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	1.0	1.5	0.5			
													grey	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	3.0	4.0	2.0			
													grey	silcrete	FP	1.5	1.0	0.5			
													grey	silcrete	FP	1.0	1.0	0.2			
													grey	silcrete	FP	1.0	1.0	0.3			
19	19	292500	6431750	OCS	ridge	surface erosion and amongst grass cover	60x10	10	10	on stable ground surface generally	fair	10		quartz	FP	1.0	1.0	1.0			weathered
														quartz	FP	0.5	0.5	0.3			weathered
														quartz	FP	1.0	1.5	1.0			weathered
														quartz	FP	1.0	0.5	0.3			weathered
														quartz	FP	1.0	1.0	0.3			weathered
													grey	silcrete	C	4.0	3.0	2.0			weathered
													grey	silcrete	F	2.0	2.0	0.5			weathered
													grey	silcrete	FP	1.0	1.0	0.2			weathered
													pink/orange	silcrete	FP	2.5	1.5	0.5			weathered
														volcanic (basalt)	FP	6.0	4.0	0.3	retouch		fractured; weathered
20	20	292850	6431800	OCS	hillslope although on minor drainage line	sheet erosion along drainage line	10x10	50	70	around ants nest	disturbed	5		quartzite	FP	4.0	3.0	1.0			
														quartzite	FP	1.5	1.0	0.5			
													grey/pink	silcrete	F	10.0	6.0	2.5	retouch		
													cream	silcrete	F	2.0	2.0	0.5			
													pink	silcrete	F	3.0	3.0	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
21	21	292900	6431700	ISF	gully	exposed cattle track		90	90	on track	eroded and disturbed	1	grey	silcrete	F	1.0	1.5	0.4			
22	22	293100	6431750	OCS	hillslope - on minor drainage line and above dam	in drainage channel that has been dug out to let water flow down gully into stock		90	90	in channel	disturbed	2	grey/pink	silcrete	F	7.0	5.0	2.0			
													grey	silcrete	FP	3.0	3.0	1.0			
23	23	293150	6431850	ISF	hillslope (upper)	erosion at top of drainage line (eastern side)	20x25	90	80	on surface	eroded	1	grey	silcrete	FP						
24	24	293100	6431950	ISF	hillslope (upper)	exposure along drainage channel	15x15	90	80	on surface	eroded	1	grey	mudstone	F	5.0	4.0	2.0			
25	25	293450	6431800	ISF	hillslope - on minor drainage line	surface		40	50	on exposed surface amongst trees and leaf litter	disturbed by roos and cattle	1		quartz	FP	2.0	1.5	1.0			
26	26	293450	6431950	OCS	hillslope - on minor drainage line	surface		40 - 50	40 - 50	in western arm of gully	disturbed	11		quartz	FP	3.0	1.5	1.0			
														quartz	FP	1.5	1.0	0.5			
														quartz	FP	2.0	1.0	0.5			
														quartz	FP	1.5	1.5	1.0			
														quartz	FP	1.0	1.0	1.0			
														quartz	FP	2.0	1.5	1.0			
														quartz	FP	1.5	1.5	1.0			
														quartz	FP	2.0	1.0	1.0			
														quartzite	FP	2.5	2.0	1.0			
													grey	silcrete	FP	1.5	1.0	1.0			
													grey	silcrete	FP	2.0	1.0	1.0			weathered
																					weathered
27	27	293500	6431800	OCS	hillslope - on minor drainage line	surface		40 - 50	40 - 50	on western side of arm of gully	disturbed	5		quartz	FP	2.0	1.0	1.0			
														quartz	FP	1.5	1.5	1.0			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	1.0	1.0	0.5			
													pink/grey	silcrete	FP	2.0	1.5	0.3			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
28	28	293400	6431700	OCS	gully	surface	40x5	50	60	on gully bank	disturbed	4	cream	mudstone	FP	2.5	2.0	1.0			
													orange	mudstone	FP	3.0	2.0	0.8			
													pink/red	silcrete	F	3.0	2.0	0.5			
													grey	silcrete	FP	6.0	5.0	2.5			
29	29	293550	6431600	OCS	gully	surface	30x5	70	70	on gully bank	disturbed	4	grey	FGS	FP	2.0	1.0	0.3			
														quartz	FP	4.0	2.0	1.0			
													red	silcrete	FP	4.0	4.0	1.0			
													grey/pink	silcrete	FP	1.5	1.5	1.0			
30	30	293300	6431650	OCS	gully	erosion on southern bank of main gully	40x5	80	70	on track and around ants nest	disturbed	5		quartz	FP	4.0	3.0	1.0			
													grey	silcrete	F	1.0	1.5	0.3			
													grey	silcrete	F	1.0	1.0	0.3			
													grey	silcrete	FP	5.0	2.5	2.0			
													red	silcrete	FP	1.5	1.5	1.0			
31	31	293200	6431700	OCS	gully	erosion along northern bank of main gully	10x5	80	70	on eroded bank	disturbed	3	pink	silcrete	FP	4.0	2.0	0.5			
													pink/red	silcrete	FP	3.0	1.5	0.5	edgewear		
													grey	silcrete	FP	3.0	1.0	0.5			
32	32	293150	6431650	OCS	gully	erosion	5x5	80	70	on eroded southern bank	disturbed	2	orange	silcrete	FP	3.0	1.5	1.0			
													red	silcrete	FP	4.0	1.5	1.0			
33	33	293050	6431650	OCS	gully	erosion	30x5	80	80	in exposure along gully and ants nest	disturbed	3	grey	mudstone	F (blade)	2.5	1.0	0.2			
													grey	silcrete	FP	1.5	1.0	1.0			
													cream	silcrete	FP	1.0	1.0	0.2			
34	34	292900	6431650	ISF	gully	in creek bed		80	80	in creek bed	disturbed	1	grey/red	silcrete	FP	5.0	4.0	1.0			
35	35	292550	6431200	ISF	gully (confluence)	gully erosion		90	90	on eroded surface	disturbed	1		quartz	FP	1.0	1.0	0.5			
36	-	291900	6430550	ST (possible)	hillslope	scar is low to the ground															

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
						scar dimensions 60cm high, 40cm wide and 6cm thick															
37	36	291950	6430900	ISF and ST	hillslope then 20 metres north and upslope was ST	surface erosion and ants nest scar dimensions 95cm high, 40cm wide and 4cm thick	8x5	10 - 100	10 - 100	around ants nest	disturbed	1	cream/grey	silcrete	C (blade)	6.5	6.5	8.5			flake scars all in one direction
38	37	292250	6430950	OCS	hillslope although on minor drainage line	sheet erosion at top of minor gully	30x20m	50	50	eroded surface	disturbed	2		quartz	FP	2.5	1.5	0.5			In small patch of erosion 1x1m
													grey	silcrete	FP	3.0	3.0	0.5			
39	38	292500	6430900	OCS	hillslope although on minor drainage line	water induced erosion	50x75	50	50	eroded surface	disturbed	5	red/yellow	mudstone	F	5.0	2.5	0.5	retouch		broken blade
													grey	mudstone	FP	2.5	2.0	1.0			
														quartz	FP	1.5	1.0	0.5			
													grey	silcrete	FP	1.5	1.0	0.3			
													grey	silcrete	FP	4.5	4.5	1.5			
40	39	292850	6430850	ISF	hillslope although on minor drainage line	surface erosion	30x10	50	10 to 20	on surface	disturbed	1	cream	silcrete	F	1.0	0.8	0.3			
41	40	292850	6431050	OCS	hillslope although in dug-out channel down to dam and on track	dug-out channel and eroded track above dam	60x40	50	50	on eroded surfaces	disturbed	17	red/yellow	mudstone	piece	4.5	2.0	0.8	retouch/edge wear		broken
													grey/red	mudstone	F(blade)	3.0	1.5	0.5			
													red/cream	mudstone	FP	2.5	2.0	1.0			
														volcanic	FRP	8.0	4.0	2.0			
														quartz	FP	1.5	1.5	0.3			
														quartz	FP	2.5	2.5	1.0	retouch		
														quartz	FP	1.5	1.0	0.3			
													grey	silcrete	F	1.5	2.0	0.3			
													pink/grey	silcrete	FP	3.0	2.5	1.0			
													cream	silcrete	FP	2.5	2.0	1.5			
													grey	silcrete	FP	4.0	3.0	1.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	3.5	3.5	1.0			
													grey	silcrete	FP	7.0	5.0	3.0			weathered
													cream	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	4.0	2.0	1.0			
													grey/red	silcrete	FP	3.0	2.0	1.0			
													grey	silcrete	FP	4.0	2.0	1.0			
42	41	293200	6431100	OCS	hillslope	sheet erosion	50x10	80	80	on eroded surface	disturbed	6	cream	mudstone	BB	1.5	0.8	0.3	retouch		
													yellow/red	mudstone	C	2.0	2.0	2.0			prepared platform
													orange/grey	mudstone	FP	2.5	1.5	1.0			
													red	mudstone	FP	1.5	1.0	0.3			
													grey	silcrete	F	1.5	3.0	0.5			
													grey	silcrete	F	2.5	1.0	0.3			
43	42	293100	6431150	OCS	gully	sheet erosion adjacent to dam	10x5	80	80	on eroded surface	disturbed	2	grey	silcrete	C	3.0	3.0	3.0			
													grey	silcrete	FP	1.5	1.0	0.2			
44	43	291450	6430850	OCS	hillslope (upper) although on minor drainage line	10x10 on east side of minor gully		80	80			31	black/dark grey	chert	FP	2.5	2.0	1.0			
						15x10 on west side of minor gully mainly around ants nest							grey	FGS	FP	2.5	1.5	0.3			
						also 15x15m around stock dam							red	mudstone	FP	1.0	1.0	1.0			
													grey/yellow	mudstone	FP	2.5	2.0	0.8			
													grey	mudstone	FP	2.0	2.0	1.0			
													grey	mudstone	FP	2.5	2.0	0.8			
													cream/grey	silcrete	C	2.0	1.5	1.5			
													grey/pink/red	silcrete	C	6.0	6.0	5.0			
													pink	silcrete	F	5.0	4.0	1.0			large inclusions up to 10mm
													grey	silcrete	F	1.0	1.0	1.0			
													grey	silcrete	F	3.0	2.5	1.0			
													grey	silcrete	FP	4.0	2.0	1.0			
													cream	silcrete	FP	1.5	1.5	1.0			
													grey	silcrete	FP	4.0	2.0	1.0			
													grey	silcrete	FP	3.0	2.0	1.0			
													grey	silcrete	FP	4.0	3.0	1.5			large inclusions up to 5mm
													grey	silcrete	FP	2.0	1.0	1.0			
													cream/grey	silcrete	FP	2.5	2.5	2.0			
													grey	silcrete	FP	1.5	1.5	0.5			
													grey	silcrete	FP	0.5	0.5	0.2			
													cream	silcrete	FP	2.0	2.0	0.5			
													cream/grey	silcrete	FP	2.5	2.5	0.5			
													grey	silcrete	FP	1.5	1.0	0.3			
													cream/grey	silcrete	FP	1.0	1.0	0.5			
													grey/red	silcrete	FP	4.0	4.0	3.0			
													grey/red	silcrete	FP	3.0	2.0	1.0			
													grey/red	silcrete	FP	3.0	3.0	1.0			
													grey/red	silcrete	FP	2.5	2.0	0.5			
													cream/grey	silcrete	FP	1.5	1.5	0.5			
													grey	silcrete	FP	1.5	1.0	0.3			
													yellow	silcrete	FP	1.5	1.0	0.3			

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
44	44			OCS	hillslope although on minor drainage line	approx 55m N of 43 on western side of minor gully		95	90			11	grey/yellow	FGS	FP	4.0	4.0	1.5			
						in exposure on path along gully							grey/pink	FGS	FP	3.0	2.0	1.5			
													grey	FGS	FP	6.5	4.5	3.0			
														petrified wood	FP	3.0	1.5	0.5	edgewear		
														petrified wood	FP	2.0	1.5	0.5			
														quartz	FP	4.0	2.5	2.0			
													grey	silcrete	F	4.0	4.0	1.5		20	Flaked around side of flake/ used as core
													grey/red	silcrete	FP	4.0	3.0	1.0			
													grey/red	silcrete	FP	1.5	1.5	0.5			
													grey/red	silcrete	FP	2.0	1.0	0.5			
													cream/red	silcrete	FP	2.0	1.5	0.5			large inclusions up to 5mm
44	45			gully		approx 100m N of 44	20x30	90-100	80-90	exposure around ants nest		34	black/dark grey	chert	FP	2.0	1.5	0.5			
													grey	FGS	FP	7.0	6.0	1.0			
													grey	FGS	FP	2.5	2.0	1.0			
													grey	FGS	FP	1.5	1.0	1.0			
													grey	FGS	FP	3.0	2.0	1.5			
													grey	FGS	FP	7.0	4.0	1.5			
													grey/red	mudstone	FP	3.0	2.0	1.0			
													grey/yellow	mudstone	FP	4.0	4.0	1.0			
													grey/red	mudstone	FP	2.5	2.5	0.5			
													cream/orange	mudstone	FP	2.0	1.5	0.5			
													grey	mudstone	FP	1.5	0.5	0.3			
													grey	mudstone	FP	1.0	0.5	0.3			
													cream	mudstone	FP	1.5	1.0	0.5			
													grey	mudstone	FP	2.0	1.0	0.5			
													grey/cream	mudstone	FP	2.0	2.0	0.8			
													grey	mudstone	FP	2.0	0.5	0.5			
														quartz	FP	2.5	2.0	1.0			
														quartz	FP	2.0	1.5	1.0			
													grey/red	silcrete	C	6.0	4.0	1.5			blade core, but step fractures each time
													grey	silcrete	FP	3.0	2.0	0.5			large inclusions up to 5mm
													grey	silcrete	FP	4.0	1.5	0.5			
													grey/red	silcrete	FP	4.0	2.0	0.8			
													grey	silcrete	FP	2.0	2.0	0.5			
													grey	silcrete	FP	2.5	2.5	1.0			
													grey	silcrete	FP	6.0	3.0	2.0			
													grey	silcrete	FP	5.0	2.0	2.0			
													grey/pink/cream	silcrete	FP	5.0	4.0	2.0			
													grey	silcrete	FP	4.5	3.0	2.0			
													grey/red	silcrete	FP	2.0	1.5	0.5			
													red/yellow	silcrete	FP	2.0	1.0	0.3			
													grey	silcrete	FP	2.5	2.0	0.8			
													grey	silcrete	FP	3.0	2.0	0.8			
													grey	silcrete	FP	2.0	1.5	1.0			
													grey/red	silcrete	FP	1.0	1.0	1.0			
44	46			OCS	gully	surface erosion and around ants nests	30x15	40	30-40			1491	cream banded	chert	F	1.1	1.4	0.2			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
						artefacts also in dug-out drainage channel							translucent	chert	F	0.7	1.0	0.2			
													grey/orange banded	chert	FP	4.9	3.6	2.5			
													grey	chert	FP	5.2	3.3	1.8			
													white/grey	chert	FP	1.4	1.3	0.7			
													dark grey	chert	FP	2.7	2.0	1.2			
													pink/cream	chert	FP	1.7	1.1	0.3			
													white/grey	chert	FP	1.3	0.6	0.4			
													translucent	chert	FP	2.2	1.1	1.0			
													translucent	chert	FP	1.8	1.8	1.5			
													orange	chert	FP	3.5	3.2	1.3			
													translucent	chert	FP	1.3	1.0	0.4			
													red	chert	FP	1.0	0.6	0.2			
													grey	chert	FP	1.6	1.0	0.5			
													pink	chert	FP	1.0	0.8	0.3			
													grey	chert	FP	1.0	0.6	0.2			
													grey	chert	FP	1.3	0.9	0.4			weathered
													pink	chert	FP	1.7	1.7	0.9		10	
													pink	chert	FP	0.9	0.7	0.1			
													grey	chert	FP	3.0	2.8	1.5		40	
													pink	chert	FP	2.0	1.2	0.5			
													pink	chert	FP	1.8	1.6	0.3		10	
													yellow/red	chert	FP	2.2	1.5	0.7			
													cream/pink	chert	FP	1.8	1.1	0.5			
													grey	chert	FP	1.3	0.8	0.5			
													grey	chert	FP	2.2	1.6	0.5			
													grey	FGS	FP	4.1	2.3	1.6			weathered
													red/grey	FGS	C	7.0	6.5	6.3		30	
													grey	FGS	F	3.1	1.7	0.9			weathered
													pink/red	FGS	FP	0.5	0.5	0.5			
													grey	FGS	FP	1.5	1.5	1.5			
													grey	FGS	FP	6.0	4.0	3.0			
													red	FGS	FP	3.6	2.6	0.9			weathered
													red	FGS	FP	3.2	2.6	1.0		50	weathered
													red	FGS	FP	6.8	5.5	3.2			weathered
													red	FGS	FP	2.7	1.9	0.5		10	weathered
													red	FGS	FP	5.3	2.9	1.4			weathered
													grey	FGS	FP	5.2	3.6	1.9		50	
													yellow	FGS	FP	8.2	5.8	2.3		5	
													red	FGS	FP	2.1	1.4	0.5			weathered
													grey	FGS	FP	4.3	3.0	1.0			weathered
													red	FGS	FP	3.3	2.2	2.4			weathered
													grey	FGS	FP	3.3	1.5	1.5			
													yellow	FGS	FP	4.5	3.3	1.4			
													red	FGS	FP	3.4	3.0	2.2			weathered
													grey	FGS	FP	2.3	1.2	1.0			
													grey	FGS	FP	1.7	1.5	0.8			
													red	FGS	FP	2.4	1.2	0.5			
													red	FGS	FP	3.4	1.4	1.0			weathered
													grey	FGS	FP	4.3	3.3	1.0			weathered
													grey	FGS	FP	2.1	1.8	0.8			
													yellow	FGS	FP	3.4	2.6	0.4			weathered
													grey	FGS	FP	1.8	0.8	0.4			
													grey	mudstone	F	2.0	2.0	0.5			broken flake, would have been blade flake
													red	mudstone	F	1.0	0.5	0.2			
													grey	mudstone	F	2.0	1.7	0.8		on platform	
													yellow/orange	mudstone	F	1.6	2.7	0.6	edgewear		
													orange	mudstone	F	2.3	2.2	1.0			
													grey	mudstone	F	2.5	1.5	1.7			
													pink	mudstone	F	2.1	1.4	0.5			
													red	mudstone	F	1.1	1.1	0.4			
													yellow	mudstone	F	1.5	1.6	0.3			
													orange	mudstone	F	2.0	1.6	0.7			
													yellow	mudstone	F	1.5	1.0	0.5			
													cream	mudstone	F	2.3	2.5	0.4			
													cream	mudstone	F	1.8	2.1	0.4			
													pink/red	mudstone	F	3.1	3.2	1.0		10	weathered

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													pink	mudstone	F	1.2	3.8	2.0			
													yellow	mudstone	F	1.5	1.5	0.4			
													cream	mudstone	F	2.3	1.8	0.5	retouch		
													orange	mudstone	F	2.8	3.6	1.1			weathered
													cream	mudstone	F	2.5	1.3	0.5			weathered
													orange	mudstone	F	3.3	3.4	1.0			weathered
													yellow	mudstone	F	2.5	2.0	1.0			
													orange	mudstone	F	1.0	0.4	0.5			weathered
													orange	mudstone	F	0.8	0.8	0.3			
													yellow	mudstone	F	1.2	1.0	0.3			
													red	mudstone	F	1.2	2.0	0.4			
													yellow	mudstone	F	4.0	3.0	1.8			
													grey	mudstone	F	1.3	1.0	0.2		5	
													orange	mudstone	F	0.8	0.7	0.2			
													orange	mudstone	F	1.3	0.6	0.3			
													orange	mudstone	F	0.9	1.4	0.8			
													cream	mudstone	F	1.1	1.8	0.5			
													orange	mudstone	F	2.2	1.2	0.4			
													yellow	mudstone	F	2.9	2.8	1.0			weathered
													grey	mudstone	F	1.8	2.5	0.6	edgewear		
													red	mudstone	F	2.3	2.5	0.8			weathered
													yellow	mudstone	F	2.6	2.5	0.9		5	
													orange	mudstone	F	1.8	1.4	0.5			
													orange	mudstone	F	2.0	1.5	0.5			weathered
													yellow	mudstone	F	2.3	2.0	0.8			
													yellow	mudstone	F	2.7	1.9	0.6			
													red	mudstone	F	2.5	1.5	1.5			
													orange	mudstone	F	1.4	1.4	0.3			
													grey	mudstone	F	2.2	2.2	0.4			
													red	mudstone	F	1.5	0.8	0.2			
													cream	mudstone	F	2.4	2.5	1.2			
													yellow	mudstone	F	1.4	2.7	0.4			
													grey	mudstone	F	2.4	1.3	0.7			
													orange	mudstone	F	2.0	2.5	0.5			
													yellow	mudstone	F	1.8	1.7	0.7			
													orange	mudstone	F	2.5	1.5	0.5			
													red	mudstone	F	2.4	2.6	0.7		5	
													grey	mudstone	F	1.2	1.1	0.3			weathered
													yellow	mudstone	F	0.8	0.8	0.2			
													yellow	mudstone	F	1.3	2.0	0.3			
													cream	mudstone	F	1.1	1.0	0.2			
													orange/red	mudstone	F	1.9	0.8	0.2			
													cream	mudstone	F	1.6	1.6	0.4			
													orange	mudstone	F	0.8	0.9	0.2			
													orange	mudstone	F	2.8	3.0	0.9			
													pink	mudstone	F	1.8	2.0	0.6			weathered
													cream	mudstone	F (broken)	3.0	1.5	0.8			
													grey	mudstone	FP	2.0	2.0	0.5			
													cream/yellow	mudstone	FP	2.0	1.0	0.3			
													cream/orange	mudstone	FP	2.0	2.0	0.5			
													yellow/orange	mudstone	FP	2.5	1.0	0.5			
													orange	mudstone	FP	4.0	3.0	1.0			
													orange/red	mudstone	FP	2.0	1.0	0.5			
													orange	mudstone	FP	4.5	4.5	2.0			
													orange	mudstone	FP	6.0	5.0	4.0			weathered
													orange	mudstone	FP	6.0	4.0	3.0			
													cream/pale orange	mudstone	FP	1.5	1.0	0.5		30	
													orange	mudstone	FP	1.0	1.0	0.3			weathered
													grey	mudstone	FP	2.5	1.7	1.0			
													red	mudstone	FP	3.1	2.5	1.0		45 (one side)	
													yellow	mudstone	FP	1.6	1.1	0.4		50	
													red	mudstone	FP	4.3	2.4	1.1		30	
													yellow	mudstone	FP	5.0	5.0	3.3			
													orange	mudstone	FP	1.2	0.5	0.3			
													cream	mudstone	FP	1.7	1.6	0.8		2	
													orange	mudstone	FP	2.3	1.6	0.6			weathered
													orange	mudstone	FP	2.3	1.4	1.1			
													orange	mudstone	FP	1.2	0.9	0.4			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													cream	mudstone	FP	2.7	1.3	0.6			
													cream/red	mudstone	FP	3.3	1.8	0.7			
													orange	mudstone	FP	1.2	0.9	0.1			
													orange	mudstone	FP	2.1	1.7	0.5		5	
													cream	mudstone	FP	1.4	1.0	0.5			
													red	mudstone	FP	2.5	1.4	0.2			weathered
													red	mudstone	FP	1.5	1.5	0.4			weathered
													orange	mudstone	FP	4.3	2.9	1.5			
													cream/pink	mudstone	FP	2.3	1.1	1.2		5	
													orange	mudstone	FP	1.7	1.2	0.3			
													orange	mudstone	FP	2.1	1.7	0.8		10	
													yellow	mudstone	FP	3.9	3.8	0.8			
													pink	mudstone	FP	1.5	1.0	0.2			
													orange	mudstone	FP	2.6	2.0	0.8			
													yellow	mudstone	FP	2.6	1.4	1.0			
													orange	mudstone	FP	2.3	1.5	0.3			
													orange	mudstone	FP	1.9	1.6	0.4			
													grey	mudstone	FP	1.7	1.2	0.5			
													red	mudstone	FP	2.8	2.3	1.5			
													yellow/orange	mudstone	FP	2.8	1.5	1.0			
													orange	mudstone	FP	1.5	1.2	0.4			
													red	mudstone	FP	1.5	1.4	0.4			
													red	mudstone	FP	3.5	3.1	0.9			
													orange/red	mudstone	FP	4.3	2.7	0.7			weathered
													yellow	mudstone	FP	4.2	3.3	1.4			
													cream/pink	mudstone	FP	2.1	1.6	0.7		20(red)	
													orange	mudstone	FP	1.6	1.2	0.3			
													yellow	mudstone	FP	1.7	1.3	0.3			
													orange	mudstone	FP	3.9	2.8	1.2			weathered
													grey/red	mudstone	FP	3.7	2.3	1.5			weathered
													cream	mudstone	FP	6.2	2.7	3.0			
													cream	mudstone	FP	3.5	2.3	2.3			
													cream/red	mudstone	FP	3.1	2.4	1.0			
													orange	mudstone	FP	3.7	2.6	1.2		10	
													grey/pink	mudstone	FP	3.1	2.5	1.0			
													orange	mudstone	FP	1.9	1.5	0.9			
													yellow	mudstone	FP	2.8	2.4	0.7			weathered
													orange	mudstone	FP	4.4	3.2	1.1			weathered
													red	mudstone	FP	4.0	2.8	1.0			
													red	mudstone	FP	3.0	1.5	0.9			
													orange	mudstone	FP	3.5	1.7	1.0			
													orange	mudstone	FP	2.8	1.9	0.9			
													orange	mudstone	FP	4.7	3.1	1.9			
													yellow	mudstone	FP	1.8	1.6	0.8			
													cream	mudstone	FP	1.5	1.4	0.5			
													orange	mudstone	FP	1.0	1.0	0.2			weathered
													grey	mudstone	FP	3.5	2.0	0.7			
													orange	mudstone	FP	3.4	1.9	1.1			weathered
													orange	mudstone	FP	2.6	1.4	0.6			
													orange	mudstone	FP	2.4	1.9	0.7			weathered
													yellow	mudstone	FP	2.6	2.4	1.1		30(red)	
													yellow	mudstone	FP	1.0	0.5	0.2			
													orange	mudstone	FP	1.5	1.5	0.3			
													grey	mudstone	FP	2.0	1.5	0.3			
													yellow	mudstone	FP	3.1	2.2	0.6			weathered
													orange	mudstone	FP	1.5	1.4	0.3			
													grey	mudstone	FP	3.8	2.1	1.1			weathered
													yellow	mudstone	FP	1.9	0.8	0.2			
													red	mudstone	FP	2.2	1.4	0.5			
													orange	mudstone	FP	1.0	0.5	0.1			
													orange	mudstone	FP	2.4	2.3	0.7			
													cream	mudstone	FP	1.1	1.0	0.1	edgewear		
													yellow	mudstone	FP	2.2	1.7	0.7			
													red	mudstone	FP	2.9	1.8	0.5			weathered
													orange	mudstone	FP	2.0	1.5	0.6			
													yellow	mudstone	FP	1.2	1.0	0.3			
													orange	mudstone	FP	2.0	2.0	0.5		10(red)	
													yellow/red	mudstone	FP	2.1	1.4	0.5			
													yellow	mudstone	FP	1.9	1.0	0.3			
													yellow	mudstone	FP	1.7	1.0	0.5			
													red	mudstone	FP	1.3	1.1	0.2			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													orange	mudstone	FP	1.3	1.3	0.2			
													red	mudstone	FP	1.5	0.8	0.3		20	
													cream	mudstone	FP	2.2	1.5	1.0		30	
													orange	mudstone	FP	0.8	0.8	0.2			
													orange	mudstone	FP	1.5	1.0	0.3			
													yellow	mudstone	FP	2.5	1.6	0.6			
													cream	mudstone	FP	1.8	1.4	0.4			weathered
													orange	mudstone	FP	2.3	2.1	0.8			
													pink	mudstone	FP	1.6	1.2	0.8		40	
													grey	mudstone	FP	1.4	1.1	0.5			
													yellow	mudstone	FP	4.0	2.2	1.5			
													red	mudstone	FP	1.9	1.6	0.7			
													yellow	mudstone	FP	1.7	1.5	0.4			
													cream	mudstone	FP	1.4	1.4	0.4			
													cream	mudstone	FP	1.9	1.9	0.8			weathered
													yellow	mudstone	FP	1.3	0.7	0.2			
													red	mudstone	FP	1.3	1.1	0.4			
													red	mudstone	FP	2.0	1.7	0.8			
													yellow	mudstone	FP	3.0	2.3	0.8			
													cream/red	mudstone	FP	2.0	1.6	0.5			
													orange/red	mudstone	FP	1.7	1.4	0.8		40(red)	
													yellow	mudstone	FP	1.8	1.5	0.5			
													yellow	mudstone	FP	2.7	1.9	0.9			weathered
													grey	mudstone	FP	2.1	1.7	0.6			
													red	mudstone	FP	1.7	1.1	0.4			
													pink	mudstone	FP	2.0	1.5	0.4			
													orange	mudstone	FP	1.0	0.8	0.2			
													orange	mudstone	FP	0.9	0.9	0.2			
													orange	mudstone	FP	1.0	0.3	0.3			
													red	mudstone	FP	1.4	1.3	0.4			
													red	mudstone	FP	1.4	0.7	0.2			
													grey	mudstone	FP	0.7	0.5	0.1			
													grey	mudstone	FP	1.4	0.5	0.4			
													red	mudstone	FP	1.4	0.9	0.2			weathered
													red	mudstone	FP	0.8	0.7	0.2			
													orange	mudstone	FP	1.1	1.0	0.2			
													yellow	mudstone	FP	1.8	1.4	0.3			
													red	mudstone	FP	2.9	2.1	1.1	edgewear		weathered
													cream	mudstone	FP	1.9	1.8	0.8			
													cream	volcanic	FRP	2.6	2.4	1.2			
														petrified wood	BB	2.0	0.8	0.6	retouch		
														petrified wood	F	1.5	0.4	1.0			
														petrified wood	FP	1.5	1.5	0.3			
														petrified wood	FP	2.0	1.5	0.5			
														petrified wood	FP	3.0	2.0	1.0			
													grey	petrified wood	FP	4.0	2.4	1.2			
													grey	petrified wood	FP	2.9	1.7	1.5			
														petrified wood	FP	2.4	2.0	0.9			
														petrified wood	FP	1.2	1.0	0.9			
														petrified wood	FP	2.5	1.6	0.8			
													grey	petrified wood	FP	1.1	0.9	0.3			
														petrified wood	FP	1.4	1.0	0.5			
														petrified wood	FP	1.5	1.2	0.7			
														petrified wood	FP	1.9	1.3	0.3			weathered
														petrified wood	FP	2.4	2.1	0.8			
														petrified wood	FP	4.0	2.0	1.9			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
														petrified wood	FP	3.0	2.0	1.3			
														petrified wood	FP	2.1	2.1	1.8			weathered
														petrified wood	FP	3.0	3.0	1.2			
														petrified wood	FP	2.4	2.3	1.4			
														petrified wood	FP	3.0	2.0	0.7			
														petrified wood	FP	2.5	1.0	0.4			
														petrified wood	FP	1.3	1.3	0.7			
														petrified wood	FP	2.1	1.6	0.7			
														petrified wood	FP	1.5	1.2	0.3			
														petrified wood	FP	1.5	0.7	0.4			
														quartz	F	1.5	0.6	0.7			
														quartz	F	1.3	0.8	0.5			
														quartz	FP	1.5	1.0	1.0			
														quartz	FP	2.0	2.0	2.0			
														quartz	FP	1.0	1.0	0.5			
														quartz	FP	2.0	2.0	1.0			
														quartz	FP	0.5	0.5	0.3			
														quartz	FP	1.2	1.1	1.0			
														quartz	FP	1.5	0.6	0.3			
														quartz	FP	1.9	1.5	0.9			
														quartz	FP	1.6	1.2	0.5			
														quartz	FP	1.6	1.0	0.7			
														quartz	FP	1.0	0.6	0.5			
														quartz	FP	1.8	0.9	0.9			
														quartz	FP	2.0	1.2	0.4			
														quartz	FP	2.0	1.5	0.7			
														quartz	FP	3.1	2.8	1.9			
														quartz	FP	2.3	1.1	0.6			
														quartz	FP	1.2	1.0	6.0			
														quartz	FP	1.3	0.5	0.3			
														quartz	FP	1.5	0.7	0.3			
														quartz	FP	1.5	1.2	0.3			
														quartz	FP	2.2	1.0	0.7			
														quartz	FP	1.4	1.2	0.6			
														quartz	FP	1.4	1.1	0.4			
														quartz	FP	1.7	1.2	0.5			
														quartz	FP	1.4	1.0	0.4			
														quartz	FP	1.4	1.0	0.3			
														quartz	FP	1.0	0.9	0.2			
														quartz	FP	1.0	0.9	0.3			
														quartz	FP	1.5	1.4	0.7			
														quartz	FP	1.3	0.7	0.5			
														quartz	FP	1.8	1.2	0.6			
														quartz	FP	1.5	1.1	0.7			
														quartzite	FP	1.3	0.8	0.3			
													cream/grey	silcrete	BB	3.5	1.5	0.5	retouch		started backing, crescent shaped
													grey	silcrete	BB(crescent scraper)	1.5	1.5	0.5	retouch		
													cream	silcrete	BB(crescent scraper)	1.8	1.2	0.6	retouch/usewear		
													yellow/grey	silcrete	C	2.0	3.0	3.0			
													orange/yellow	silcrete	C	6.0	6.0	5.0			multiplatformed
													pink/grey	silcrete	C	3.5	2.7	2.0			
													pink	silcrete	C	4.1	3.3	3.7			
													grey	silcrete	C	7.1	6.5	3.9			weathered; inclusions up to 23mm
													yellow	silcrete	C	4.3	4.6	2.7		10	
													yellow	silcrete	C	4.1	3.4	3.0			
													pink	silcrete	C	4.6	4.0	2.8			
													grey	silcrete	C	2.5	3.3	2.0			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey/pink	silcrete	C	2.8	5.1	5.2			
													pink	silcrete	F	2.5	3.0	0.5			
													red	silcrete	F	4.5	2.0	1.0			
													grey/pink	silcrete	F	4.0	2.0	0.5	retouch/edge wear		
													yellow	silcrete	F	2.5	1.5	0.5			
													grey/yellow	silcrete	F	1.2	0.8	0.3			
													grey	silcrete	F	2.0	1.4	0.6			
													grey	silcrete	F	2.5	2.5	0.5			
													yellow/red	silcrete	F	2.2	1.3	0.4			
													pink	silcrete	F	3.0	2.9	1.0			
													grey	silcrete	F	1.3	2.5	0.5	retouch/edge wear		
													grey	silcrete	F	1.4	1.7	0.5			
													grey	silcrete	F	1.5	1.5	0.4			
													grey	silcrete	F	3.1	2.9	0.6			
													cream	silcrete	F	1.8	1.5	0.5			
													grey	silcrete	F	2.6	3.5	1.0			weathered
													grey	silcrete	F	3.0	1.5	0.7			
													pink	silcrete	F	2.1	1.6	0.4			
													yellow	silcrete	F	2.4	2.1	1.0			
													pink	silcrete	F	1.3	1.6	0.2			
													grey	silcrete	F	1.2	1.2	0.2			
													grey	silcrete	F	1.5	1.0	0.4			
													pink	silcrete	F	1.8	1.8	0.4			
													pink	silcrete	F	4.0	3.5	1.3			weathered
													cream	silcrete	F	1.7	1.8	0.4			
													grey	silcrete	F	2.3	2.5	0.8			
													grey	silcrete	F	1.4	2.0	0.6			
													pink	silcrete	F	1.5	1.5	0.4			
													grey	silcrete	F	3.5	2.5	1.6			weathered
													grey	silcrete	F	2.2	2.7	1.0			
													pink	silcrete	F	3.3	2.8	1.2			weathered
													cream	silcrete	F	2.7	2.3	1.0			weathered
													yellow	silcrete	F	4.2	5.3	1.4			weathered
													pink	silcrete	F	1.5	1.3	0.3			
													pink	silcrete	F	1.6	1.5	0.4			weathered
													cream/yellow	silcrete	F	5.0	4.2	2.3		30	weathered
													pink	silcrete	F	1.5	1.2	0.4			
													pink	silcrete	F	3.3	3.2	1.0			weathered
													yellow	silcrete	F	1.3	1.5	0.3			
													grey	silcrete	F	1.7	1.7	1.1			
													grey	silcrete	F	4.1	3.0	1.7			weathered
													cream	silcrete	F	2.6	3.0	0.6			
													red	silcrete	F	3.2	1.9	1.0			weathered
													red	silcrete	F	3.2	3.1	0.9			
													white	silcrete	F	3.5	3.3	1.3			
													pink	silcrete	F	2.9	2.3	1.0			
													pink	silcrete	F	2.7	2.8	1.0			
													grey	silcrete	F	3.4	4.0	1.1			
													pink	silcrete	F	2.8	1.6	0.6			
													yellow	silcrete	F	3.8	3.3	0.3			
													pink	silcrete	F	4.0	3.2	1.1			weathered
													grey	silcrete	F	5.6	3.4	2.0			weathered
													yellow	silcrete	F	4.7	2.5	1.4			
													grey	silcrete	F	2.8	1.4	0.8			
													grey	silcrete	F	3.3	3.0	1.0			
													pink	silcrete	F	2.2	1.4	0.8			
													pink	silcrete	F	2.3	0.6	1.0			
													pink	silcrete	F	2.4	1.5	0.6			
													grey/pink	silcrete	F	3.7	4.0	1.5			
													grey	silcrete	F	1.7	1.5	0.5			
													pink	silcrete	F	4.4	2.1	1.1			
													pink	silcrete	F	1.2	0.8	0.4			
													grey	silcrete	F	4.4	3.1	1.2			
													pink	silcrete	F	1.4	0.6	0.4			
													grey	silcrete	F	1.0	1.1	0.2			
													yellow	silcrete	F	1.6	0.9	0.4			
													grey	silcrete	F	1.7	1.4	0.4			
													grey	silcrete	F	5.5	3.2	2.0			
													grey	silcrete	F	2.3	1.8	0.6			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													yellow	silcrete	F	3.3	3.5	0.7			
													pink	silcrete	F	1.7	1.1	0.2			
													yellow	silcrete	F	2.2	1.9	0.5		20	
													grey	silcrete	F	1.6	1.7	0.5			
													grey	silcrete	F	2.6	3.1	1.0			weathered
													grey	silcrete	F	1.5	1.3	0.3			
													grey	silcrete	F	2.6	2.1	0.5			
													pink	silcrete	F	1.9	1.5	0.5			
													grey	silcrete	F	1.5	1.4	0.3			
													pink	silcrete	F	1.7	1.7	0.7			weathered
													grey	silcrete	F	2.3	1.4	0.7			
													pink	silcrete	F	1.2	0.9	0.2			
													grey	silcrete	F	1.5	1.2	0.2		5	
													grey	silcrete	F	3.4	2.8	1.1			
													grey	silcrete	F	2.5	1.7	0.6			weathered
													orange	silcrete	F	1.5	1.4	0.4			
													grey	silcrete	F	2.8	1.9	0.8			
													grey	silcrete	F	4.0	2.4	1.3			
													grey	silcrete	F	2.7	1.8	1.0			
													grey	silcrete	F	2.5	1.7	0.5			
													grey	silcrete	F	2.3	2.3	0.5			
													pink	silcrete	F	3.3	2.7	0.8	edgewear		
													grey	silcrete	F	2.3	1.3	0.4			inclusions up to 11mm
													grey	silcrete	F	3.2	1.8	1.0			
													yellow	silcrete	F	1.9	2.2	0.8			
													pink	silcrete	F	3.5	2.5	0.6	edgewear		
													yellow	silcrete	F	2.9	1.5	0.2	edgewear		
													grey	silcrete	F	2.1	1.0	0.3			
													grey	silcrete	F	2.7	2.1	1.4			weathered
													yellow	silcrete	F	3.4	1.7	0.2			
													yellow	silcrete	F	2.0	1.0	0.1			
													grey	silcrete	F	2.0	2.0	0.5			
													pink	silcrete	F	1.6	2.2	0.5	edgewear		
													grey	silcrete	F	3.0	2.1	0.7			weathered
													grey	silcrete	F	2.5	1.9	0.7			weathered
													yellow	silcrete	F	2.5	2.4	0.5			
													yellow/grey	silcrete	F	2.6	1.7	0.8			
													grey	silcrete	F	1.8	1.8	0.6	edgewear		
													yellow	silcrete	F	2.7	2.5	0.8			
													yellow	silcrete	F	1.8	1.1	0.2			
													red/yellow	silcrete	F	2.2	1.8	0.5			weathered
													pink	silcrete	F	1.8	1.7	0.4			
													yellow	silcrete	F	4.3	1.7	1.0		40(red)	
													grey	silcrete	F	1.6	1.6	0.5			
													yellow	silcrete	F	1.5	1.8	0.3			
													grey	silcrete	F	2.3	1.2	0.7			
													pink	silcrete	F	1.3	1.5	0.5			
													grey	silcrete	F	4.8	2.3	0.9			weathered
													grey	silcrete	F	1.9	1.4	0.3			
													grey	silcrete	F	3.5	2.2	1.2			
													pink	silcrete	F	2.7	2.2	0.6			
													pink	silcrete	F	2.9	3.9	1.2			
													grey	silcrete	F	1.8	1.5	0.6			
													grey	silcrete	F	1.7	1.7	0.5			
													grey	silcrete	F	0.9	1.0	0.5			
													yellow	silcrete	F	1.4	0.5	0.4			
													pink	silcrete	F	1.2	2.9	0.8			
													grey	silcrete	F	2.1	1.4	0.6			
													grey	silcrete	F	2.2	0.1	0.7			
													grey	silcrete	F	1.2	1.8	0.3			
													grey	silcrete	F	2.2	1.5	0.3			
													pink	silcrete	F	1.7	1.7	0.5			
													grey	silcrete	F	1.8	1.2	0.5			
													grey	silcrete	F	1.2	1.1	0.5			
													yellow	silcrete	F	2.2	1.5	0.9			
													grey	silcrete	F	1.5	1.4	0.5			
													grey	silcrete	F	1.2	1.3	0.5			
													pink	silcrete	F	1.6	1.6	0.6			
													yellow	silcrete	F	2.0	1.5	0.4			
													grey	silcrete	F	2.3	1.3	0.5		5(red)	
													grey	silcrete	F	1.2	1.5	0.3			
													pink	silcrete	F	1.3	1.7	0.3			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	F	0.8	1.0	0.1			
													grey	silcrete	F	1.1	0.8	0.9			
													grey	silcrete	F	1.0	0.8	0.6			
													pink	silcrete	F	1.2	0.6	0.2			
													pink	silcrete	F	1.9	1.8	0.5			
													grey	silcrete	F	2.4	3.1	0.5			weathered
													yellow	silcrete	F	2.1	1.6	0.5			
													white	silcrete	F	1.0	1.5	0.3			
													pink	silcrete	F	0.8	1 3	0.5			
													grey	silcrete	FP	4.0	3.0	1.5			
													grey	silcrete	FP	1.5	1.5	1.0			
													grey	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	3.5	2.0	1.5			
													grey	silcrete	FP	1.5	1.5	1.0			
													grey	silcrete	FP	1.0	1.0	1.0			
													pink	silcrete	FP	4.0	4.0	1.5			
													grey	silcrete	FP	2.5	1.0	1.0			
													grey	silcrete	FP	2.0	1.5	0.8			
													grey	silcrete	FP	5.0	4.0	1.5			
													pink/red	silcrete	FP	2.0	1.0	0.8			
													red	silcrete	FP	2.0	2.0	1.0			
													pink	silcrete	FP	2.0	1.5	0.8			
													grey	silcrete	FP	4.5	2.0	1.5			large inclusions up to 10mm
													yellow/grey	silcrete	FP	1.5	1.0	0.3			
													grey/pink	silcrete	FP	4.0	3.0	2.5			
													grey/red	silcrete	FP	4.0	4.0	2.5			large inclusions up to 20mm
													grey	silcrete	FP	2.0	2.0	2.0			large inclusions up to 7mm
													yellow/grey	silcrete	FP	3.0	3.0	1.0			
													cream	silcrete	FP	2.0	2.0	2.0			
													cream	silcrete	FP	1.5	1.5	0.5			
													grey	silcrete	FP	2.0	1.0	0.5			
													red/pink	silcrete	FP	5.0	2.0	1.0			
													cream	silcrete	FP	5.0	4.0	3.0			
													cream/grey	silcrete	FP	7.0	4.0	1.0			
													grey	silcrete	FP	4.0	1.5	0.5			crescent shaped
													grey	silcrete	FP	3.0	2.0	1.0			weathered
													pink	silcrete	FP	2.9	1.9	0.7			
													pink	silcrete	FP	2.3	1.6	1.3			
													pink	silcrete	FP	3.5	1.8	1.0			
													yellow/grey	silcrete	FP	3.9	2.6	2.4			
													grey	silcrete	FP	2.8	2.0	1.2			
													pink	silcrete	FP	3.3	2.3	1.1			
													grey	silcrete	FP	2.2	1.3	0.5			
													pink	silcrete	FP	2.9	1.8	0.8			
													grey	silcrete	FP	2.5	1.6	1.5			
													grey/pink	silcrete	FP	3.4	2.4	1.2			
													pink	silcrete	FP	3.1	2.0	1.8			
													pink	silcrete	FP	3.3	1.9	1.8			
													grey	silcrete	FP	1.5	1.0	0.3			
													grey	silcrete	FP	3.0	2.5	0.8			
													grey	silcrete	FP	4.8	4.5	1.5			
													pink	silcrete	FP	1.0	0.9	0.3			
													pink	silcrete	FP	4.3	2.2	2.2			
													grey	silcrete	FP	2.4	1.5	0.5			
													grey	silcrete	FP	2.0	2.0	0.8			
													pink	silcrete	FP	0.7	0.7	0.1			
													pink	silcrete	FP	2.7	1.5	0.6			weathered
													pink	silcrete	FP	1.1	1.0	0.2			
													pink	silcrete	FP	1.9	0.8	0.5			
													grey	silcrete	FP	1.5	1.1	0.5			
													pink	silcrete	FP	1.1	0.9	0.2			
													pink	silcrete	FP	1.7	1.2	0.5			
													grey	silcrete	FP	1.6	1.3	0.2			
													grey	silcrete	FP	1.6	0.9	0.2			
													pink	silcrete	FP	1.5	1.4	0.7			
													grey	silcrete	FP	1.3	0.6	0.2			
													grey	silcrete	FP	1.7	0.9	0.2			
													grey	silcrete	FP	1.2	1.0	0.2			
													yellow	silcrete	FP	1.6	0.8	0.2			
													pink	silcrete	FP	1.3	1.2	0.7			
													pink	silcrete	FP	2.2	1.8	0.8			
													pink	silcrete	FP	3.8	2.4	0.7			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	1.4	1.1	0.2			
													grey	silcrete	FP	1.8	1.1	0.3			
													pink	silcrete	FP	1.6	1.4	0.5			
													pink	silcrete	FP	2.6	1.7	0.9			
													pink	silcrete	FP	1.2	1.1	0.8			
													pink	silcrete	FP	1.2	1.1	0.2			
													pink	silcrete	FP	2.0	1.8	0.6			
													grey	silcrete	FP	1.9	1.8	1.4		2	
													pink	silcrete	FP	1.3	1.0	0.8			
													red	silcrete	FP	2.0	1.7	0.5			
													grey	silcrete	FP	0.7	0.6	0.4			
													pink	silcrete	FP	2.0	1.9	0.3			
													yellow	silcrete	FP	2.8	2.2	0.5			
													pink	silcrete	FP	1.3	1.3	0.4			
													grey	silcrete	FP	1.0	0.8	0.3			
													grey	silcrete	FP	1.3	1.0	0.3			
													grey	silcrete	FP	1.5	0.9	0.2			
													pink	silcrete	FP	2.7	2.1	0.9			
													grey	silcrete	FP	2.2	1.4	0.5			
													grey	silcrete	FP	2.3	1.5	0.5			
													grey	silcrete	FP	2.2	2.0	0.5			
													cream	silcrete	FP	1.4	1.1	0.7			
													grey	silcrete	FP	1.8	1.5	1.0			
													pink	silcrete	FP	1.4	0.7	0.4			
													grey	silcrete	FP	2.9	1.8	0.7			
													grey	silcrete	FP	1.1	1.0	0.3			
													grey	silcrete	FP	2.3	1.8	0.8			weathered
													grey	silcrete	FP	4.0	1.7	1.5			
													pink	silcrete	FP	1.3	0.8	0.6			
													cream	silcrete	FP	1.9	1.0	0.5			
													grey	silcrete	FP	5.2	2.7	0.7			
													grey/yellow	silcrete	FP	3.5	2.8	2.0			
													grey	silcrete	FP	6.3	3.7	1.7			
													yellow	silcrete	FP	1.5	0.7	0.5			
													pink	silcrete	FP	4.8	3.7	1.0			
													cream	silcrete	FP	3.4	2.8	1.4			weathered
													cream	silcrete	FP	4.7	2.3	1.2			
													pink	silcrete	FP	3.1	2.0	1.0			
													cream	silcrete	FP	3.0	1.6	1.1			
													grey	silcrete	FP	1.0	1.0	0.3			
													pink	silcrete	FP	1.1	0.6	0.4			
													pink	silcrete	FP	2.8	1.8	1.4			
													cream	silcrete	FP	2.3	2.0	1.0			
													yellow	silcrete	FP	1.7	1.7	0.6			
													grey	silcrete	FP	1.8	1.2	0.6			
													pink/yellow	silcrete	FP	4.7	1.5	1.1			wealhered
													yellow	silcrete	FP	3.3	2.5	1.4			
													grey	silcrete	FP	1.7	1.3	0.4			
													grey	silcrete	FP	3.2	1.6	0.7			
													grey	silcrete	FP	1.3	0.8	0.1			
													pink	silcrete	FP	2.0	1.5	0.8			
													pink	silcrete	FP	2.7	1.6	0.6			
													cream	silcrete	FP	1.3	1.1	0.6			
													pink	silcrete	FP	5.1	4.0	2.3			weathered
													pink	silcrete	FP	3.3	2.0	1.0			
													pink	silcrete	FP	3.2	2.4	1.2			
													red	silcrete	FP	6.2	4.4	2.0			
													grey	silcrete	FP	5.5	4.2	3.4			
													pink/yellow	silcrete	FP	3.6	3.0	0.5			inclusions up to 20mm
													grey	silcrete	FP	3.6	2.7	1.6			
													yellow	silcrete	FP	2.3	1.3	0.6			
													yellow	silcrete	FP	1.5	1.3	0.5			
													grey	silcrete	FP	2.8	1.9	1.2			
													grey	silcrete	FP	2.5	2.4	1.4			
													grey	silcrete	FP	2.8	2.3	0.7			
													grey	silcrete	FP	2.2	2.0	0.5			
													pink	silcrete	FP	5.3	3.5	1.6			
													grey	silcrete	FP	4.5	2.7	1.5			
													pink	silcrete	FP	1.6	0.9	0.2			
													grey	silcrete	FP	3.4	2.6	1.0			
													grey	silcrete	FP	1.8	1.3	0.9			
													yellow	silcrete	FP	4.5	3.2	1.6			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													pink	silcrete	FP	1.2	1.1	0.3			
													grey	silcrete	FP	1.9	1.1	0.4			
													grey	silcrete	FP	2.4	2.4	0.9			
													grey	silcrete	FP	2.1	1.6	1.1			
													pink	silcrete	FP	1.7	1.4	0.6			weathered
													grey	silcrete	FP	1.3	1.3	0.7			
													pink	silcrete	FP	3.5	2.6	1.5			
													yellow	silcrete	FP	3.7	1.9	1.1			weathered
													yellow	silcrete	FP	4.2	2.5	1.3		2	
													grey	silcrete	FP	5.0	1.5	1.5			
													grey	silcrete	FP	3.2	1.5	1.6			
													grey	silcrete	FP	2.0	1.3	0.7			
													grey	silcrete	FP	3.9	3.6	2.7			
													grey	silcrete	FP	2.0	1.7	1.5			
													pink	silcrete	FP	1.7	1.4	0.3			
													pink	silcrete	FP	1.2	1.0	0.3			
													pink	silcrete	FP	5.5	3.8	2.3			
													grey/pink	silcrete	FP	2.8	1.5	0.4			weathered
													grey	silcrete	FP	4.4	2.0	1.6			
													grey	silcrete	FP	1.2	1.0	0.4			weathered
													grey	silcrete	FP	1.6	0.9	0.8			
													yellow	silcrete	FP	1.7	1.3	0.4			
													grey	silcrete	FP	2.6	2.1	1.2			
													grey	silcrete	FP	2.4	2.1	2.0			
													pink	silcrete	FP	1.5	1.5	0.7			
													grey	silcrete	FP	2.2	2.2	0.5			
													grey	silcrete	FP	3.2	2.7	1.7			
													yellow	silcrete	FP	2.6	2.5	1.3			
													grey	silcrete	FP	1.7	0.9	0.5			
													grey	silcrete	FP	4.2	2.5	1.9			
													grey	silcrete	FP	2.5	1.6	1.6			
													pink	silcrete	FP	3.5	2.0	0.6			
													yellow	silcrete	FP	4.6	3.6	2.1			
													grey	silcrete	FP	1.7	1.4	0.5			inclusions up to 20mm
													yellow	silcrete	FP	1.2	1.0	0.1			
													grey	silcrete	FP	1.3	1.1	0.4			
													grey	silcrete	FP	1.5	1.5	0.4			
													grey	silcrete	FP	1.0	0.8	0.1			
													grey	silcrete	FP	1.0	0.8	0.4			
													pink	silcrete	FP	1.8	1.2	0.9			
													orange	silcrete	FP	2.1	1.8	1.0			
													yellow	silcrete	FP	3.7	3.2	1.8			
													yellow	silcrete	FP	2.0	0.9	0.9			
													grey	silcrete	FP	1.6	1.2	1.0			
													pink	silcrete	FP	2.5	2.4	1.7			
													pink	silcrete	FP	0.8	0.8	0.5			
													pink	silcrete	FP	2.3	1.3	0.6			
													grey	silcrete	FP	1.9	1.9	0.9			
													orange	silcrete	FP	1.0	0.6	0.2			
													yellow	silcrete	FP	2.6	2.2	1.3			
													yellow	silcrete	FP	3.1	2.5	0.9			
													grey	silcrete	FP	2.1	2.0	1.0			
													yellow	silcrete	FP	1.9	1.5	1.0			
													yellow	silcrete	FP	1.2	0.8	0.1			
													grey	silcrete	FP	1.1	1.0	0.4			
													pink	silcrete	FP	0.9	0.6	0.1			
													pink	silcrete	FP	1.5	1.0	0.8			
													pink	silcrete	FP	0.8	0.6	0.2			
													pink	silcrete	FP	0.9	0.7	0.6			
													yellow	silcrete	FP	1.8	1.3	0.5			
													grey	silcrete	FP	1.0	0.7	0.7			
													pink	silcrete	FP	0.7	0.6	0.5			
													pink	silcrete	FP	1.4	0.8	0.7			
													pink	silcrete	FP	0.7	0.7	0.1			
													grey	silcrete	FP	2.5	2.0	0.4			
													grey	silcrete	FP	1.2	1.2	0.5			
													grey	silcrete	FP	1.4	0.9	0.5			
													grey	silcrete	FP	2.1	1.3	0.4			
													pink	silcrete	FP	5.3	4.3	1.5			
													grey	silcrete	FP	1.7	1.1	0.8			
													grey	silcrete	FP	2.3	1.3	0.6			
													grey	silcrete	FP	4.2	3.7	1.4			weathered

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	1.6	1.4	0.7			
													pink	silcrete	FP	2.0	1.2	0.2	retouch/edge wear		
													grey	silcrete	FP	3.3	2.5	1.1			
													grey/pink	silcrete	FP	6.8	4.4	2.0			weathered
													grey	silcrete	FP	1.7	1.6	1.1			
													yellow	silcrete	FP	3.2	2.4	0.7			
													pink	silcrete	FP	1.8	1.4	0.3			
													pink	silcrete	FP	1.4	1.2	0.3			
													grey	silcrete	FP	2.8	1.7	1.0			
													grey	silcrete	FP	2.4	1.4	0.6			
													grey	silcrete	FP	2.2	1.9	0.6			inclusions up to 14mm
													grey	silcrete	FP	2.4	1.9	1.1			
													pink	silcrete	FP	1.8	1.0	0.2			
													pink	silcrete	FP	1.6	1.1	0.7			
													grey	silcrete	FP	3.5	2.5	1.7			inclusions up to 16mm
													pink	silcrete	FP	1.1	1.1	0.1			
													grey	silcrete	FP	1.5	1.1	0.3			
													grey	silcrete	FP	2.9	2.1	2.8			
													yellow	silcrete	FP	1.8	1.1	0.4			
													pink	silcrete	FP	1.6	1.4	0.5			
													yellow	silcrete	FP	1.6	1.4	0.6			
													pink	silcrete	FP	1.7	1.6	0.5			
													grey	silcrete	FP	2.4	1.9	1.9			
													grey	silcrete	FP	3.1	2.2	0.6			
													grey	silcrete	FP	2.5	2.0	0.7			
													pink	silcrete	FP	2.7	2.5	0.9			weathered
													yellow	silcrete	FP	5.0	4.0	3.5			inclusions up to 13mm
													grey	silcrete	FP	2.3	1.8	0.7			
													grey	silcrete	FP	2.6	1.4	1.2			weathered
													grey	silcrete	FP	2.6	2.5	1.3			
													pink	silcrete	FP	1.6	1.5	0.7			weathered
													grey	silcrete	FP	1.9	1.5	0.6			
													grey	silcrete	FP	2.6	2.0	0.9			
													pink	silcrete	FP	4.0	2.1	0.9			weathered
													grey	silcrete	FP	1.9	1.8	0.6			inclusions up to 13mm
													grey	silcrete	FP	2.6	1.7	1.5			
													grey	silcrete	FP	2.8	1.7	1.0			
													pink	silcrete	FP	2.0	2.0	0.4			
													grey	silcrete	FP	1.3	1.2	1.0			
													grey	silcrete	FP	1.8	1.7	0.5			
													pink	silcrete	FP	2.5	1.5	0.6			
													pink	silcrete	FP	2.0	1.9	0.8			
													yellow	silcrete	FP	2.5	1.8	1.0			
													yellow	silcrete	FP	1.3	1.1	0.3			
													grey	silcrete	FP	2.4	2.0	0.7			
													grey	silcrete	FP	2.2	1.8	0.2			
													grey	silcrete	FP	1.9	1.6	0.7			
													pink	silcrete	FP	1.3	1.2	0.3			
													pink	silcrete	FP	1.3	0.8	0.3			
													grey	silcrete	FP	1.2	1.0	0.4		30	
													pink	silcrete	FP	3.1	2.7	0.7			
													pink	silcrete	FP	1.3	1.0	0.5			
													grey	silcrete	FP	3.3	2.4	1.3		15	
													grey	silcrete	FP	2.7	2.5	1.0			
													pink	silcrete	FP	2.0	1.7	0.7			
													orange	silcrete	FP	1.9	1.0	0.5			
													grey	silcrete	FP	1.8	1.7	0.5			weathered
													grey	silcrete	FP	3.8	3.2	0.5			weathered
													grey	silcrete	FP	2.7	2.4	1.5			weathered
													grey	silcrete	FP	1.2	1.1	0.6			
													pink	silcrete	FP	1.7	1.2	0.9			
													grey	silcrete	FP	1.3	1.2	0.3			
													grey	silcrete	FP	3.5	3.5	1.0			inclusions up to 12mm
													grey	silcrete	FP	2.9	2.9	1.4			
													grey	silcrete	FP	2.8	2.2	1.1			
													grey	silcrete	FP	2.1	2.0	1.0			
													grey	silcrete	FP	1.1	1.1	0.4			
													grey	silcrete	FP	2.7	1.1	1.1			
													grey	silcrete	FP	3.9	3.0	2.6			inclusions up to 14mm
													grey	silcrete	FP	2.2	2.0	1.1			
													pink	silcrete	FP	3.5	3.2	1.2			inclusions up to 9mm

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													red/yellow	silcrete	FP	2.4	1.8	1.2			
													pink	silcrete	FP	4.5	1.7	1.9			weathered
													pink	silcrete	FP	2.0	1.5	1.4			
													grey	silcrete	FP	1.2	0.9	0.4			
													grey	silcrete	FP	1.8	1.0	0.9			
													grey	silcrete	FP	3.8	2.8	1.5			
													yellow/pink	silcrete	FP	3.9	1.9	1.0			
													grey	silcrete	FP	3.0	1.7	1.3			
													pink	silcrete	FP	0.9	0.8	0.1			
													grey	silcrete	FP	0.7	0.8	0.1			
													yellow	silcrete	FP	3.4	2.9	1.2			
													pink	silcrete	FP	3.5	2.5	2.0			
													pink	silcrete	FP	3.0	2.5	1.8			weathered
													grey	silcrete	FP	2.0	1.6	0.7			weathered
													grey	silcrete	FP	3.4	2.5	1.6			
													yellow	silcrete	FP	3.1	2.0	1.0			weathered
													pink	silcrete	FP	1.5	1.3	0.7			
													pink	silcrete	FP	2.5	2.7	0.9			
													grey	silcrete	FP	3.4	2.0	1.0			
													pink	silcrete	FP	3.2	1.9	0.9			
													pink	silcrete	FP	2.7	1.6	0.8			
													grey	silcrete	FP	2.5	1.7	0.9			
													grey	silcrete	FP	5.3	3.5	1.8		15(red)	
													yellow	silcrete	FP	4.3	2.5	1.6			
													pink	silcrete	FP	4.5	3.9	1.2			
													grey	silcrete	FP	1.6	1.2	0.8			
													grey	silcrete	FP	2.6	1.9	1.2			
													pink	silcrete	FP	1.1	0.8	0.4			
													yellow/pink	silcrete	FP	4.8	4.7	1.2			
													grey	silcrete	FP	1.8	1.0	0.3			
													yellow	silcrete	FP	8.5	5.7	2.2			
													pink	silcrete	FP	2.4	1.8	1.8			
													yellow	silcrete	FP	3.2	1.4	1.0			
													pink	silcrete	FP	2.4	1.9	0.4			
													pink	silcrete	FP	2.1	1.1	0.6			
													pink	silcrete	FP	2.1	1.6	0.7			
													yellow	silcrete	FP	1.7	1.5	0.5			
													grey	silcrete	FP	2.9	1.9	1.0			weathered
													yellow	silcrete	FP	1.3	1.3	0.2			
													grey	silcrete	FP	2.0	1.8	1.0			
													pink	silcrete	FP	3.2	2.4	1.0			
													grey	silcrete	FP	2.0	1.7	0.3			
													grey	silcrete	FP	1.2	1.2	0.2			
													pink	silcrete	FP	2.5	1.2	0.3			
													grey	silcrete	FP	1.8	1.8	0.3			
													yellow	silcrete	FP	2.5	1.5	1.0			
													grey	silcrete	FP	2.6	2.5	1.1			
													yellow	silcrete	FP	2.4	1.6	0.5			
													red	silcrete	FP	2.1	2.0	0.5			
													red	silcrete	FP	2.0	1.4	0.4			
													grey	silcrete	FP	2.2	1.4	1.5			
													pink	silcrete	FP	1.9	1.7	1.7			
													grey	silcrete	FP	3.7	2.7	1.4			
													grey	silcrete	FP	2.9	1.9	1.7			
													grey	silcrete	FP	2.0	1.8	1.2			
													grey	silcrete	FP	2.2	1.6	0.9			
													grey	silcrete	FP	3.5	2.4	0.6			
													pink	silcrete	FP	1.5	0.8	0.6			
													pink	silcrete	FP	2.2	1.4	0.9			
													grey	silcrete	FP	1.2	1.0	0.1			
													yellow	silcrete	FP	1.4	1.0	0.3			
													grey	silcrete	FP	2.8	1.8	2.6			
													yellow	silcrete	FP	1.5	1.0	0.4			
													grey	silcrete	FP	2.0	2.0	0.5			
													grey	silcrete	FP	1.4	1.1	0.2			
													pink	silcrete	FP	2.3	1.9	1.0			
													grey	silcrete	FP	1.2	1.1	0.3			
													grey	silcrete	FP	1.3	1.1	0.3			
													pink	silcrete	FP	1.5	1.3	1.0			
													pink	silcrete	FP	2.0	1.2	1.0			
													grey	silcrete	FP	2.0	2.0	0.7		2	
													grey	silcrete	FP	1.5	1.2	0.4		10	

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													yellow	silcrete	FP	1.3	1.2	0.6			
													grey	silcrete	FP	1.5	1.0	0.2			
													pink	silcrete	FP	1.6	1.2	0.3			
													yellow	silcrete	FP	1.5	1.0	0.5			
													yellow	silcrete	FP	1.5	1.1	0.1			
													grey	silcrete	FP	1.2	1.0	0.5			
													grey	silcrete	FP	2.1	1.1	0.4			
													pink	silcrete	FP	1.3	1.0	0.4			
													grey/pink	silcrete	FP	1.8	1.0	0.3			
													grey	silcrete	FP	1.5	1.0	0.2			
													pink	silcrete	FP	1.2	0.9	0.1			
													grey	silcrete	FP	1.5	1.0	0.2			
													grey	silcrete	FP	1.0	0.5	0.1			
													pink	silcrete	FP	1.3	1.0	0.3			
													grey	silcrete	FP	0.7	0.6	0.2			
													grey	silcrete	FP	1.7	1.0	0.7			
													grey	silcrete	FP	1.3	1.0	0.2			
													grey	silcrete	FP	2.0	0.7	0.4			
													grey	silcrete	FP	1.4	1.0	0.3			
													pink	silcrete	FP	1.2	1.0	0.1			
													grey	silcrete	FP	1.0	0.8	0.1			
													pink	silcrete	FP	1.9	0.2	0.1			
													grey	silcrete	FP	1.0	0.8	0.2			
													grey	silcrete	FP	1.0	0.8	0.7			
													grey	silcrete	FP	1.3	1.1	0.4			
													grey	silcrete	FP	0.8	0.8	0.1			
													pink	silcrete	FP	0.9	0.9	0.2			
													pink	silcrete	FP	1.8	1.5	0.5			
													grey	silcrete	FP	1.6	1.4	0.5			
													grey	silcrete	FP	1.6	1.3	0.6			
													grey	silcrete	FP	3.5	2.5	1.0			
													yellow	silcrete	FP	1.4	1.2	0.4			
													pink	silcrete	FP	2.5	1.5	0.8			
													red	silcrete	FP	2.4	1.5	0.6			weathered
													pink	silcrete	FP	2.1	1.5	0.3			
													pink	silcrete	FP	1.2	0.8	1.0			
													grey	silcrete	FP	1.3	0.9	0.7			
													grey	silcrete	FP	2.5	2.3	1.5			
													cream	silcrete	F	4.0	4.0	1.0			
													grey	silcrete	FP	1.7	0.9	0.3			
													grey	volcanic	F	1.9	2.2	0.5			
													dark grey	volcanic	FP	2.7	2.0	1.1			
44	46 cont.												grey	chert	B	1.7	0.6	0.4	retouch		
													grey/pink	chert	C	7.3	6.0	6.9			
													grey	chert	C	3.0	1.7	1.4			
													pink	chert	F	1.5	2.5	0.6	retouch		
													grey	chert	F	1.8	1.7	0.9			
													yellow	chert	F	2.1	1.5	0.7	retouch		
													grey	chert	F	2.1	2.5	0.8			
													white	chert	FP	2.9	2.4	0.5			
													pink	chert	FP	2.1	1.4	0.7			
													grey	chert	FP	1.6	1.4	0.4			
													grey	chert	FP	2.7	2.5	1.3			
													pink	chert	FP	2.5	1.8	1.3			
													grey	FGS	F	2.6	2.1	0.9			
													pink	FGS	F	2.7	2.3	0.7			
													grey	FGS	FP	2.7	1.8	1.3			
													grey	FGS	FP	5.0	3.4	1.3			
													red	FGS	FP	2.3	1.8	0.7			
													yellow	mudstone	C	4.5	4.3	2.6		40	
													yellow	mudstone	C	4.9	3.0	2.4		30	
													yellow	mudstone	C	4.5	3.0	2.6			
													red	mudstone	C	1.7	2.4	2.2		10	
													yellow	mudstone	C	3.2	4.2	2.8			
													yellow	mudstone	F	4.5	5.1	2.0			
													yellow	mudstone	F	2.6	2.2	1.0		5 - on platform	
													yellow	mudstone	F	1.3	1.9	0.5			
													red	mudstone	F	5.0	4.9	1.6	retouch		
													red	mudstone	F	1.7	1.3	0.7			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													yellow	mudstone	F	3.1	2.3	0.8			
													orange	mudstone	F	1.5	1.2	0.3			
													pink	mudstone	F	2.9	3.8	1.0			
													yellow	mudstone	F	2.6	1.6	0.7			
													yellow	mudstone	F	5.6	4.1	2.0		20	
													orange	mudstone	F	3.3	2.2	0.5			
													yellow	mudstone	F	2.5	3.2	1.0			
													yellow	mudstone	BB(SCR)	2.2	1.5	0.7	usewear		
													yellow	mudstone	FP	3.2	2.3	1.2			
													yellow	mudstone	FP	2.0	1.1	0.7			
													yellow	mudstone	FP	2.2	2.2	1.1			
													yellow/crea m	mudstone	FP	6.5	2.9	1.5	retouch		
													yellow	mudstone	FP	3.5	2.5	1.7			
													yellow	mudstone	FP	3.1	2.3	1.0			
													cream	mudstone	FP	2.0	1.5	0.6			
													yellow	mudstone	FP	1.0	0.9	0.8		20	
													red	mudstone	FP	1.9	1.6	0.4			
													yellow	mudstone	FP	2.8	2.1	0.7	retouch		
													yellow	mudstone	FP	2.6	1.4	0.5			
													yellow	mudstone	FP	2.5	1.2	0.5			
													yellow	mudstone	FP	2.5	2.0	1.2			
													orange	mudstone	FP	1.8	1.1	0.5			
													grey	mudstone	FP	2.1	1.2	0.6			
													orange	mudstone	FP	1.5	1.5	0.3			
													orange	mudstone	FP	2.3	1.5	1.1			
													yellow	mudstone	FP	2.2	1.0	1.1			
													orange	mudstone	FP	1.0	0.9	0.3			
													yellow	mudstone	FP	3.8	2.6	1.0			
														volcanic	FRP	5.5	4.8	4.5			
														quartz	F	2.6	2.1	1.0			
														quartz	F	1.3	0.9	0.5			
														quartz	F	1.5	0.9	0.5			
														quartz	FP	2.2	1.6	0.6			
														quartz	FP	2.2	1.1	0.6			
														quartz	FP	3.8	3.0	1.0			
														quartz	FP	2.2	1.0	0.9			
														quartz	FP	1.5	1.4	0.7			
														quartz	FP	1.8	1.7	0.5			
														quartz	FP	1.5	0.9	0.9			
														quartz	FP	1.4	1.3	0.8			
														quartzite	FP	3.2	2.0	1.0			
														quartzite	FP	2.1	2.0	1.1			
														quartzite	FP	6.0	4.2	2.6		20	
														quartzite	FP	3.1	2.3	1.1			
													grey	silcrete	BB	2.8	1.4	1.0	retouch		
													pink	silcrete	BB	2.2	1.2	0.4	retouch		
													pink	silcrete	C	3.7	3.2	3.0			
													grey	silcrete	C	6.9	4.5	3.0			
													grey	silcrete	C	4.5	4.2	2.0			
													yellow	silcrete	C	5.5	4.7	3.5			
													yellow	silcrete	C	5.1	5.5	3.1			
													grey	silcrete	C	3.5	3.0	1.7			
													pink	silcrete	C	2.7	4.0	1.7			
													yellow	silcrete	C	5.0	8.5	7.2			
													grey	silcrete	C	2.3	4.9	3.5			
													yellow	silcrete	C	4.1	1.9	0.9			
													grey	silcrete	C	3.2	5.0	3.8			
													grey	silcrete	C	2.2	3.2	1.5			
													grey	silcrete	C	2.5	6.0	5.3			
													grey	silcrete	C	3.6	1.4	1.2			
													grey	silcrete	C	3.2	4.7	2.4			
													grey	silcrete	C	1.9	1.8	1.5			
													grey	silcrete	C	3.3	5.0	3.8			
													grey	silcrete	C	4.0	2.2	2.1			
													grey	silcrete	C	6.0	8.5	4.7			
													yellow	silcrete	C	2.9	6.0	4.1			
													yellow	silcrete	C	2.5	6.5	5.5			
													pink	silcrete	C	3.5	4.7	2.2			
													grey	silcrete	C	3.7	3.5	1.4			
													grey	silcrete	C	2.8	2.0	1.4			
													pink	silcrete	F	3.0	2.1	0.7			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													red	silcrete	F	6.3	3.2	1.0	retouch		
													grey	silcrete	F	1.9	2.4	1.0			
													yellow	silcrete	F	4.8	3.2	2.0			
													yellow	silcrete	F	3.4	3.1	1.2			
													purple	silcrete	F	4.3	3.5	1.0	retouch		
													grey	silcrete	F	1.1	2.0	0.6			
													grey	silcrete	F	1.8	1.1	0.5			
													grey	silcrete	F	5.6	4.2	2.2		5	
													yellow	silcrete	F	4.9	3.9	1.4			
													white	silcrete	F	5.1	3.3	1.5	retouch		
													grey	silcrete	F	3.1	1.9	1.2			
													pink	silcrete	F	2.5	2.0	0.6			
													grey	silcrete	F	1.5	1.4	0.4			
													yellow	silcrete	F	3.2	2.4	1.3			
													grey	silcrete	F	2.7	2.4	1.0			
													grey	silcrete	F	2.3	1.6	0.6			
													yellow	silcrete	F	3.9	3.0	1.8			
													yellow	silcrete	F	3.4	2.3	0.4			
													grey	silcrete	F	5.5	4.6	1.5	retouch		
													pink	silcrete	F	2.2	2.1	0.9			
													pink	silcrete	F	2.4	2.7	0.8			
													grey	silcrete	F	1.2	2.3	0.9			
													grey	silcrete	F	1.9	2.3	0.9			
													pink	silcrete	F	2.3	1.5	0.5			
													grey	silcrete	F	4.0	3.8	2.2			
													grey	silcrete	F	4.6	2.7	1.4			
													pink	silcrete	F	3.7	3.0	1.3			
													grey	silcrete	F	3.2	5.4	1.6			
													yellow	silcrete	F	4.4	3.2	1.1			
													grey	silcrete	F	4.0	2.6	1.0			
													grey	silcrete	F	3.7	4.5	1.1			
													pink	silcrete	F	1.9	2.0	0.6			
													pink	silcrete	F	3.4	3.5	1.0			
													grey	silcrete	F	1.9	1.2	0.7			
													grey	silcrete	F	2.7	3.6	1.0			
													grey	silcrete	F	1.2	1.3	0.3			
													grey	silcrete	F	2.8	3.3	1.6			
													yellow	silcrete	F	2.5	1.9	0.6			
													grey	silcrete	F	2.2	4.4	1.0			
													grey	silcrete	F	2.1	1.9	0.6			
													grey	silcrete	F	4.3	2.8	0.8			
													grey	silcrete	F	3.2	2.7	0.6	retouch		
													grey	silcrete	F	2.7	2.6	0.9			
													grey	silcrete	F	4.5	4.1	2.0			
													yellow	silcrete	F	3.2	2.2	0.8			
													yellow	silcrete	F	3.3	3.3	1.0			
													grey	silcrete	F	3.8	3.7	1.0			
													yellow/red	silcrete	F	4.7	3.0	1.3		50	
													grey	silcrete	F	2.0	2.4	0.6			
													grey	silcrete	F	1.7	1.4	0.7			
													grey	silcrete	F	1.7	1.2	0.5			
													yellow/red	silcrete	F	0.8	1.0	0.2			
													pink	silcrete	F	3.0	3.7	0.4			
													grey	silcrete	F	2.0	2.7	1.0			
													grey	silcrete	F	1.3	1.1	0.3			
													pink	silcrete	F	0.9	1.5	0.3			
													grey	silcrete	F	2.7	2.7	0.6			
													pink	silcrete	F	2.8	2.0	0.6			
													grey	silcrete	F	2.4	2.4	0.7			
													grey	silcrete	F	2.5	1.8	0.7			
													grey	silcrete	F	2.2	2.3	0.6			
													pink	silcrete	F	4.7	3.0	1.8			
													red	silcrete	F	4.5	3.2	1.0			
													yellow	silcrete	F	2.9	2.8	1.1			
													yellow/grey	silcrete	F	2.3	2.5	0.6			
													grey	silcrete	F	2.5	4.2	1.0			
													grey	silcrete	F	2.6	1.5	0.8			
													pink	silcrete	F	1.4	2.3	0.3			
													grey	silcrete	F	2.3	2.0	0.5			
													grey	silcrete	F	3.2	2.2	1.3			
													pink	silcrete	FP	2.3	1.7	0.7			
													pink	silcrete	FP	3.0	3.0	2.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	4.8	1.7	1.8			
													yellow/pink	silcrete	FP	3.5	3.3	1.7			
													pink	silcrete	FP	6.2	4.8	2.7			
													grey	silcrete	FP	2.0	1.5	0.9			
													pink	silcrete	FP	3.0	2.9	1.0			
													white	silcrete	FP	3.6	2.6	0.9	retouch		
													yellow	silcrete	FP	5.4	3.4	1.4			
													grey	silcrete	FP	2.6	1.5	0.9			
													grey	silcrete	FP	1.6	1.6	0.7			
													grey	silcrete	FP	3.5	2.4	1.8			
													grey	silcrete	FP	4.1	3.2	1.6			
													white	silcrete	FP	4.5	2.2	1.6			
													grey	silcrete	FP	2.7	2.5	1.1			
													pink	silcrete	FP	4.5	2.5	1.8			
													yellow	silcrete	FP	3.4	2.5	2.5			
													grey	silcrete	FP	2.5	2.3	1.3			
													red	silcrete	FP	2.5	1.6	0.8			
													grey	silcrete	FP	1.4	1.2	0.7			
													yellow	silcrete	FP	4.2	2.7	1.2			
													grey	silcrete	FP	2.0	1.4	0.7			
													yellow	silcrete	FP	3.0	1.4	1.3			
													grey	silcrete	FP	1.7	1.4	0.6			
													yellow	silcrete	FP	1.9	1.0	0.5			
													grey	silcrete	FP	2.2	1.3	0.9			
													yellow	silcrete	FP	4.9	4.0	1.8			
													grey	silcrete	FP	3.8	2.7	1.6			
													grey	silcrete	FP	3.8	3.5	1.4			
													grey	silcrete	FP	2.3	2.2	1.0			
													grey	silcrete	FP	3.7	1.8	1.2			
													grey	silcrete	FP	3.0	2.1	1.3			
													grey	silcrete	FP	1.7	1.6	0.3			
													pink	silcrete	FP	2.1	2.0	0.6			
													grey	silcrete	FP	2.2	1.6	0.5			
													pink	silcrete	FP	2.1	1.4	0.7			
													grey	silcrete	FP	2.8	2.0	1.0			
													grey	silcrete	FP	1.4	1.3	0.2			
													grey	silcrete	FP	1.2	1.2	0.3			
													grey	silcrete	FP	1.7	1.5	1.0			
													yellow	silcrete	FP	4.0	2.0	0.9			
													grey	silcrete	FP	2.8	2.4	1.0			
													grey	silcrete	FP	2.5	2.5	0.6			
													grey	silcrete	FP	4.0	3.7	1.6			
													grey	silcrete	FP	3.0	2.9	1.8			
													pink	silcrete	FP	2.2	1.5	0.8			
													grey	silcrete	FP	3.9	2.2	1.0			
													grey	silcrete	FP	2.3	2.2	0.7			
													grey	silcrete	FP	3.5	3.1	1.5			
													yellow	silcrete	FP	3.7	1.8	1.0			
													grey	silcrete	FP	3.5	1.7	1.1	retouch		
													grey	silcrete	FP	1.8	1.4	0.5			
													grey	silcrete	FP	1.9	1.5	0.3			
													yellow	silcrete	FP	3.1	1.8	1.1			
													grey	silcrete	FP	2.5	2.3	0.5			
													grey	silcrete	FP	2.8	2.2	0.9			
													grey	silcrete	FP	1.4	1.1	0.6			
													yellow	silcrete	FP	2.0	1.5	0.3			
													grey	silcrete	FP	2.1	2.0	0.8			
													grey	silcrete	FP	1.4	1.2	0.2			
													pink	silcrete	FP	1.1	1.1	0.2			
													grey	silcrete	FP	1.3	0.8	0.4			
													pink	silcrete	FP	4.2	2.5	1.5			
													yellow	silcrete	FP	2.5	2.5	0.5			
													pink	silcrete	FP	6.1	3.5	1.5			
													yellow	silcrete	FP	3.5	2.7	1.1			
													grey	silcrete	FP	1.5	1.2	0.5			
													grey	silcrete	FP	2.1	1.6	0.9			
													grey	silcrete	FP	2.7	2.1	0.5			
													grey	silcrete	FP	3.5	2.9	1.6			
													yellow	silcrete	FP	2.5	2.2	1.0			
													grey	silcrete	FP	2.1	1.6	1.3			
													pink	silcrete	FP	3.5	2.8	1.2			
													grey	silcrete	FP	1.1	0.8	0.4			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	1.7	1.7	0.6			
													grey	silcrete	FP	1.6	1.0	0.9			
													grey	silcrete	FP	2.0	1.3	1.2			
													grey	silcrete	FP	2.5	1.8	0.9			
													grey	silcrete	FP	1.4	1.3	0.5			
													grey	silcrete	FP	2.4	1.9	0.9			
													grey	silcrete	FP	2.3	2.0	0.8			
													pink	silcrete	FP	2.5	2.0	0.5			
													grey	silcrete	FP	2.5	2.2	0.6			
													pink	siliceous conglomerate	C	4.8	9.0	7.5			
44	46 cont.												grey/red	chert	FP	2.5	1.4	0.9			
													brown	chert	FP	2.4	1.5	0.6			
													orange	chert	FP	1.8	0.7	0.3			
													pink/grey	chert	FP	2.4	1.9	1.2		5	
													yellow	FGS	C	3.7	3.1	1.1			
													pink	FGS	F	4.5	4.8	2.3			weathered
													grey	FGS	F	2.6	2.0	0.5			
													grey	FGS	F	5.0	4.1	2.0	retouch		
													grey	FGS	F	3.9	4.5	1.2			
													yellow	FGS	FP	6.0	4.2	3.0		20	
													red	FGS	FP	3.8	2.7	1.0			weathered
													red	FGS	FP	1.8	1.4	0.5			
													pink	FGS	FP	2.8	2.5	0.9			
													orange	FGS	FP	2.9	2.1	1.0			
													pink	FGS	FP	1.9	1.9	0.8	retouch/usewear		
													pink	FGS	FRP	7.2	3.2	3.9		30	
													pink	FGS	FRP	6.9	6.7	3.4		40	
													pink	FGS	FRP	9.5	5.9	5.4		75	
													pink	FGS	FRP	10.0	6.1	6.0		75	
													pink	FGS	FRP	10.6	9.0	9.3			weathered
													orange/red	mudstone	F	2.0	2.1	0.8		5	
													orange	mudstone	F	3.1	3.1	0.8	retouch	2 (red)	
													orange	mudstone	F	2.2	1.4	0.5	retouch		
													orange	mudstone	F	1.7	1.6	0.7			
													yellow	mudstone	F	2.1	2.0	0.6			
													grey	mudstone	F	1.4	1.1	0.2			
													yellow	mudstone	F	3.0	2.0	0.8			
													white	mudstone	F	1.3	1.5	0.5	edgewear		
													yellow	mudstone	F	2.3	2.2	0.7	usewear, residue?	10	
													red	mudstone	F	1.8	1.4	0.8		20	
													yellow	mudstone	F	1.5	1.1	0.3			
													orange	mudstone	F	4.3	3.8	1.8	retouch, residue	30	
													yellow	mudstone	F	0.9	0.9	0.3			
													orange	mudstone	F	2.1	0.9	0.3			
													orange	mudstone	F	2.1	2.4	0.6			
													yellow	mudstone	F	3.4	4.0	1.0		10	
													cream	mudstone	F	1.7	2.2	0.7		20	
													yellow	mudstone	FP	1.5	1.3	0.9			
													yellow	mudstone	FP	1.1	1.0	0.5			
													yellow	mudstone	FP	1.3	1.1	0.7			
													yellow	mudstone	FP	2.3	1.1	1.0		10 (red)	
													yellow	mudstone	FP	1.1	0.8	0.2			
													cream	mudstone	FP	1.7	0.9	0.4			
													orange	mudstone	FP	2.7	1.4	0.7	retouch		
													white	mudstone	FP	1.3	1.0	0.3			
													cream	mudstone	FP	1.0	0.7	0.2			
													orange	mudstone	FP	1.7	0.5	0.1			
													red	mudstone	FP	1.1	0.7	0.5			
													orange	mudstone	FP	2.7	2.1	0.5			
													orange	mudstone	FP	1.4	1.1	0.4	usewear	5	
													cream	mudstone	FP	3.0	2.2	0.8			
													orange	mudstone	FP	1.1	0.8	0.4			
													red	mudstone	FP	2.0	2.0	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
														petrified wood	FP	3.1	2.5	0.4	retouch		
													white	porcellanite	F	3.0	2.6	0.8	retouch		
														quartz	FP	2.3	1.7	0.9			
														quartz	FP	1.8	1.0	0.3			
														quartz	FP	1.9	1.9	0.7			
														quartz	FP	1.2	0.8	0.6			
														quartz	FP	1.4	1.0	0.9			
														quartz	FP	1.0	0.7	0.2			
														quartz	FP	1.0	1.0	0.8			
														quartz	FP	1.9	1.2	0.8			
														quartz	FP	1.0	1.0	0.3			
														quartz	FP	1.4	0.7	0.6			
														quartz	FP	1.5	1.4	0.6			
														quartz	FP	1.3	1.2	0.5			
														quartz	FP	1.0	1.0	0.7			
														quartzite	FP	1.5	1.5	0.5			
														quartzite	FP	2.3	2.2	0.5			
														quartzite	FP	1.3	0.9	0.5			
														quartzite	FP	1.2	1.2	0.7			
													grey	silcrete	B	2.9	0.9	0.5	usewear		
													grey	silcrete	B	1.4	0.9	0.4	edgewear		broken blade
													pink	silcrete	BB(SCR)	1.8	1.0	0.5	retouch/usewear		
													pink	silcrete	C	2.7	4.9	1.8			
													grey	silcrete	C	3.4	2.7	1.1			
													grey	silcrete	C	3.0	4.0	3.5			
													grey	silcrete	C	2.0	1.6	1.5			
													pink	silcrete	C	2.4	4.3	3.0			
													pink	silcrete	C	2.9	2.9	2.0			
													grey	silcrete	C	3.7	1.9	1.3			
													grey	silcrete	C	3.6	4.8	2.1		5	
													grey	silcrete	C	2.7	3.9	1.7			
													pink	silcrete	C	5.1	3.6	2.4			
													grey	silcrete	C	4.0	3.4	2.4			
													grey	silcrete	C	5.7	4.5	2.5			
													grey	silcrete	C	2.9	2.3	1.8			
													yellow	silcrete	F	1.8	0.9	0.3			
													yellow	silcrete	F	2.3	2.0	0.5			
													grey	silcrete	F	4.3	2.9	0.8		5	
													grey	silcrete	F	2.5	1.0	0.5			snapped
													grey	silcrete	F	3.9	4.0	1.2			
													red	silcrete	F	1.9	2.4	0.7			
													grey	silcrete	F	4.3	2.8	1.3			
													grey	silcrete	F	2.2	2.2	0.7			
													grey	silcrete	F	1.4	1.4	0.5			
													grey	silcrete	F	2.5	1.8	0.7			
													grey	silcrete	F	1.1	1.5	0.5			
													pink	silcrete	F	1.9	1.6	0.4			
													pink	silcrete	F	1.4	0.9	0.3			
													grey	silcrete	F	2.6	2.5	0.8			
													grey	silcrete	F	3.0	3.3	1.0			
													pink	silcrete	F	2.2	2.4	0.9			
													grey	silcrete	F	2.1	3.0	0.5			
													pink	silcrete	F	2.1	2.7	1.1			
													pink	silcrete	F	1.5	1.2	0.5			
													grey	silcrete	F	1.0	1.4	0.2			
													grey	silcrete	F	3.8	1.8	0.5			
													grey	silcrete	F	1.8	2.5	0.9			
													grey	silcrete	F	1.3	1.8	0.4			
													yellow	silcrete	F	2.4	1.7	0.6			
													grey	silcrete	F	1.4	1.6	0.3			
													grey	silcrete	F	1.6	1.2	0.4			
													yellow	silcrete	F	2.5	2.5	0.6			
													grey	silcrete	F	2.3	1.5	0.5			
													grey	silcrete	F	5.5	3.0	1.7			
													grey	silcrete	F	4.6	2.7	1.0	retouch		
													grey	silcrete	F	3.0	2.5	1.3			
													pink	silcrete	F	3.3	3.2	1.0			
													grey	silcrete	F	1.2	1.8	0.7			
													grey	silcrete	F	3.3	2.0	0.8			
													pink	silcrete	F	2.0	1.2	1.0		20	

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	F	3.2	2.4	1.2			
													grey	silcrete	F	2.7	2.2	0.8			
													grey	silcrete	F	1.3	1.1	0.4			
													red	silcrete	F	3.7	2.8	0.7			
													pink	silcrete	FP	1.5	1.3	0.4			
													grey	silcrete	FP	1.3	1.0	0.4			
													grey	silcrete	FP	1.4	1.3	0.5			
													grey	silcrete	FP	2.3	1.4	0.8			
													grey	silcrete	FP	2.1	1.6	1.0			
													pink	silcrete	FP	2.3	1.2	0.7			
													yellow	silcrete	FP	2.3	1.3	0.4			
													grey	silcrete	FP	1.9	1.9	0.6			
													grey	silcrete	FP	1.5	1.5	0.7			
													grey	silcrete	FP	1.5	1.0	0.2			
													grey	silcrete	FP	3.6	3.4	2.0			large inclusions
													grey	silcrete	FP	3.1	1.8	0.8		20	
													pink	silcrete	FP	1.8	1.7	0.5			
													grey	silcrete	FP	2.4	1.4	0.9			
													pink	silcrete	FP	2.0	1.4	0.6			
													grey	silcrete	FP	1.7	1.1	0.6			
													yellow	silcrete	FP	2.0	1.6	0.6			
													pink	silcrete	FP	1.9	1.4	0.8			
													grey	silcrete	FP	1.9	1.4	0.5			
													grey	silcrete	FP	4.4	2.8	1.6			
													yellow	silcrete	FP	2.1	1.6	1.0			
													grey	silcrete	FP	2.3	1.6	0.7	retouch/usewear		
													grey	silcrete	FP	2.5	2.3	0.8			
													grey	silcrete	FP	1.5	1.4	0.7			
													grey	silcrete	FP	1.2	1.0	0.7			
													pink	silcrete	FP	1.3	1.1	0.3			
													grey	silcrete	FP	1.6	1.5	1.2			
													pink	silcrete	FP	1.3	1.0	0.3			
													pink	silcrete	FP	2.4	1.5	0.5			
													pink	silcrete	FP	1.4	1.3	0.5			
													grey	silcrete	FP	1.0	0.8	0.3			
													grey	silcrete	FP	1.0	0.8	0.2			
													grey	silcrete	FP	1.5	1.1	0.3			
													grey	silcrete	FP	1.3	1.0	0.3			
													grey	silcrete	FP	1.9	1.5	1.1			
													pink	silcrete	FP	5.3	3.6	2.0			
													pink	silcrete	FP	5.2	3.2	1.0			
													grey	silcrete	FP	2.7	2.3	1.4			
													grey	silcrete	FP	1.7	1.5	0.3			
													grey	silcrete	FP	1.5	1.0	0.6			
													pink	silcrete	FP	1.4	1.0	0.7			
													grey	silcrete	FP	2.5	1.5	0.6			
													grey	silcrete	FP	1.6	1.0	1.0			
													grey	silcrete	FP	2.0	1.5	0.6			
													yellow	silcrete	FP	2.1	1.7	0.6			
													pink	silcrete	FP	1.2	1.3	0.3			
													pink	silcrete	FP	1.4	1.3	0.8			
													grey	silcrete	FP	2.1	2.0	0.5			
													grey	silcrete	FP	1.6	1.2	0.4			
													grey	silcrete	FP	2.5	1.5	0.6			
													grey	silcrete	FP	1.2	1.1	0.4			
													grey	silcrete	FP	1.0	1.0	0.2			
													grey	silcrete	FP	2.4	1.4	0.5			
													pink	silcrete	FP	1.4	0.9	0.2			
													grey	silcrete	FP	4.5	3.1	1.0			
													grey	silcrete	FP	4.6	4.2	1.3			
													grey	silcrete	FP	2.4	2.4	0.7			
													grey	silcrete	FP	1.5	1.1	0.5			
													grey	silcrete	FP	2.1	1.5	0.6			
													grey	silcrete	FP	2.8	1.3	0.5			
													grey	silcrete	FP	2.2	1.4	1.3			
													pink	silcrete	FP	1.3	0.7	0.3			
													pink	silcrete	FP	4.2	2.5	1.1			
													red	silcrete	FP	1.7	1.4	0.3			
													grey	silcrete	FP	2.1	1.5	0.3			
													grey	silcrete	FP	1.3	1.2	0.2			
													grey	silcrete	FP	1.1	0.7	0.2			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	1.2	1.1	0.2			
													pink	silcrete	FP	1.0	0.9	0.3			
													pink	silcrete	FP	3.7	2.8	0.6			
													grey	silcrete	FP	1.5	1.5	0.6			
													pink	silcrete	FP	2.0	1.6	0.8			
													grey	silcrete	FP	1.4	1.3	0.6			
													grey	silcrete	FP	1.3	1.2	0.7			
													grey	silcrete	FP	2.1	2.0	0.2			
													grey	silcrete	FP	1.2	1.0	0.2			
													grey	silcrete	FP	1.7	1.5	1.0			
													grey	silcrete	FP	1.8	1.7	0.4			
													grey	silcrete	FP	1.9	1.2	0.4			
													grey	silcrete	FP	1.5	1.0	0.4			
													grey	silcrete	FP	2.7	1.3	0.7	edgewear		
													grey	silcrete	FP	2.0	1.6	0.6			
													pink	silcrete	FP	1.3	0.9	0.3			
													pink	silcrete	FP	1.3	0.9	0.2			
													grey	silcrete	FP	3.1	1.9	1.1			
													pink	silcrete	FP	2.4	1.8	0.8			
													pink	silcrete	FP	1.5	1.0	0.3			
													grey	silcrete	FP	1.8	1.3	0.7			
													pink	silcrete	FP	1.8	1.0	0.9			
													grey	silcrete	FP	2.5	1.4	0.7			
													grey	silcrete	FP	2.6	2.5	0.8			
													grey	silcrete	FP	5.7	3.2	2.2			
													grey	silcrete	FP	1.9	1.4	0.8			
													grey	silcrete	FP	3.0	2.0	0.7			
													grey	silcrete	FP	2.5	1.8	1.5			
													grey	silcrete	FP	2.2	1.5	0.7			
													pink	silcrete	FP	2.0	1.5	0.6		50	
													pink	silcrete	FP	2.8	1.7	0.5			
													red	silcrete	FP	1.9	1.0	0.4			
													pink	silcrete	FP	3.9	2.6	1.4			
													pink	silcrete	FP	1.3	1.0	0.3			
													grey	silcrete	FP	4.4	2.8	0.9			
													grey	silcrete	FP	3.3	2.9	2.0			
													pink	silcrete	FP	3.0	2.3	1.0			
													pink	silcrete	FP	2.9	2.0	0.8			
													pink	silcrete	FP	3.4	3.1	0.9			
													grey	silcrete	FP	1.6	1.6	0.6			
													grey	silcrete	FP	2.0	1.5	0.6			
													pink	silcrete	FP	2.2	1.9	0.5			
													grey	silcrete	FP	1.8	1.1	0.7			
													grey	silcrete	FP	2.2	1.8	0.9			
													grey	silcrete	FP	4.3	2.8	0.9			
													grey	silcrete	FP	1.5	1.1	0.4			
													grey	silcrete	FP	3.2	3.0	0.9			
													grey	silcrete	FP	2.9	2.4	0.5			
													grey	silcrete	FP	3.3	2.1	1.0			
													pink	silcrete	FP	2.4	2.4	1.0			
													pink	silcrete	FP	5.0	4.6	1.8			
													grey	silcrete	FP	2.0	1.7	0.4			
													grey	silcrete	FP	2.2	2.1	1.6			
													grey	silcrete	FP	2.9	2.2	1.0			
													pink	silcrete	FP	2.2	2.0	0.9			
													grey	silcrete	FP	3.4	2.2	0.5			
													pink	silcrete	FP	4.1	3.0	2.5			weathered
													pink	silcrete	BB(SCR)	3.6	2.0	1.0	retouch		
														Volcanic	FRP	8.5	6.0	4.9		50	
44	46 cont (S side of Creek cont.)				flat	vehicle track		80	90	on exposed track			yellow/grey	chert	F	6.2	4.2	1.3		30	
													red	chert	FP	1.9	1.1	0.5			
													grey	chert	FP	4.2	1.9	0.9			
													white	chert	FP	1.7	1.3	0.4			
													cream	chert	FP	2.9	1.3	1.3			
													grey	FGS	F	4.1	3.9	1.1			
													grey	FGS	FP	2.9	2.5	1.0			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													pink	FGS	FP	3.6	3.4	1.9			
													pink	FGS	FP	2.6	1.9	1.3			
													yellow/red	mudstone	C	3.0	3.6	1.8		20	
													orange	mudstone	C	3.0	2.6	1.2		30	
													yellow	mudstone	F	4.0	4.0	1.6		20	
													red	mudstone	F	1.2	2.0	0.5			
													orange	mudstone	F	3.5	2.5	0.7	retouch	5	
													cream	mudstone	F	2.3	2.0	0.6			
													orange	mudstone	FP	3.8	2.8	0.7			
													cream	mudstone	FP	1.2	1.2	0.4			
													yellow	mudstone	FP	1.4	1.3	0.6			
													orange	mudstone	FP	1.3	0.9	0.2			
													orange	mudstone	FP	2.1	1.5	0.3		20	
													red	mudstone	FP	3.0	2.5	1.2		50	
													yellow	mudstone	FP	2.2	1.3	0.5			
													yellow	mudstone	FP	1.5	1.3	0.6			
													brown	petrified wood	FP	2.4	1.5	0.6			
														quartz	FP	1.6	1.5	1.0			
														quartz	FP	2.3	1.3	0.9			
														quartz	FP	1.6	0.9	0.4			
														quartz	FP	1.2	0.7	0.7			
														quartz	FP	1.8	1.5	0.5			
														quartz	FP	1.3	1.1	0.9			
													grey	silcrete	C	2.1	3.5	2.3			
													grey	silcrete	C	3.4	2.9	2.9			
													grey	silcrete	C	3.9	2.4	1.0			
													pink	silcrete	C	2.0	4.0	4.2			
													grey	silcrete	C	3.5	3.1	2.9			
													grey	silcrete	C	4.2	3.7	3.0			
													grey	silcrete	C	1.8	2.2	1.4			
													grey	silcrete	C	2.8	2.6	1.3			
													grey	silcrete	C	3.5	3.8	2.5			
													grey	silcrete	C	2.2	6.0	4.4			
													grey	silcrete	F	2.2	1.7	0.7			
													grey	silcrete	F	1.6	1.6	0.4			
													grey	silcrete	F	4.2	2.8	1.0			
													pink	silcrete	F	2.5	2.1	0.6			
													grey	silcrete	F	4.7	4.3	1.5			
													pink	silcrete	F	2.6	2.0	0.7			
													red	silcrete	F	4.4	3.2	1.0			
													yellow	silcrete	F	5.5	2.9	2.0			
													pink	silcrete	F	2.5	3.5	0.8			
													pink	silcrete	F	3.5	2.5	0.8	retouch		
													pink	silcrete	F	2.5	2.2	0.7			
													grey	silcrete	F	2.2	2.2	0.6			
													grey	silcrete	F	2.6	2.9	0.7			
													grey	silcrete	F	2.8	2.0	1.0			
													grey	silcrete	F	3.3	1.9	1.0			
													grey	silcrete	F	4.6	2.3	0.9			
													grey	silcrete	F	2.4	2.4	0.6			
													pink	silcrete	F	1.5	1.4	0.4			
													white	silcrete	F	2.0	1.3	0.6			
													grey	silcrete	FP	1.9	1.6	0.4			
													pink	silcrete	FP	1.2	0.6	0.3			
													yellow	silcrete	FP	2.7	1.3	0.6			
													grey	silcrete	FP	3.2	2.1	1.0			
													grey	silcrete	FP	3.0	2.2	1.0			
													yellow	silcrete	FP	4.2	2.1	1.3			
													grey	silcrete	FP	2.7	1.8	1.1			
													yellow	silcrete	FP	2.6	1.3	0.5			
													red	silcrete	FP	2.6	1.7	0.5	edgewear		
													pink	silcrete	FP	2.9	2.5	1.1			
													grey	silcrete	FP	4.3	3.6	1.5			
													red	silcrete	FP	2.2	2.0	0.8			
													yellow	silcrete	FP	3.2	1.8	0.9			
													grey	silcrete	FP	3.2	3.0	1.6			
													grey	silcrete	FP	2.9	2.2	1.0			
													grey	silcrete	FP	4.1	3.6	2.0			
													yellow	silcrete	FP	6.0	4.6	1.9			
													grey	silcrete	FP	3.5	2.8	1.0			
													grey	silcrete	FP	5.1	3.0	2.0			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	2.9	1.8	0.8			
													pink	silcrete	FP	4.5	3.2	1.0			
													grey	silcrete	FP	1.6	1.0	0.3			
													grey	silcrete	FP	2.4	2.0	1.0			
													grey	silcrete	FP	3.4	2.7	1.0			
													grey	silcrete	FP	3.5	1.8	0.8	retouch		
													grey	silcrete	FP	8.0	5.2	1.5			
													grey	silcrete	FP	4.9	3.6	1.5			
													grey	silcrete	FP	2.4	2.3	1.1			
													grey	silcrete	FP	3.5	2.3	1.7			
													pink	silcrete	FP	2.5	1.8	1.1			
													grey	silcrete	FP	2.0	1.9	0.5			
													yellow	silcrete	FP	2.8	1.6	0.7			
													pink	silcrete	FP	2.7	1.2	0.2			
													grey	silcrete	FP	1.6	1.4	0.8			
													red	silcrete	FP	1.6	1.5	0.6			
													grey	silcrete	FP	1.7	1.7	1.0			
													grey	silcrete	FP	2.0	1.8	0.7			
													grey	silcrete	FP	2.1	0.8	0.9			
													grey	silcrete	FP	12.0	6.0	2.2			
													pink	silcrete	FP	4.4	2.4	1.5			
													pink	silcrete	FP	2.3	2.0	1.0			
													yellow	silcrete	FP	3.0	2.5	1.1			
													pink	silcrete	FP	2.5	2.5	1.6			
													pink	silcrete	FP	2.3	1.8	1.1			
													grey	silcrete	FP	3.5	2.5	1.3			
													grey	silcrete	FP	2.5	2.0	0.5			
													grey	silcrete	FP	2.2	1.5	0.8			
													grey	silcrete	FP	2.5	1.7	1.2			
													grey	silcrete	FP	3.6	3.3	1.7			
													grey	silcrete	FP	1.9	1.1	0.4			
													grey	silcrete	FP	3.0	2.7	2.2			
													grey	silcrete	FP	3.5	3.1	1.6			
													white	silcrete	FP	2.2	2.1	0.6			
													grey	silcrete	FP	2.4	1.7	0.5			
													grey	silcrete	FP	3.8	2.7	0.9			
													pink	silcrete	FP	3.0	1.3	1.5			
													grey	silcrete	FP	3.6	1.5	0.5	retouch		
													grey	silcrete	FP	2.4	2.0	0.7			
													grey	silcrete	FP	3.1	1.4	1.0			
													grey	silcrete	FP	2.2	2.0	0.9			
													grey	silcrete	FP	3.8	3.5	0.8			
													cream	silcrete	FP	3.2	3.1	1.0			
													pink	silcrete	FP	1.6	1.4	0.7			
													grey	silcrete	FP	2.3	1.5	0.5			
													pink	silcrete	FP	1.7	1.3	0.4	retouch		
													pink	silcrete	FP	2.0	1.8	0.6			
44	46 N of Creek											107	cream	chert	FP	0.8	0.8	0.2			
													orange	chert	FP	1.3	1.2	0.4			
													grey/pink	chert	FP	1.9	1.7	0.8			
													grey/pink	FGS	FP	4.1	4.1	1.8			
													yellow	mudstone	FP	2.3	2.0	1.0			
													grey	mudstone	FP	1.6	1.5	0.4			
													cream	mudstone	FP	1.9	1.2	0.4			
													yellow	mudstone	FP	1.3	1.2	0.5			
														petrified wood	F	2.2	1.7	0.6			
														porcellanite	FP	3.5	1.8	1.0			
														quartz	FP	1.9	1.5	0.8			
														quartz	FP	1.4	1.3	0.9			
														quartz	FP	0.8	0.8	0.4			
														quartz	FP	1.3	0.7	0.5			
														quartz	FP	1.9	0.9	0.4			
														quartz	FP	1.3	1.0	0.3			
														quartz	FP	1.4	1.1	0.3			
														quartz	FRP	5.0	3.8	2.0			
														quartzite	FP	1.9	1.4	0.8			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	BB	3.9	1.4	0.7	retouch/usewear		
													grey	silcrete	C	6.7	4.3	3.9			
													grey	silcrete	C	2.5	2.8	1.8			
													pink	silcrete	F	1.4	1.4	0.3			
													grey	silcrete	F	1.8	2.6	0.5			
													grey	silcrete	F	2.2	1.5	0.8			
													pink	silcrete	F	2.3	1.5	0.6	retouch		
													grey	silcrete	F	3.6	2.2	1.1			
													pink	silcrete	F	3.0	3.3	1.0			
													red	silcrete	F	1.5	2.5	0.5			
													grey	silcrete	F	1.2	0.9	0.3			
													red	silcrete	F	2.6	1.5	0.4			
													grey	silcrete	F	2.7	3.0	1.0			
													grey	silcrete	F	1.6	2.0	0.6			
													grey	silcrete	F	1.3	0.9	0.4			
													orange	silcrete	F	2.5	2.1	0.7	retouch/edge wear		
													grey	silcrete	F	2.1	1.7	0.5			
													grey	silcrete	F	2.2	0.9	0.3	retouch/edge wear		
													yellow	silcrete	FP	2.4	1.7	0.9			
													grey	silcrete	FP	2.1	1.8	0.4			
													grey	silcrete	FP	2.5	1.3	0.7			
													grey	silcrete	FP	1.2	1.0	0.4			
													grey	silcrete	FP	1.5	0.8	0.3			
													grey	silcrete	FP	1.5	1.0	0.3			
													red	silcrete	FP	1.8	1.8	0.7			
													pink	silcrete	FP	1.6	1.5	0.7			
													grey	silcrete	FP	2.0	1.4	1.1			
													grey	silcrete	FP	1.8	1.0	0.5			
													grey	silcrete	FP	1.5	1.5	1.0			
													yellow	silcrete	FP	2.2	1.4	0.7			
													grey	silcrete	FP	1.1	0.9	0.2			
													grey	silcrete	FP	2.3	1.7	0.7			
													grey	silcrete	FP	2.4	2.1	0.6			
													grey	silcrete	FP	1.7	1.3	0.4			
													pink	silcrete	FP	1.4	1.4	0.5			
													pink	silcrete	FP	3.9	1.9	1.3			
													grey	silcrete	FP	1.7	1.6	0.8			
													pink	silcrete	FP	3.5	3.2	0.9			
													pink	silcrete	FP	2.9	2.7	1.1	retouch		
													grey	silcrete	FP	1.5	1.3	0.3			
													grey	silcrete	FP	1.9	1.9	0.5			
													grey	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	1.8	1.4	0.6			
													red	silcrete	FP	1.6	1.3	0.3			
													red	silcrete	FP	1.6	1.0	0.2			
													red	silcrete	FP	1.7	1.2	0.6			
													pink	silcrete	FP	2.1	1.4	0.9			
													pink	silcrete	FP	2.1	1.2	1.1			
													pink	silcrete	FP	2.9	1.8	1.1			
													grey	silcrete	FP	1.3	1.3	0.3			
													grey	silcrete	FP	1.7	1.5	0.5			
													pink	silcrete	FP	2.4	1.2	0.5			
													pink	silcrete	FP	2.1	2.0	1.4			
													red	silcrete	FP	1.8	1.4	0.7			
													grey	silcrete	FP	1.3	0.7	0.3			
													grey	silcrete	FP	2.4	1.3	0.7			
													orange	silcrete	FP	1.4	1.2	0.3			
													pink	silcrete	FP	1.5	1.2	0.7			
													red	silcrete	FP	0.9	0.8	0.2			
													pink	silcrete	FP	1.2	1.0	0.5			
													grey	silcrete	FP	2.3	1.4	0.6			
													pink	silcrete	FP	1.1	0.7	0.3			
													red	silcrete	FP	1.0	0.6	0.6			
													grey	silcrete	FP	3.0	1.7	0.5			
													red	silcrete	FP	1.1	0.8	0.3			
													red	silcrete	FP	1.2	0.8	0.2			
													grey	silcrete	FP	2.8	1.2	1.4			
													grey	silcrete	FP	1.6	1.1	0.4			
													grey	silcrete	FP	1.0	0.8	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													orange	silcrete	FP	2.9	1.7	0.9			
													grey	silcrete	FP	2.2	2.3	0.6	retouch/edge wear		
													grey	silcrete	FP	1.8	0.9	0.6			
													grey	silcrete	FP	1.7	1.7	1.1			
													grey	silcrete	FP	1.5	1.5	0.7			
													grey	silcrete	FP	1.4	1.2	0.2			
													grey	silcrete	FP	1.4	1.1	0.3			
													grey	silcrete	FP	1.1	1.0	0.2			
													grey	silcrete	FP	1.2	1.0	0.2			
													grey	silcrete	FP	1.5	1.1	0.4			
													grey	silcrete	FP	1.7	1.0	0.2			
													grey	silcrete	FP	1.3	1.2	0.4			
													grey	silcrete	FP	1.8	0.8	0.2			
													grey	silcrete	FP	1.4	0.6	0.2			
													grey	silcrete	FP	1.3	1.3	0.2			
													red	silcrete	FP	1.7	1.3	0.3			
													red	silcrete	FP	1.3	1.3	0.1			
													red	silcrete	FP	1.0	0.5	0.2			
														Volcanic	FP	7.1	5.5	2.1			
44	47			OCS	hillslope	vehicle track	40x3 (ie. over approx 40m of track)	100	40-95	running down track down slope to gully	track is used	14	white/red	mudstone	FP	3.5	2.0	1.0			
											artefacts have been dispersed by water action and erosion on the track running down to gully where concentration of artefacts at site 46		grey	silcrete	F	2.6	3.5	0.8			
													pink	silcrete	F	3.5	4.5	0.8		50 (red)	
													grey	silcrete	F	2.0	1.5	0.5			
													pink	silcrete	F	2.5	4.0	1.5			
													grey	silcrete	FP	2.0	1.0	0.8			
													pink	silcrete	FP	1.5	1.5	0.5			
													pink	silcrete	FP	3.5	3.5	1.5			
													grey	silcrete	FP	2.0	1.5	1.5			
													grey	silcrete	FP	1.0	1.0	0.8			
													grey	silcrete	FP	4.0	2.0	2.0			
													grey	silcrete	FP	2.0	1.0	0.8			
													yellow	silcrete	FP	3.5	2.0	1.0			
													grey	silcrete	FP	2.5	2.5	2.0			
44	48			OCS	hillslope	track	10x3 (ie. over approx 10m of track)	100	80-90	on track and around ants nest		5	dark pink	silcrete	F	1.5	1.8	0.6			
						70m down slope from site 47							grey	silcrete	FP	1.2	1.0	0.5			
													grey	silcrete	FP	2.6	2.6	0.8			
													grey	silcrete	FP	1.3	1.0	0.5			
													grey	silcrete	FP	2.0	2.0	1.3			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
44	49			OCS	hillslope	track	4x2	80	80-90	on track and into grass off track		5	red	mudstone	FP	1.9	1.8	0.7			weathered
						approx 53m down slope from 48							pink	silcrete	F	2.0	1.5	0.5			
													grey	silcrete	FP	1.3	1.0	1.0			
													grey	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	3.5	2.5	1.5			
44	50			OCS	lower hillslope to gully	on track and in exposures at gully approx 40m east of track		80-90	80-90			853	pink	chert	F	5.0	3.5	1.5			
						approx 42m downslope of 49							cream/pink	chert	F	4.6	4.3	1.9			weathered
													white	chert	F	0.9	0.8	0.2			
													grey	chert	FP	1.5	1.5	0.8			
													orange/brown translucent	chert	FP	3.0	1.3	0.4			
													grey	chert	FP	2.1	1.5	0.5			
													cream/grey banded	chert	FP	2.7	1.5	0.8			
													translucent	chert	FP	1.9	1.7	1.0			
													white	chert	FP	1.3	0.6	0.5			
													translucent	chert	FP	1.0	0.6	0.2			
													translucent	chert	FP	1.6	1.5	0.3			
													grey	chert	FP	1.9	1.5	0.9			
													black	chert	FP	1.5	1.1	0.4			
													grey	chert	FP	1.8	1.2	0.3			
													grey	chert	FP	3.8	3.6	1.2			
													cream	chert	FP	2.5	2.0	0.9			
													red	FGS	C	3.2	4.5	3.4			
													grey	FGS	F	4.9	4.4	1.6			
													red	FGS	F	4.2	3.0	0.8			
													pink	FGS	F	4.8	4.7	2.2			
													pink	FGS	FP	2.4	1.5	1.0			
													pink	FGS	FP	3.4	2.2	1.4			
													pink	FGS	FRP	6.3	5.7	3.3			
													pink	FGS	FRP	5.8	5.3	2.6			
													red	FGS	FRP	5.0	5.0	3.8			
													yellow/red	mudstone	F	3.0	1.8	1.2		30	
													orange	mudstone	F	2.8	3.0	1.2			
													orange/pink/red	mudstone	F	3.2	2.2	1.0		15 (red on platform)	
													yellow	mudstone	F	1.8	2.2	0.5			
													orange	mudstone	F	2.0	2.6	0.7		20 (red)	
													red	mudstone	F	3.1	2.3	0.7			
													yellow	mudstone	F	0.8	1.0	0.5			
													yellow	mudstone	F	1.2	1.9	1.0			
													red	mudstone	F	1.4	2.0	0.7			
													cream	mudstone	F	1.8	2.7	0.8		50	
													red	mudstone	F	1.9	1.7	0.6			
													grey/red	mudstone	F	3.1	3.5	1.3		20	
													grey	mudstone	F	2.4	2.0	0.5			
													red	mudstone	F	1.2	1.0	0.3			
													cream	mudstone	F	0.7	0.9	0.2			
													white	mudstone	F	1.2	1.2	0.3			
													yellow	mudstone	F	0.9	0.9	0.2			
													red	mudstone	F	1.0	1.5	0.2			
													pink	mudstone	F	1.8	0.8	0.5			
													yellow	mudstone	F	3.1	3.4	0.8			weathered
													yellow	mudstone	F	2.4	2.2	0.8			
													grey	mudstone	F	1.7	1.5	0.7			
													red	mudstone	F	2.5	1.8	0.7		30	
													cream	mudstone	F	2.0	1.7	0.4			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													yellow	mudstone	F	1.6	1.1	0.5			
													yellow	mudstone	F	1.8	1.4	0.4			
													cream	mudstone	F	1.6	0.7	0.3			
													pink	mudstone	F	1.0	1.2	0.3			
													pink	mudstone	F	1.6	1.9	0.4			
													red	mudstone	F	1.3	1.3	0.3			
													yellow	mudstone	F	2.1	2.3	0.3			
													cream	mudstone	F	1.5	1.2	0.3			
													cream	mudstone	F	1.5	1.5	0.5			
													cream	mudstone	F	1.4	1.6	0.4			
													cream	mudstone	F	2.5	1.7	0.7			
													yellow	mudstone	F	1.4	1.8	0.6			
													red	mudstone	F	2.1	1.9	0.5			
													red	mudstone	F	1.2	1.4	0.2			
													red	mudstone	FP	2.0	1.0	0.5			
													orange	mudstone	FP	3.5	3.0	1.4			
													pink/red	mudstone	FP	4.8	3.7	1.8			
													orange	mudstone	FP	1.9	1.5	0.4		20	
													red	mudstone	FP	2.8	1.6	0.4	retouch/edge wear		
													red	mudstone	FP	1.9	1.5	0.3			
													yellow	mudstone	FP	1.7	1.4	0.3			
													orange	mudstone	FP	1.7	1.7	0.4			
													red	mudstone	FP	1.7	1.1	0.5			
													red	mudstone	FP	1.6	1.5	0.5			
													yellow	mudstone	FP	2.0	1.0	2.1			
													yellow	mudstone	FP	1.7	0.8	0.6			
													orange	mudstone	FP	1.5	1.2	0.5			
													cream/red	mudstone	FP	3.5	2.7	1.1		40	
													red	mudstone	FP	2.3	2.3	1.3			
													grey	mudstone	FP	1.4	1.3	0.4			
													cream/red	mudstone	FP	1.4	0.8	0.5			
													cream	mudstone	FP	0.9	0.9	0.2			
													yellow	mudstone	FP	1.4	1.0	0.7			
													orange	mudstone	FP	0.9	0.8	0.3			
													grey	mudstone	FP	3.3	2.9	1.2			
													red	mudstone	FP	1.7	1.3	0.4			
													pink	mudstone	FP	1.8	1.0	0.3			
													grey	mudstone	FP	2.0	1.5	0.5			
													cream	mudstone	FP	1.7	1.6	0.5			
													yellow	mudstone	FP	2.2	2.0	0.7		10 - red	
													orange	mudstone	FP	1.2	1.0	0.9			
													red	mudstone	FP	2.7	2.3	1.0		50	
													cream	mudstone	FP	2.7	1.4	0.8			weathered
													cream	mudstone	FP	2.0	1.4	0.5			
													yellow	mudstone	FP	1.6	1.3	0.9			
													red	mudstone	FP	1.5	1.0	0.7		10	
													grey/red	mudstone	FP	2.1	1.1	0.6		5	
													red	mudstone	FP	1.4	1.2	0.8			
													pink	mudstone	FP	2.1	1.7	0.6			
													grey/red	mudstone	FP	1.7	1.4	0.7			
													yellow	mudstone	FP	1.4	1.1	0.5			
													cream	mudstone	FP	1.7	1.0	0.4			
													grey	mudstone	FP	1.8	1.5	0.3			
													pink	mudstone	FP	2.2	1.6	0.8			
													grey	mudstone	FP	1.9	1.5	0.4			
													orange	mudstone	FP	1.4	1.2	0.4			
													grey	mudstone	FP	1.2	0.9	0.2			
													pink	mudstone	FP	1.8	1.1	0.9			
													cream	mudstone	FP	1.5	1.3	0.6	retouch	20	
													grey	mudstone	FP	1.8	0.8	0.4			
													grey	mudstone	FP	1.3	1.0	0.3			
													orange	mudstone	FP	1.8	1.3	0.3			
													red	mudstone	FP	1.2	1.0	0.3			
													orange	mudstone	FP	1.3	1.0	0.3			
													red	mudstone	FP	2.0	0.9	0.5			
													cream	mudstone	FP	1.4	1.2	0.5			
													red	mudstone	FP	1.3	0.6	0.3			
													cream	mudstone	FP	1.0	0.0	0.2			
													red	mudstone	FP	1.3	0.6	0.4			
													yellow	mudstone	FP	1.5	1.2	0.5			
													pink	mudstone	FP	2.8	2.2	1.3			weathered

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													cream/red	mudstone	FP	2.2	1.2	0.5			
													grey	mudstone	FP	2.2	2.0	0.9			
													grey	mudstone	FP	2.8	1.0	0.2			
													cream	mudstone	FP	1.2	1.0	0.4			
													yellow	mudstone	FP	1.2	1.2	0.5			
													pink	mudstone	FP	1.1	1.0	0.2			
													yellow	mudstone	FP	2.3	2.1	0.5			
													red	mudstone	FP	2.6	1.7	0.4			
													orange	mudstone	FP	2.5	2.0	0.3			
													cream	mudstone	FP	2.1	1.5	0.5			
													cream	mudstone	FP	1.6	0.9	0.3			
													red	mudstone	FP	1.7	1.3	0.6			
													cream	mudstone	FP	2.1	1.0	0.5			
													grey	mudstone	FP	1.5	1.1	0.5			
													yellow	mudstone	FP	2.6	1.7	0.5			
													cream/yellow	mudstone	FP	5.2	4.0	2.7			
													yellow	mudstone	FP	2.9	1.8	1.1			
													pink	mudstone	FP	2.6	1.5	0.8			
													yellow	mudstone	FP	2.0	1.6	0.3		5	
													yellow	mudstone	FP	1.4	1.2	0.4			
													pink	mudstone	FP	3.0	1.8	1.7			
													grey/yellow	mudstone	FP	2.6	1.6	0.8			
													yellow	mudstone	FP	0.8	0.8	0.2			
													yellow	mudstone	FP	2.4	1.3	0.5		50	
														volcanic	FRP	7.5	5.2	4.4			
														quartz	FP	1.5	0.7	0.5			
														quartz	FP	1.8	1.2	0.7			
														quartz	FP	1.3	1.0	0.2			
														quartz	FP	2.0	1.7	0.9			
														quartz	FP	1.5	1.2	0.8			
														quartz	FP	2.0	1.9	0.5			
														quartz	FP	1.2	1.1	0.2			
														quartz	FP	1.6	0.9	0.5			
														quartz	FP	1.5	1.4	0.6			
														quartz	FP	2.0	1.7	1.1			
														quartz	FP	1.5	1.3	0.7			
														quartz	FP	1.8	0.8	0.4			
														quartz	FP	1.1	0.7	0.5			
														quartz	FP	1.2	1.2	0.4			
														quartzite (rose)	FP	2.2	2.2	0.5			
													grey	silcrete	A	2.0	1.5				
													grey	silcrete	A	3.5	1.3				
													grey	silcrete	A	2.3	2.0				
													grey	silcrete	A	1.0	1.0				
													grey	silcrete	A	2.5	2.5				
													yellow	silcrete	A	8.0	4.0			50 (visible)	
													grey	silcrete	A	2.0	1.0				
													grey	silcrete	A	1.0	1.0				
													grey	silcrete	A	1.0	1.0				
													pink	silcrete	BB	2.7	1.6	0.5	retouch		
													grey	silcrete	BB	1.9	1.2	0.5	retouch		broken edge
													grey	silcrete	BB	1.4	0.9	0.4	retouch		
													grey	silcrete	C	2.5	3.6	2.6			
													yellow/grey	silcrete	C	5.5	4.3	3.8			multifaceted
													yellow/pink/grey	silcrete	C	6.5	10.4	6.5			single platform
													pink	silcrete	C	5.8	6.2	3.0			
													grey	silcrete	C	11.0	12.5	7.0	edgewear	20	
													grey	silcrete	C	3.7	2.5	2.0			
													grey	silcrete	C	3.7	1.7	1.3			
													grey	silcrete	C	3.0	3.1	2.0			
													pink	silcrete	C	3.3	4.5	3.9		15 (red)	
													pink	silcrete	C	2.3	4.0	3.5			
													grey	silcrete	C	3.2	3.0	2.6			
													grey	silcrete	C	4.3	5.9	4.2			
													grey	silcrete	C	5.1	4.1	2.3			multifaceted
													yellow	silcrete	C	4.5	4.3	2.3			
													yellow	silcrete	C	6.2	5.7	4.9			
													pink	silcrete	C	3.2	3.6	2.1			
													pink	silcrete	C	3.2	3.4	3.2			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	C	2.9	4.0	3.6		20 - red	
													grey	silcrete	C	4.2	3.8	2.4			
													yellow	silcrete	F	2.2	2.0	0.3			
													grey	silcrete	F	2.0	2.0	0.5			
													grey/pink	silcrete	F	5.0	5.0	3.0			
													grey	silcrete	F	1.8	2.4	0.4			
													grey	silcrete	F	4.1	2.6	0.9			
													grey	silcrete	F	2.5	1.5	0.4			
													pink	silcrete	F	3.0	3.7	0.8	fine retouch both sides		
													yellow/grey	silcrete	F	2.5	3.7	0.8			
													pink	silcrete	F	4.0	3.9	0.8			weathered
													grey	silcrete	F	2.8	2.2	0.8	edgewear one side		
													yellow/grey	silcrete	F	1.1	2.3	0.5			
													grey	silcrete	F	1.8	1.7	0.7			
													grey	silcrete	F	1.1	1.2	0.4			
													grey	silcrete	F	3.3	3.5	2.1			
													grey	silcrete	F	1.0	1.3	0.4			
													red/pink	silcrete	F	2.7	1.6	0.5			
													yellow	silcrete	F	3.0	2.9	1.0			weathered
													yellow	silcrete	F	3.0	2.9	1.1			inclusions 9mm
													yellow	silcrete	F	1.6	1.6	0.5			
													pink	silcrete	F	1.8	1.8	0.5			
													grey	silcrete	F	2.9	2.1	0.8			
													grey	silcrete	F	3.2	2.8	1.1			
													grey	silcrete	F	2.8	2.3	1.0			
													grey	silcrete	F	5.2	3.0	0.7			
													grey	silcrete	F	4.7	2.6	0.8			
													grey	silcrete	F	4.5	4.0	1.7			
													grey	silcrete	F	2.2	0.7	0.7			
													pink	silcrete	F	2.4	1.1	0.4			
													red	silcrete	F	1.2	1.0	0.3			
													grey	silcrete	F	1.5	1.2	0.3			
													grey	silcrete	F	4.0	3.4	1.1			
													grey	silcrete	F	3.7	2.7	0.8			
													grey	silcrete	F	2.5	2.7	0.7			
													grey	silcrete	F	2.3	2.8	0.5			
													grey	silcrete	F	2.7	2.2	0.6			
													grey	silcrete	F	1.8	1.1	0.3			
													pink	silcrete	F	2.2	1.6	0.4			
													grey	silcrete	F	4.0	2.2	1.3			
													grey	silcrete	F	2.4	2.1	1.1			
													grey	silcrete	F	2.0	1.6	0.6			
													grey	silcrete	F	4.4	4.2	1.4			
													grey	silcrete	F	1.2	1.0	0.2			
													grey	silcrete	F	2.7	3.6	0.8			
													grey	silcrete	F	2.0	2.4	0.7			
													grey	silcrete	F	1.5	1.7	0.4			
													pink	silcrete	F	1.6	2.9	0.6			
													grey	silcrete	F	1.7	1.8	0.5			
													grey	silcrete	F	0.9	1.5	0.5			
													red	silcrete	F	0.7	1.3	0.2			
													grey	silcrete	F	1.3	0.9	0.1			
													grey	silcrete	F	1.1	1.4	0.2			
													pink	silcrete	F	1.1	1.0	0.3			
													grey	silcrete	F	1.7	3.1	0.7			
													pink	silcrete	F	2.3	2.2	0.8			
													pink	silcrete	F	2.3	2.3	0.9			
													grey	silcrete	F	3.5	2.1	1.7			
													grey	silcrete	F	4.9	3.5	1.4			
													pink	silcrete	F	1.0	1.8	0.5			
													grey	silcrete	F	1.7	1.4	0.4			
													grey	silcrete	F	2.8	1.8	0.6			
													pink	silcrete	F	3.0	2.2	0.6			
													pink	silcrete	F	2.8	2.1	1.1			
													grey	silcrete	F	1.6	1.5	0.2			
													white	silcrete	F	1.9	1.8	0.3			
													grey	silcrete	F	1.1	1.2	0.3			
													yellow	silcrete	F	3.2	3.3	2.0			
													yellow	silcrete	F	2.8	3.5	1.0			
													grey	silcrete	F	1.8	2.6	0.8			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													pink	silcrete	F	2.4	2.2	0.5			
													pink	silcrete	F	2.7	2.0	1.0			
													grey	silcrete	F	3.3	4.2	1.2			
													yellow	silcrete	F	2.4	2.4	0.7			
													pink	silcrete	F	1.8	1.8	0.3			
													grey	silcrete	F	3.4	3.2	2.0			
													grey	silcrete	F	2.6	2.1	0.4			
													grey	silcrete	F	1.9	2.0	0.5			
													pink	silcrete	F	1.8	2.3	0.4			
													grey	silcrete	F	2.6	2.9	1.0			
													pink	silcrete	F	1.8	1.4	0.3			
													grey	silcrete	F	1.8	1.9	0.5			
													pink	silcrete	F	1.3	1.2	0.5			
													pink	silcrete	F	2.0	1.1	0.5			
													grey	silcrete	F	1.4	1.3	0.7			
													pink	silcrete	F	3.3	2.1	1.1			
													pink	silcrete	F	2.3	1.1	0.6			
													grey	silcrete	F	2.1	1.8	0.5			
													pink	silcrete	F	2.8	2.4	1.1			
													pink	silcrete	F	2.0	2.2	0.3			
													grey	silcrete	F	2.6	3.4	0.6			
													pink	silcrete	F	2.7	1.4	0.6			
													grey	silcrete	F	3.1	3.9	1.5			
													pink	silcrete	F	3.5	3.0	1.0			
													yellow	silcrete	F	2.0	2.4	0.4			
													pink	silcrete	F	1.5	1.7	0.6			
													grey	silcrete	F	2.2	1.2	0.5			
													yellow	silcrete	F	2.2	3.4	0.6			
													pink	silcrete	F	2.3	2.7	0.6			
													pink	silcrete	F	1.4	1.0	0.3			
													pink	silcrete	F	2.5	1.9	0.4			
													grey	silcrete	F	2.7	1.9	0.6			
													grey	silcrete	F	2.3	1.5	0.7			
													grey	silcrete	F	1.3	1.5	0.3			
													pink	silcrete	F	1.2	1.8	0.3			
													grey	silcrete	F	2.2	1.6	0.6			weathered
													pink	silcrete	F	1.5	1.2	0.4			
													pink	silcrete	F	1.7	1.3	0.4			
													grey	silcrete	F	1.4	1.8	0.8			
													pink	silcrete	F	1.3	1.4	0.3			
													grey	silcrete	F	1.2	1.2	0.3			
													pink	silcrete	F	2.5	1.6	0.6			
													pink	silcrete	F	1.2	0.9	0.2			
													pink	silcrete	F	1.0	1.7	0.3			
													pink	silcrete	F	1.0	1.5	0.5			
													yellow	silcrete	F	3.1	1.5	0.9			
													pink	silcrete	F	2.0	1.6	0.6			
													grey	silcrete	F	2.4	2.6	0.5	edgewear		
													pink	silcrete	F	2.1	1.5	0.4			
													yellow	silcrete	F	1.2	0.9	0.5		25	
													grey	silcrete	F	2.0	1.4	0.3			
													grey	silcrete	F	1.8	2.4	0.7			
													grey	silcrete	F	3.8	2.7	1.2			
													pink	silcrete	F	4.2	3.3	0.9			
													pink	silcrete	F	1.5	1.8	0.6			
													pink	silcrete	F	3.1	2.9	0.6			
													pink	silcrete	F	1.3	1.0	0.3			
													grey	silcrete	F	2.2	1.7	0.3			
													grey	silcrete	F	2.4	1.4	1.0			
													pink	silcrete	F	3.2	3.0	0.6	retouch one side		
													grey	silcrete	F	2.8	2.8	0.7			
													pink	silcrete	F	2.2	1.2	0.3			
													pink	silcrete	F	2.0	2.1	0.7			
													pink	silcrete	F	1.7	1.6	0.4			
													pink	silcrete	F	1.3	2.0	0.5			
													grey	silcrete	F	1.5	1.9	0.5			
													grey	silcrete	F	1.4	1.8	0.2			
													yellow/red	silcrete	F	1.6	1.0	0.5			
													pink	silcrete	F	1.1	1.1	0.2			
													pink	silcrete	F	1.1	0.9	0.2			
													grey	silcrete	F	3.5	2.2	0.5			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	F	2.5	1.8	0.9			
													grey	silcrete	F	2.5	1.7	0.7			
													pink	silcrete	F	2.0	1.7	0.5			
													grey	silcrete	F	1.5	1.7	0.5			
													grey	silcrete	F	2.7	1.7	0.4			
													pink	silcrete	F	1.2	1.5	0.2			
													pink	silcrete	F	1.0	0.7	0.2			
													grey	silcrete	F	1.0	1.0	0.2			
													pink	silcrete	F	1.1	1.5	0.4			
													grey	silcrete	F	6.2	5.7	1.5			
													grey	silcrete	F	6.0	3.1	2.2			
													grey	silcrete	F	2.3	2.5	0.4			
													pink	silcrete	F	2.3	2.5	0.5			
													pink	silcrete	F	2.8	2.5	0.5			
													grey	silcrete	F	3.5	2.8	1.2			
													grey	silcrete	F	0.9	1.6	0.4			
													grey	silcrete	F	1.2	1.8	0.2			
													grey	silcrete	F	1.2	1.6	0.5			
													pink	silcrete	F	2.6	2.1	0.5			
													grey	silcrete	F	2.6	2.2	0.7			
													grey	silcrete	F	1.1	1.3	0.5			
													grey	silcrete	F	1.3	1.2	0.2			
													grey	silcrete	F	1.6	1.2	0.3			
													grey	silcrete	F	0.9	0.9	0.2			
													red	silcrete	F	0.6	1.0	0.2			
													grey	silcrete	F	1.5	1.0	0.5			
													grey	silcrete	F	1.1	1.1	0.4			
													pink	silcrete	F	1.2	0.8	0.4			
													grey	silcrete	FP	1.5	1.0	0.6			
													grey	silcrete	FP	1.5	1.0	0.6			
													grey	silcrete	FP	2.0	1.0	0.3			
													grey	silcrete	FP	2.6	1.4	0.6	edgewear		appears to be forming a backed blade however the back is not backed
													pink	silcrete	FP	3.0	3.0	2.0			
													pink	silcrete	FP	2.0	1.0	0.4		50 (red)	
													pink	silcrete	FP	1.5	1.5	0.6			
													grey	silcrete	FP	3.0	3.0	0.6			
													pink	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	2.0	2.0	1.0			
													pink	silcrete	FP	3.5	2.5	1.5			
													grey	silcrete	FP	1.5	1.0	0.5			
													grey	silcrete	FP	0.8	0.5	0.1			
													grey	silcrete	FP	1.0	1.0	0.5			
													pink	silcrete	FP	1.0	1.0	0.3			
													pink	silcrete	FP	3.0	2.5	1.0			
													grey	silcrete	FP	1.6	1.0	0.5			
													pink	silcrete	FP	3.5	2.1	1.4			
													pink	silcrete	FP	7.0	2.8	1.6			
													grey	silcrete	FP	8.2	5.1	2.2			
													grey	silcrete	FP	1.8	1.8	0.5			
													grey	silcrete	FP	2.2	1.8	0.4			
													grey	silcrete	FP	4.4	3.9	2.0			
													grey	silcrete	FP	2.0	1.5	0.7			
													grey	silcrete	FP	2.7	1.7	0.9			
													grey	silcrete	FP	4.1	2.9	2.5			
													pink	silcrete	FP	4.0	3.5	1.2			
													pink	silcrete	FP	4.2	3.0	1.2			
													grey	silcrete	FP	1.6	1.1	0.3			inclusions up to 10mm
													grey/red	silcrete	FP	1.5	0.9	0.4			
													pink	silcrete	FP	1.6	0.8	0.3			
													grey	silcrete	FP	4.3	2.6	1.2			
													pink	silcrete	FP	2.6	1.9	1.4			
													pink	silcrete	FP	2.0	1.8	0.8			
													grey	silcrete	FP	1.6	1.2	0.7			
													pink	silcrete	FP	1.7	1.4	0.6			
													pink	silcrete	FP	1.6	1.6	1.0			
													pink	silcrete	FP	2.2	1.2	0.4			
													grey/red	silcrete	FP	1.6	1.5	1.1			
													pink/red	silcrete	FP	2.6	2.0	0.6	usewear one side		
													grey	silcrete	FP	4.3	3.4	2.3			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													dark pink	silcrete	FP	1.5	1.0	0.3			
													pink	silcrete	FP	2.1	1.5	0.9			
													yellow	silcrete	FP	1.4	1.4	0.4			
													grey	silcrete	FP	19.0	1.1	0.5			
													grey	silcrete	FP	2.5	1.6	1.1			
													yellow	silcrete	FP	3.0	1.8	1.0			
													grey	silcrete	FP	2.6	1.9	0.9			
													red	silcrete	FP	4.0	3.8	2.3			
													red	silcrete	FP	3.7	3.0	1.9			
													red	silcrete	FP	4.5	2.8	1.4			
													pink	silcrete	FP	2.5	1.9	1.2			
													pink	silcrete	FP	1.5	1.4	0.7			
													pink	silcrete	FP	1.3	1.1	0.2			
													grey	silcrete	FP	3.6	2.5	1.2			
													pink	silcrete	FP	2.4	1.8	0.6			
													grey	silcrete	FP	3.7	1.8	0.9			
													grey	silcrete	FP	3.4	2.7	2.6			
													grey	silcrete	FP	2.6	2.2	0.6			
													pink	silcrete	FP	2.9	2.8	1.2			
													pink	silcrete	FP	2.3	1.3	2.4			
													grey	silcrete	FP	2.2	2.0	0.5			
													grey	silcrete	FP	2.1	1.6	0.3			
													pink	silcrete	FP	2.2	2.1	0.6			
													pink	silcrete	FP	2.7	1.9	0.8			
													yellow	silcrete	FP	1.5	1.3	0.3			
													pink	silcrete	FP	1.8	1.1	0.7			
													red	silcrete	FP	3.0	1.5	0.6			
													pink	silcrete	FP	1.6	1.5	0.5			
													pink	silcrete	FP	1.3	1.0	0.3			
													pink	silcrete	FP	2.7	1.6	0.8	edgewear		
													pink	silcrete	FP	1.8	1.0	0.6	retouch		
													pink	silcrete	FP	2.4	2.2	0.6			
													pink	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	1.6	1.6	0.8			
													pink	silcrete	FP	3.5	3.0	1.8			
													grey	silcrete	FP	2.5	1.9	0.9			
													pink	silcrete	FP	3.2	1.8	0.5			
													pink	silcrete	FP	3.0	2.2	0.7			
													pink	silcrete	FP	2.3	1.4	0.7			
													grey/red	silcrete	FP	6.2	2.6	2.0			
													pink	silcrete	FP	1.7	1.3	0.3			
													grey/red	silcrete	FP	2.7	1.5	1.2			
													yellow	silcrete	FP	4.0	2.4	2.2		10 (red)	
													grey	silcrete	FP	4.0	3.1	1.2			
													grey	silcrete	FP	4.9	3.3	1.5			
													grey	silcrete	FP	4.3	2.0	2.0			
													yellow	silcrete	FP	1.7	1.5	0.3			
													pink	silcrete	FP	3.5	2.7	1.4			
													grey	silcrete	FP	2.3	2.0	1.7			
													grey	silcrete	FP	5.6	3.6	2.5			
													pink	silcrete	FP	3.7	2.4	1.2			
													pink	silcrete	FP	3.0	2.8	1.4			
													grey	silcrete	FP	2.3	1.7	1.5			
													grey	silcrete	FP	2.0	1.6	0.5			
													grey	silcrete	FP	3.1	2.5	1.4			
													grey	silcrete	FP	1.0	0.9	0.3			
													pink	silcrete	FP	1.7	1.0	0.4		10	
													grey	silcrete	FP	1.5	1.2	0.5			
													pink	silcrete	FP	1.9	1.7	0.6			
													grey	silcrete	FP	2.9	1.9	1.1			
													pink	silcrete	FP	3.7	2.3	1.9			
													grey	silcrete	FP	2.0	1.3	0.6			
													grey	silcrete	FP	5.0	2.5	1.9			
													pink	silcrete	FP	5.7	5.1	1.8			
													pink	silcrete	FP	3.5	3.4	1.0			weathered
													grey	silcrete	FP	2.6	2.0	0.7			
													pink	silcrete	FP	1.4	0.9	0.4			
													grey	silcrete	FP	1.6	1.5	0.3			
													grey	silcrete	FP	1.3	1.1	0.4			
													yellow	silcrete	FP	3.0	2.4	1.2			weathered
													grey	silcrete	FP	1.7	1.4	0.4			
													red	silcrete	FP	2.0	1.5	0.4			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	1.3	1.2	0.4			
													grey	silcrete	FP	1.2	1.1	0.3			
													red	silcrete	FP	2.0	1.7	0.3			
													grey	silcrete	FP	1.3	0.9	0.5			
													grey	silcrete	FP	2.5	1.8	0.6			
													grey/red	silcrete	FP	3.8	2.2	1.6		20 (red)	
													grey	silcrete	FP	3.2	3.0	1.3			
													grey	silcrete	FP	2.3	1.9	0.9			
													pink	silcrete	FP	3.2	1.8	0.9			
													pink	silcrete	FP	4.5	2.7	1.7			
													grey	silcrete	FP	2.3	1.5	1.0			
													grey	silcrete	FP	2.8	1.9	1.3			
													grey	silcrete	FP	2.0	1.8	0.7			
													yellow	silcrete	FP	2.2	1.0	0.5			
													grey	silcrete	FP	2.6	1.5	0.5			
													grey	silcrete	FP	1.7	1.2	0.5			
													grey	silcrete	FP	2.0	1.7	1.0			
													grey	silcrete	FP	1.0	0.8	0.5			
													grey	silcrete	FP	2.3	2.0	0.8			
													pink	silcrete	FP	3.0	1.8	1.1			
													pink	silcrete	FP	1.9	1.1	0.6			
													grey	silcrete	FP	1.8	1.5	1.9			
													pink	silcrete	FP	2.5	1.4	1.1			
													grey	silcrete	FP	2.4	1.6	0.2			
													grey	silcrete	FP	2.0	1.6	1.4			
													grey	silcrete	FP	1.7	1.4	1.6			
													yellow	silcrete	FP	2.0	1.8	0.7			
													grey	silcrete	FP	1.3	1.3	0.2			
													grey	silcrete	FP	1.5	1.2	0.4			
													yellow	silcrete	FP	0.9	0.7	0.2			
													grey	silcrete	FP	3.1	3.1	2.4			
													grey	silcrete	FP	1.7	1.3	1.5			
													grey	silcrete	FP	2.6	1.7	0.9			
													pink	silcrete	FP	3.8	2.7	0.7			
													yellow	silcrete	FP	1.6	1.6	0.3			
													yellow	silcrete	FP	6.3	1.9	2.1			
													grey	silcrete	FP	3.3	2.0	1.4			
													grey	silcrete	FP	3.0	1.8	1.0			
													grey	silcrete	FP	1.9	1.7	1.2			
													pink	silcrete	FP	1.4	1.4	0.6			
													pink	silcrete	FP	1.9	1.5	1.3			
													grey	silcrete	FP	2.9	2.1	1.9			
													grey	silcrete	FP	2.3	2.2	0.8			
													grey	silcrete	FP	3.4	3.1	1.9			
													grey	silcrete	FP	2.4	2.2	1.3			
													pink	silcrete	FP	1.4	0.8	0.5			
													grey	silcrete	FP	5.8	3.5	1.1			
													pink	silcrete	FP	3.6	2.9	1.3			
													grey	silcrete	FP	3.0	1.3	1.2			
													pink	silcrete	FP	3.1	2.8	1.0			
													pink	silcrete	FP	2.5	2.3	1.4			
													pink	silcrete	FP	1.5	1.2	0.4			
													grey	silcrete	FP	1.3	1.3	0.3			
													pink	silcrete	FP	2.5	2.1	1.4			
													pink	silcrete	FP	4.4	3.7	0.9			
													pink	silcrete	FP	3.5	2.6	1.6			
													grey	silcrete	FP	2.2	1.4	0.8			
													grey	silcrete	FP	3.5	2.7	1.8			
													grey	silcrete	FP	1.8	1.8	0.5			
													grey	silcrete	FP	3.1	2.2	1.0			
													pink	silcrete	FP	4.4	3.7	2.0			
													pink	silcrete	FP	5.4	3.4	1.5		40	
													yellow	silcrete	FP	2.5	2.4	0.9			
													grey	silcrete	FP	2.0	1.7	0.4			
													pink	silcrete	FP	1.7	1.2	0.3			
													pink	silcrete	FP	3.7	2.8	2.5	retouch		
													pink	silcrete	FP	2.7	3.0	1.0			
													yellow	silcrete	FP	1.5	1.4	0.7			
													pink	silcrete	FP	2.7	2.7	0.8			
													yellow	silcrete	FP	2.4	2.3	0.3			
													grey	silcrete	FP	3.3	2.7	1.0			
													grey	silcrete	FP	2.6	2.2	0.9			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	2.5	1.6	0.5			
													pink	silcrete	FP	2.3	2.0	0.7			
													pink	silcrete	FP	3.5	2.9	1.3			
													yellow	silcrete	FP	2.5	1.9	0.9			
													grey	silcrete	FP	2.5	1.6	0.9			
													grey	silcrete	FP	1.7	1.8	0.5			
													grey	silcrete	FP	2.2	1.7	0.4			
													grey	silcrete	FP	1.8	1.2	0.5			
													pink	silcrete	FP	1.2	1.0	0.9			
													grey	silcrete	FP	2.9	2.7	1.4			
													pink	silcrete	FP	2.9	2.7	0.4			
													grey	silcrete	FP	3.2	2.5	1.7			
													pink	silcrete	FP	1.1	1.1	0.6			
													pink	silcrete	FP	2.0	1.2	0.8			
													grey	silcrete	FP	2.7	1.4	0.7			
													red/yellow	silcrete	FP	3.4	2.6	1.8			
													pink	silcrete	FP	2.5	1.6	1.2			
													grey	silcrete	FP	1.8	1.8	0.2			
													grey	silcrete	FP	2.4	2.1	1.3			
													grey	silcrete	FP	3.9	3.1	1.2			
													grey/pink	silcrete	FP	2.5	2.4	1.5			
													grey	silcrete	FP	3.2	2.4	2.5			
													grey	silcrete	FP	4.3	4.0	2.1			
													grey	silcrete	FP	3.4	2.1	0.3			
													grey	silcrete	FP	3.3	2.6	0.7			
													grey	silcrete	FP	1.5	1.2	1.0			
													grey/pink	silcrete	FP	4.7	3.2	1.7			
													grey	silcrete	FP	1.8	1.8	0.9			
													pink	silcrete	FP	3.2	2.6	1.0			
													yellow	silcrete	FP	2.8	2.5	1.8			
													pink	silcrete	FP	2.9	2.2	0.6			
													pink	silcrete	FP	2.2	1.8	1.1			
													grey	silcrete	FP	2.2	1.6	0.3			
													grey	silcrete	FP	1.9	1.1	0.3			
													pink	silcrete	FP	3.4	2.6	0.9	retouch		
													yellow	silcrete	FP	3.0	2.7	1.0			
													red	silcrete	FP	2.7	1.3	1.2			
													pink	silcrete	FP	2.2	1.5	0.7			weathered
													grey	silcrete	FP	2.4	1.7	0.8			
													yellow	silcrete	FP	2.1	1.7	0.5			
													pink	silcrete	FP	1.6	1.3	0.5			
													pink	silcrete	FP	2.1	2.1	0.5			
													pink	silcrete	FP	2.4	1.3	0.4			
													pink	silcrete	FP	1.2	1.2	0.6			
													pink	silcrete	FP	2.0	1.7	0.2			
													pink	silcrete	FP	2.2	1.9	0.4			
													grey	silcrete	FP	2.2	2.1	2.1			
													pink	silcrete	FP	1.3	1.1	0.2			
													pink	silcrete	FP	2.0	1.5	0.5			
													pink	silcrete	FP	1.7	1.7	1.1			
													grey	silcrete	FP	2.7	2.3	0.9			
													red	silcrete	FP	2.3	1.9	1.8			
													pink	silcrete	FP	3.0	2.0	0.7			
													grey	silcrete	FP	2.1	1.9	0.6			
													pink	silcrete	FP	1.8	1.0	0.4			
													grey	silcrete	FP	1.4	1.2	0.4			
													yellow	silcrete	FP	1.5	1.2	0.6			
													pink	silcrete	FP	2.4	1.8	1.9			
													pink	silcrete	FP	2.3	1.6	0.7			
													grey	silcrete	FP	1.6	1.3	0.8			
													yellow	silcrete	FP	1.9	1.5	0.9			
													pink	silcrete	FP	2.4	1.7	0.5			
													pink	silcrete	FP	1.5	1.4	0.6			
													pink	silcrete	FP	1.9	1.6	0.8			
													grey	silcrete	FP	2.5	1.6	0.6			
													grey	silcrete	FP	1.8	0.7	0.2			
													grey	silcrete	FP	1.7	1.7	0.9			
													grey	silcrete	FP	1.3	1.3	0.7			
													pink	silcrete	FP	2.4	2.2	0.9			
													pink	silcrete	FP	2.5	1.6	0.5			
													yellow	silcrete	FP	1.9	1.8	0.5			
													pink	silcrete	FP	2.0	1.1	0.5			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey/pink	silcrete	FP	1.7	1.4	0.5			
													red	silcrete	FP	1.3	1.1	0.9			
													grey	silcrete	FP	1.6	1.3	0.5			
													grey	silcrete	FP	1.6	0.7	0.3			
													pink	silcrete	FP	1.1	1.0	0.2			
													pink	silcrete	FP	1.6	1.4	0.5			
													grey	silcrete	FP	1.8	1.3	0.3			
													pink	silcrete	FP	1.4	1.2	0.4			
													pink	silcrete	FP	2.1	1.1	0.4			
													yellow	silcrete	FP	2.5	1.3	0.5			
													grey	silcrete	FP	1.2	0.8	0.4			
													grey	silcrete	FP	1.7	1.1	0.5			
													grey	silcrete	FP	0.8	0.7	0.3			
													grey	silcrete	FP	1.4	1.0	0.4			
													grey	silcrete	FP	1.7	1.2	0.5			
													grey	silcrete	FP	1.4	0.8	0.6			
													pink	silcrete	FP	1.2	0.8	0.2			
													grey	silcrete	FP	1.2	1.0	0.8			
													pink	silcrete	FP	1.5	1.2	0.4			
													pink	silcrete	FP	1.4	1.3	0.4			
													pink	silcrete	FP	1.5	1.4	0.5			
													pink	silcrete	FP	1.8	1.3	0.4	edgewear both sides		
													yellow	silcrete	FP	1.8	1.3	0.3			
													grey	silcrete	FP	1.6	1.1	0.2			
													grey	silcrete	FP	1.2	0.7	0.5			
													pink	silcrete	FP	1.8	1.4	0.5			
													grey	silcrete	FP	1.2	0.8	0.2			
													pink	silcrete	FP	1.6	1.0	0.3			
													pink	silcrete	FP	1.4	0.9	0.3			
													pink	silcrete	FP	1.3	1.0	0.3			
													pink	silcrete	FP	1.4	1.0	0.6			
													yellow	silcrete	FP	1.4	1.2	0.5			
													grey	silcrete	FP	2.1	1.2	0.4			
													pink	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	1.0	0.9	0.4			
													pink	silcrete	FP	1.1	0.7	0.2			
													grey	silcrete	FP	1.0	0.5	0.3			
													pink	silcrete	FP	3.0	2.3	0.5			
													grey	silcrete	FP	2.7	1.6	1.1			
													grey	silcrete	FP	1.9	1.5	0.6			
													yellow	silcrete	FP	1.7	1.6	0.3			
													pink	silcrete	FP	3.5	2.0	0.8			
													pink	silcrete	FP	1.9	1.8	0.8			
													pink	silcrete	FP	1.4	0.5	0.3			
													pink	silcrete	FP	1.6	1.5	0.3			
													pink	silcrete	FP	2.1	1.9	0.5			
													pink	silcrete	FP	2.0	1.0	0.2			
													grey	silcrete	FP	1.6	1.0	0.4			
													grey	silcrete	FP	2.7	2.2	1.2		30	
													grey	silcrete	FP	2.2	1.9	1.4			
													grey	silcrete	FP	3.7	3.1	1.5			
													grey	silcrete	FP	2.4	1.5	0.7			
													grey	silcrete	FP	1.2	0.8	0.3			
													grey	silcrete	FP	3.2	1.9	0.6			
													pink	silcrete	FP	1.7	1.4	0.4			
													pink	silcrete	FP	2.3	1.2	0.6			
													grey	silcrete	FP	2.3	2.1	1.0			
													pink	silcrete	FP	2.5	2.2	0.9			
													grey	silcrete	FP	2.1	2.0	0.8			
													pink	silcrete	FP	2.3	1.5	0.6			
													pink	silcrete	FP	4.8	1.3	1.2			
													pink	silcrete	FP	3.2	1.5	0.9			
													pink	silcrete	FP	3.8	3.5	1.3			
													pink	silcrete	FP	1.4	1.3	0.5			
													grey	silcrete	FP	1.4	1.0	0.4			
													pink	silcrete	FP	1.5	1.0	0.4			
													pink	silcrete	FP	1.6	1.0	0.3			
													grey	silcrete	FP	1.4	1.0	0.3			
													pink	silcrete	FP	2.4	2.2	1.0			
													grey	silcrete	FP	3.5	3.2	1.4			
													grey	silcrete	FP	3.7	2.4	1.4		30	

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													red	silcrete	FP	2.5	2.0	1.5		10	
													pink	silcrete	FP	1.8	1.2	0.5			
													grey	silcrete	FP	1.7	1.5	0.5			
													grey	silcrete	FP	1.6	1.4	0.4			
													pink	silcrete	FP	1.7	1.3	0.4			
													grey	silcrete	FP	1.4	0.4	0.3			
													grey	silcrete	FP	2.3	2.3	0.8			
													grey	silcrete	FP	3.3	3.0	1.0			weathered
													red	silcrete	FP	2.3	1.9	0.7			
													grey	silcrete	FP	2.2	0.8	0.4			
													grey	silcrete	FP	1.8	1.7	0.8			
													grey	silcrete	FP	2.2	1.2	0.4			
													grey	silcrete	FP	1.9	1.5	0.4			
													grey	silcrete	FP	3.0	2.7	0.9			
													grey	silcrete	FP	1.9	1.7	0.8			
													grey/red	silcrete	FP	3.7	2.6	1.4			
													red	silcrete	FP	1.5	1.4	0.3			
													pink	silcrete	FP	1.1	0.9	0.4			
													yellow	silcrete	FP	1.4	1.1	0.5			
													pink	silcrete	FP	1.0	0.9	0.2			
													pink	silcrete	FP	2.0	1.5	0.7			
													grey	silcrete	FP	1.8	1.2	0.8			
													pink	silcrete	FP	1.2	1.0	0.3			
													pink	silcrete	FP	1.6	1.5	0.3			
													pink	silcrete	FP	0.7	0.7	0.2			
													grey	silcrete	FP	1.9	1.4	0.4			
													pink	silcrete	FP	2.8	1.3	0.5			
													pink	silcrete	FP	2.3	1.0	0.6			
													pink	silcrete	FP	1.8	1.6	0.4			
													grey	silcrete	FP	1.8	0.9	0.2			
													grey	silcrete	FP	0.9	0.8	0.2			
													pink	silcrete	FP	1.4	1.0	0.4			
													pink	silcrete	FP	0.9	0.7	0.1			
													yellow	silcrete	FP	1.3	1.0	0.2			
													grey	silcrete	FP	2.1	2.0	0.5			
													pink	silcrete	FP	2.2	2.0	0.8			
													pink	silcrete	FP	1.4	1.2	0.3			
													pink	silcrete	FP	1.0	0.7	0.4			
													yellow	silcrete	FP	1.5	1.0	0.2			
													pink	silcrete	FP	1.3	0.9	0.4			
													grey	silcrete	FP	1.8	1.6	0.8			
													grey	silcrete	FP	3.4	2.9	1.4			
													grey	silcrete	FP	4.8	3.8	2.5			
													grey	silcrete	FP	3.0	2.3	1.2		10 - red	
													grey	silcrete	FP	1.2	0.4	0.2			
													grey	silcrete	FP	1.9	1.5	0.5			
													grey	silcrete	FP	2.9	2.0	0.7		25 - red	
													pink	silcrete	FP	3.9	2.0	1.0			
													red	silcrete	FP	2.2	1.8	1.0		20	
													grey	silcrete	FP	3.5	2.7	0.9			
													grey	silcrete	FP	3.7	2.9	0.7			
													grey	silcrete	FP	1.7	1.7	0.8			
													grey	silcrete	FP	1.5	1.5	1.2			
													grey	silcrete	FP	1.6	1.6	0.3			
													yellow	silcrete	FP	2.5	2.3	1.0			
													grey	silcrete	FP	2.0	1.7	0.6			
													grey	silcrete	FP	2.3	1.8	0.8			
													grey	silcrete	FP	1.3	1.0	0.2			
													grey	silcrete	FP	1.7	0.7	0.4			
													grey	silcrete	FP	1.9	1.1	0.4			
													grey	silcrete	FP	1.8	1.4	0.5			
													yellow	silcrete	FP	2.2	1.4	1.0			
													grey	silcrete	FP	3.0	1.8	0.6			
													grey	silcrete	FP	1.7	0.9	0.4			
													grey	silcrete	FP	1.5	1.2	0.3			
													grey	silcrete	FP	2.0	1.6	0.4			
													grey	silcrete	FP	1.7	1.4	0.5			
													pink	silcrete	FP	2.7	1.7	0.7			
													yellow	silcrete	FP	3.5	3.0	1.0			
													pink	silcrete	FP	2.8	1.2	1.0			
													grey	silcrete	FP	2.1	1.5	0.6			
													pink	silcrete	FP	2.9	2.2	0.6			

Northern Catchment

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													pink	silcrete	FP	2.2	2.1	0.7			
													grey	silcrete	FP	2.6	2.3	0.8			
													grey	silcrete	FP	2.2	1.5	0.5			
													pink	silcrete	FP	2.0	1.0	0.4			
													grey	silcrete	FP	1.6	1.5	0.8			
													grey	silcrete	FP	2.2	1.9	0.4			
													yellow	silcrete	FP	1.8	1.2	0.5			
													pink	silcrete	FP	1.2	0.8	0.2			
													yellow	silcrete	FP	2.0	1.0	0.5			
													grey	silcrete	FP	2.5	1.7	0.5			
													pink	silcrete	FP	2.0	1.8	0.4			
													grey	silcrete	FP	1.4	0.9	0.3			
													pink	silcrete	FP	3.0	2.3	0.9			
													grey	silcrete	FP	1.8	1.4	0.5			
													yellow	silcrete	FP	1.5	1.3	0.3			
													grey	silcrete	FP	1.7	0.9	0.5			
													grey	silcrete	FP	1.2	1.0	0.4			
													pink	silcrete	FP	1.5	1.0	0.3			
													yellow	silcrete	FP	1.9	1.5	0.8			
													yellow	silcrete	FP	1.3	1.2	0.3			
													pink	silcrete	FP	1.5	1.2	0.2			
													grey	silcrete	FP	3.2	2.0	1.5			
													grey	silcrete	FP	1.8	1.6	0.6			
													pink	silcrete	FP	2.3	2.0	0.3			
													grey	silcrete	FP	3.2	2.4	1.0			
													grey/yellow	silcrete	FP	5.1	2.6	1.7			
													grey	silcrete	FP	3.8	3.5	1.7		40 - red	
													grey	silcrete	FP	4.1	3.2	1.0			
													yellow	silcrete	FP	3.8	3.2	0.8			
													grey	silcrete	FP	3.5	2.2	1.3			
													grey	silcrete	FP	3.0	1.2	0.9			
													grey	silcrete	FP	3.3	2.8	0.5			
													grey	silcrete	FP	4.0	3.5	1.8			
													pink	silcrete	FP	2.8	1.2	0.5			
													grey/yellow	silcrete	FP	3.5	2.3	1.3			
													grey	silcrete	FP	5.3	3.2	2.5			
													pink	silcrete	FP	3.2	2.4	1.5			
													pink	silcrete	FP	2.5	1.5	0.6			
													pink	silcrete	FP	2.4	1.8	0.8			
													grey	silcrete	FP	3.4	2.6	1.2			
													yellow/grey	silcrete	FP	5.8	5.4	3.1			
													pink	silcrete	FP	2.6	2.1	0.5			
													grey	silcrete	FP	3.7	2.2	0.6			
													grey	silcrete	FP	1.5	1.3	0.3			
													grey	silcrete	FP	1.2	1.0	0.3			
													grey	silcrete	FP	4.3	4.0	2.0			
													grey	silcrete	FP	1.3	1.3	0.4			
													pink	silcrete	FP	3.5	2.3	1.2			
													pink	silcrete	FP	2.8	2.2	0.2			
													grey	silcrete	FP	2.3	2.2	1.0			
													grey/red	silcrete	FP	3.5	3.5	1.1			
													pink	silcrete	FP	2.4	1.0	0.5			
													grey	silcrete	FP	3.0	1.6	0.6			
													grey	silcrete	FP	2.2	1.6	0.5			
													grey	silcrete	FP	2.7	2.7	1.0			
													grey	silcrete	FP	1.3	1.0	0.4			
													pink	silcrete	FP	1.7	1.6	0.5			
													grey	silcrete	FP	2.0	1.8	0.7			
													grey	silcrete	FP	2.2	1.4	0.5			
													grey	silcrete	FP	2.0	1.4	0.4			
													pink	silcrete	FP	1.3	1.3	0.2			
													pink	silcrete	FP	2.6	2.6	0.9			
													grey	silcrete	FP	3.5	2.7	1.7			
													grey	silcrete	FP	1.6	1.0	0.4			
													pink	silcrete	FP	2.7	1.7	1.0			
													grey	silcrete	FP	2.0	1.2	0.7			
													grey	silcrete	FP	2.4	1.6	0.8			
													pink	silcrete	FP	2.3	2.0	0.9			
													grey	silcrete	FP	1.4	1.1	0.5			
													grey	silcrete	FP	2.1	2.0	0.4			
													grey	silcrete	FP	1.4	1.3	0.2			
													grey	silcrete	FP	1.7	1.2	0.3			

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Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
													grey	silcrete	FP	2.9	1.9	1.0			
													grey	silcrete	FP	1.7	1.3	0.3			
													pink	silcrete	FP	2.5	1.0	0.3			
													pink	silcrete	FP	1.9	0.8	0.4			
													pink	silcrete	FP	2.0	0.9	0.5			
													pink	silcrete	FP	1.4	1.1	0.3			
													grey	silcrete	FP	1.2	1.1	0.5			
													pink	silcrete	FP	1.8	0.7	0.1			
													grey	silcrete	FP	2.1	1.5	0.3			
													pink	silcrete	FP	2.4	1.7	0.3			
													grey	silcrete	FP	0.7	0.7	0.5			
													grey	silcrete	FP	1.1	0.7	0.3			
													grey	silcrete	FP	2.0	1.7	0.3			
													grey	silcrete	FP	1.8	1.2	0.5			
													grey	silcrete	FP	0.9	0.7	0.2			
													grey	silcrete	FP	1.7	1.0	0.8			
													grey	silcrete	FP	1.8	1.0	0.5			
													grey	silcrete	FP	1.5	1.0	0.3			
													yellow	silcrete	FP	1.2	0.8	0.7			
													red	silcrete	FP	1.8	1.0	0.2			
													grey	silcrete	FP	1.0	0.5	0.2			
													pink	silcrete	FP	1.8	1.0	0.3			
													grey	silcrete	FP	1.1	0.9	0.3			
45	A	293800	6431750	OCS	hillslope	grass cover	10x3	5	5	observed through grass	good	2	grey/pink	silcrete	C	2.6	4.9	3.2			
													pink	silcrete	FP	1.6	1.6	0.5			
46	B	293600	6431750	ISF	hillslope (lower)	exposure adjacent to fenceline		95	90	on eroded surface	disturbed	1	orange	mudstone	F	3.0	3.8	1.0			
47	C	293550	6430950	OCS	ridge (saddle)	on old closed road adjacent to fenceline	5x2	20	50	amongst grass cover on road	disturbed	2	cream/pink/orange	chert	F	3.9	1.9	1.4	retouch/edge wear		
													grey	silcrete	FP	3.6	3.3	0.5			

Southern Catchment

Site	Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w)	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
48	S1	291750	6429950	OCS	hillslope	sheet erosion	30x30	5-20	20-70	in erosion and amongst grass	disturbed	15	grey	silcrete	FP	2.0	1.5	0.8			
													grey	silcrete	FP	3.0	1.5	1.0			
													grey	silcrete	FP	3.0	3.0	0.5			
													grey/red	silcrete	FP	2.0	1.0	0.3			
													pink/red	silcrete	F	3.0	3.0	1.0	edgewear		
													red	mudstone	F	3.5	3.0	1.0			
													yellow	silcrete	FP	2.5	1.0	1.0			
													grey	silcrete	FP	2.0	1.5	0.5			
													grey	silcrete	FP	1.0	1.0	0.5			
													grey	silcrete	FP	2.5	2.5	0.5			
													grey	mudstone	FP	1.0	0.8	0.3			
													grey	silcrete	FP	1.0	0.8	0.5			
													grey/red	silcrete	FP	4.3	2.0	1.5			
													grey	silcrete	F	4.5	3.0	1.0			
													grey	mudstone	FP	3.5	3.0	1.5			
49	S2	291700	6429900	OCS	hillslope	surface/sheet erosion and around ants nest	50x30	95	95	exposure adjacent to fenceline	disturbed	21		quartzite	FP	1.5	1.0	1.0			
														quartzite	FP	1.0	1.0	0.5			
														quartzite	FP	2.0	1.5	1.0			
														quartz	FP	2.0	2.0	1.0			
														quartz	FP	1.0	1.0	0.3			
														quartz	FP	1.0	0.5	0.3			
														quartz	FP	1.0	0.8	0.5			
													grey	silcrete	F	2.0	1.5	0.8			
													pink/grey	silcrete	FP	2.0	2.0	0.3			
													pink/grey	silcrete	FP	2.0	2.0	0.3			
													yellow/grey banded	mudstone	FP	2.5	1.0	0.5	retouch		
													grey	FGS	FP	4.0	4.0	2.0			
														quartz	FP	1.0	0.5	0.3			
														quartz	FP	2.0	1.5	0.5			
													grey	FGS	FP	5.0	2.0	2.0			
														quartz	FP	2.0	1.0	0.3			
														quartz	FP	2.0	1.0	0.3			
													grey	silcrete	FP	5.5	5.5	1.0			large inclusions up to 10mm
													grey	FGS	FP	2.0	2.0	0.5			
														quartz	FP	2.0	1.0	0.5			
													grey	volcanic	FP	5.0	2.0	2.0			fractured

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50	S3	291750	6429750	ST (possible)	hillslope			5		Narrow-leaved Ironbark. Scar was 21cm off ground. Uneven scar. Scar dimensions 40cm long, 20cm wide and 2cm										non symmetrical
51	S4	291600	6429650	ISF	hillslope	surface erosion	10x10	90	90	ants nest	disturbed	1	red	silcrete	FP	2.5	1.0	0.5		
52	S5	291650	6429500	OCS	hillslope	surface erosion		5	40	on eroded surface	eroded	2	grey	silcrete	FP	5.5	4.0	3.5		
														quartz	FP	3.0	2.0	1.0		
53	S6	291900	6429450	OCS	hillslope (although on minor drainage line)	surface erosion down hillslope	20x15	40	20	in erosion	disturbed	4	grey	mudstone	FP	3.5	2.5	2.0		
														quartzite	FP	3.5	1.5	0.8		
														quartzite	FP	1.0	0.5	0.3		
														quartz	FP	1.5	1.0	0.8		
54	S7	291850	6429450	OCS	hillslope to gully	sheet and gully erosion and around ants nest	80cm-1m eroded sides of gully 10x4	90	90	on gully sides	disturbed	21	red	silcrete	FP	2.0	2.0	1.0		
													red	silcrete	C	3.0	6.0	4.0		
													grey	FGS	C	4.0	4.0	6.0		
													red/pink	silcrete	FP	3.0	1.0	1.0		
													red	silcrete	BB	2.0	1.0	0.5		
													yellow/orange	mudstone	F	3.0	3.0	0.8		rudimentary
													cream/pink	silcrete	F	5.0	4.0	1.5		
													pink	silcrete	BB	2.7	0.8	0.5		broken (2 conjoining pieces)
													grey	silcrete	FP	1.0	1.0	0.5		
													grey	silcrete	FP	4.0	3.5	1.0		
													grey	silcrete	FP	3.8	3.5	3.0		
													orange	mudstone	FP	1.0	1.0	0.5		
													orange	mudstone	FP	3.0	2.0	1.8		
													grey	silcrete	FP	2.3	1.5	2.2		
													grey	petrified wood	FP	2.0	1.5	1.0		
													grey	mudstone	FP	1.3	1.0	0.5		
													pink	silcrete	FP	4.5	3.5	1.2		large inclusions up to 7mm
													grey/red	silcrete	FP	3.0	2.7	1.5		

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													grey	silcrete	F	2.0	1.2	0.4			
													grey	silcrete	C	4.0	4.5	4.0			
													grey	FGS	FP	5.5	5.0	4.0			weathered
55	S8	291950	6429450	OCS	gully	E side of E gully	10x5	60	80	artefacts on bank and sides of gully eroded up to 2m	disturbed	107	yellow	silcrete	FP	7.0	4.0	2.0			
						unique feature - petrified wood knapping floor							yellow	silcrete	FP	3.5	2.5	1.5			
													yellow	silcrete	FP	3.2	2.5	1.5			
													yellow/grey	silcrete	FP	4.7	2.3	1.5			
													yellow	silcrete	FP	2.2	1.5	0.4			
													yellow	silcrete	FP	1.5	0.9	0.1			
													grey	silcrete	FP	1.1	1.0	0.2			
													grey	silcrete	FP	3.5	3.3	1.0			
													grey	silcrete	FP	3.0	2.5	2.4		40	
													grey	silcrete	FP	1.0	1.0	0.2			
													grey	silcrete	FP	3.9	2.5	0.9			
													grey	silcrete	FP	1.6	1.0	0.2			
													pink	silcrete	FP	4.2	3.0	1.0			large inclusions up to 11mm
													pink	silcrete	FP	6.0	4.5	1.5			
													pink	silcrete	F	3.0	2.8	0.7			
													pink	silcrete	FP	2.5	1.8	1.0			
													pink	silcrete	FP	2.5	1.8	1.5			
													grey	silcrete	FP	1.5	1.2	0.3			
													grey/red	silcrete	F(blade)	3.5	1.0	0.7		30 (red)	broken at top
													pink	mudstone	FP	3.6	2.1	0.8			
													cream/orange	mudstone	FP	3.4	3.0	2.5			
													orange	mudstone	FP	1.5	1.2	0.2			
													orange	mudstone	FP	2.0	1.5	0.6		20 (red)	
													yellow/orange	mudstone	FP	3.3	2.0	1.0		15 (red)	
													red	mudstone	FP	2.0	2.0	0.7			
													red	mudstone	FP	4.8	4.0	3.0		30 (red)	
													red	mudstone	FP	1.0	0.7	0.3			
													grey	silcrete	F	1.0	0.9	0.2			
													grey	silcrete	FP	1.1	0.7	0.4			
													grey	silcrete	FP	0.8	0.7	0.3			
													grey	silcrete	FP	1.1	0.7	0.2	edgewear		
														quartz	FP	1.7	1.0	0.7			
														quartz	FP	1.2	1.2	0.5			
													yellow	silcrete	FP	4.3	2.0	1.1			
														quartz	FP	1.4	1.1	0.5			
														volcanic	FRP	7.0	4.0	3.0			
													orange	FGS	FRP	3.5	3.5	1.8			
													orange	FGS	FRP	2.4	2.3	1.9			
													red	FGS	FP	1.6	1.2	0.9			
													red	FGS	FRP	2.7	2.5	2.2			
													grey	FGS	FP	2.4	1.5	1.0			
													grey	FGS/volcanic	FP	4.8	3.7	2.5			
													grey	volcanic	Pebble tool?/Fractured piece	10.5	8.2	3.5	possible retouch one side		weathered
													red/yellow	silcrete	FP	3.0	1.4	0.7			weathered

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														grey	FGS	FP	2.9	2.6	0.5			
														grey	silcrete	FP	2.2	1.5	0.9			
															petrified wood	FP	6.2	3.3	1.7			
															petrified wood	F (broken)	5.0	2.5	1.3	possible edgewear		broken at top
															petrified wood	F	1.5	2.5	0.5			
															petrified wood	FP	1.8	1.0	0.5			
															petrified wood	FP	2.5	1.8	0.7			
															petrified wood	F	1.4	0.8	0.2			
															petrified wood	FP	1.5	1.0	0.3			
															petrified wood	FP	1.7	1.0	0.3			
														grey	silcrete	FP	1.9	0.7	0.3			
															petrified wood	F(broken)	3.7	1.6	0.9			
															petrified wood	FP	2.7	2.1	0.9			
															petrified wood	FP	1.7	1.2	0.2			
															petrified wood	FP	2.2	1.9	0.6			
															petrified wood	FP	2.7	1.3	0.2			
															petrified wood	FP	1.6	0.9	0.2			
															petrified wood	FP	1.3	0.7	0.3			
															petrified wood	FP	1.5	1.0	0.4			
															petrified wood	FP	4.5	1.5	1.0	possible retouch		
															petrified wood	FP	2.8	2.2	0.8			
															petrified wood	FP	1.7	1.2	0.5			
															petrified wood	F	1.3	2.5	0.5			
															petrified wood	FP	1.7	1.0	0.4			
															petrified wood	FP	1.5	1.2	0.5			
															petrified wood	FP	3.7	1.5	0.6	possible retouch		
															petrified wood	FP	4.2	2.5	0.5			
															petrified wood	FP	2.0	2.0	0.5			
															petrified wood	FP	2.5	0.7	0.5			
															petrified wood	FP	1.3	0.7	0.5			
															petrified wood	FP	2.0	1.8	0.4			
															petrified wood	FP	1.3	0.7	0.2			
															petrified wood	FP	2.2	1.4	0.9			
															petrified wood	F	1.4	2.8	0.0			

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														petrified wood	F(broken)	3.8	1.2	0.7	possible edgewear		broken at top
														petrified wood	F(broken)	2.5	1.7	0.7			broken at top
														petrified wood	FP	1.3	0.9	0.1			
														petrified wood	FP	1.7	1.1	0.5			
														petrified wood	FP	1.5	1.2	0.3			
														petrified wood	F	2.8	1.2	0.5			
														petrified wood	FP	1.9	0.9	0.3			
														petrified wood	F	2.0	1.6	0.4			
														petrified wood	FP	2.1	1.5	0.3	edgewear		
														petrified wood	FP	1.0	0.8	0.4			
														petrified wood	FP	1.2	0.8	0.2			
														petrified wood	FP	1.8	1.8	0.2			
														petrified wood	F	2.2	2.8	0.5			
													grey	silcrete	F	2.1	1.8	0.5			
														petrified wood	FP	1.5	1.2	0.3			
														petrified wood	FP	1.7	1.2	0.5			
														petrified wood	FP	3.0	2.2	0.9			
														petrified wood	FP	2.0	1.5	0.8			
														petrified wood	F	1.5	1.5	0.4	edgewear		
														petrified wood	FP	0.9	0.8	0.3			
														petrified wood	FP	2.0	1.3	0.3			
														petrified wood	F	1.5	1.5	0.3			
														petrified wood	FP	2.0	1.5	0.3			
														petrified wood	F	1.4	1.4	0.4			
													grey	silcrete	F	1.0	0.8	0.3			
														petrified wood	FP	2.5	1.5	1.3			
														petrified wood	FP	2.0	1.7	1.0			
														petrified wood	FP	2.1	1.6	0.5			
														petrified wood	FP	1.1	0.4	0.1			
56	S9	291950	6429550	OCS	hillslope (although on minor drainage line)	ants nest on eroded slope	20x30	50	70			6	grey	silcrete	FP	3.0	2.0	0.8			

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					100m up gully line/hillslope								grey	silcrete	FP	4.0	4.0	2.0			
													yellow	mudstone	FP	4.0	4.0	2.0			
													pink/grey	silcrete	FP	2.4	2.0	0.8			
													grey	silcrete	FP	3.5	3.2	1.8			
													red/grey	silcrete	FP	4.3	3.9	0.9		45 (red)	
57	S10	292000	6429900	OCS	hillslope (at top of minor gully)	surface erosion	1x5m	90	90	eroded surface of minor gully banks	disturbed	7		quartz	FP	2.5	1.3	0.9			
													yellow	mudstone	FP	1.6	1.5	0.5			
														quartz	FP	1.8	1.4	1.0			
													pink	silcrete	F	2.6	3.3	1.0			
													pink	silcrete	F	2.6	3.3	0.6			
													pink	silcrete	FP	2.5	2.0	0.6			
														quartz	FP	2.3	1.5	1.0			
58	S11	291950	6429750	OCS	hillslope (although on side drainage line)	on top of steep and deep gully erosion and around ants nest	10x1.5 exposed however artefacts contained in area 1x1m	90	90			2	pink	silcrete	F	3.0	1.8	0.8			
													red	mudstone	F	3.2	3.2	1.2			
59	S12	292000	6429650	OCS	gully	surface erosion on bank	20x15	90	90	on eroded banks	deflated	33	grey/pink	silcrete	FP	4.7	4.1	1.5			
													grey	silcrete	FP	3.5	2.4	1.5			
														quartz	FP	4.8	2.5	2.2			
													cream/red	mudstone	FP	6.3	3.0	2.5		20	
													yellow/red	silcrete	FP	3.3	1.8	0.9	possible edgewear	40 (red)	
														quartz	FP	1.5	1.5	1.0			
													pink	silcrete	FP	4.4	3.2	0.7			
													pink	silcrete	FP	3.3	2.5	1.0			
													grey	silcrete	FP	3.8	3.2	1.0			
													pink	silcrete	F	3.0	2.8	1.0			
														petrified wood	FP	3.0	2.3	1.5			
													pink/red	silcrete	FP	6.5	5.0	3.5			
														volcanic	FRP	5.3	3.8	2.2			
													yellow	silcrete	F	4.2	2.8	0.8	retouch both sides		
													grey	silcrete	FP	2.5	2.0	1.0			
														petrified wood	FP	2.4	1.5	1.0			
														quartzite	FP	3.5	2.5	2.0			
														quartz	FP	1.0	0.5	0.5			
													yellow	silcrete	FP	1.7	1.6	0.7			
													yellow/grey	silcrete	FP	2.8	2.5	1.4			
													grey	silcrete	FP	3.3	2.5	1.3			large inclusions up to 6mm
													yellow/grey	silcrete	FP	3.4	2.4	0.9			
													yellow/grey	silcrete	FP	1.9	1.8	0.7			

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													yellow/grey	silcrete	FP	1.7	1.2	0.7			
													grey	silcrete	FP	3.2	2.0	1.1			
													grey	silcrete	FP	1.6	1.3	0.4			
													pink	silcrete	FP	4.5	3.0	2.0			
														quartz	FP	1.8	1.3	0.6			
														quartz	FP	1.2	1.0	0.3			
														quartz	FP	1.0	0.8	0.8			
														quartz	FP	3.0	2.7	1.1			
													pink	silcrete	FP	3.0	3.0	1.0			
													pink	silcrete	F	4.6	2.7	1.1			
60	S13	292050	6429550	OCS	gully flats (50m from gully line)	vehicle track	10x2.5	90	80	around ants nest on dirt track	disturbed	2		quartz	FP	2.5	1.5	0.7			
													pink/grey	silcrete	FP	1.5	1.0	0.5			
61	S14	292150	6429650	OCS	gully flats	vehicle track	12x2.5	90	80	on track	disturbed	4	yellow	silcrete	FP	3.3	3.1	1.2	edgewear		
													orange	mudstone	FP	2.0	1.2	0.7			
													grey	silcrete	FP	2.5	1.2	0.4			
													pink	silcrete	FP	2.3	2.0	1.9			
62	S15	292150	6429750	OCS	hillslope (lower)	vehicle track	10x2	90	90	embedded in soil and in grassed edges of track	disturbed	36	yellow/grey	silcrete	F	1.5	1.3	0.3			
													pink	silcrete	FP	4.6	2.9	1.5	retouch		
													grey/red	silcrete	FP	3.1	2.1	1.6			
													grey	mudstone	FP	2.7	2.0	1.5			
													pink	silcrete	FP	3.4	3.0	0.3	retouch		
													grey	silcrete	FP	3.1	1.5	1.1			
													pink	silcrete	FP	3.1	2.3	0.5			
													pink	silcrete	F	3.4	1.8	0.5	retouch		
													pink	silcrete	FP	2.8	2.5	0.6			
													pink	silcrete	A	2.0	2.0				
													pink	silcrete	F	2.1	1.7	0.8			
													pink	silcrete	F	1.4	2.0	0.3			
													pink/grey	FGS	FP	1.9	1.3	1.0			
													pink	silcrete	F	2.3	1.4	0.4	retouch		
													pink	silcrete	FP	2.4	2.4	0.8			
													pink	silcrete	FP	1.8	1.1	0.8			
														petrified wood	FP	2.0	1.4	0.7			
													cream	silcrete	FP	1.9	1.5	0.6			
													red	silcrete	FP	1.9	1.3	0.5			
													grey	silcrete	F	1.5	1.6	0.4			
													grey	silcrete	FP	1.4	1.2	0.5			
													pink	silcrete	FP	1.7	1.0	0.3			
													grey/red	silcrete	FP	1.9	1.0	0.6			
													pink	silcrete	FP	2.0	1.4	0.3			
													pink	silcrete	FP	1.1	1.0	0.2			
													pink	silcrete	F	1.8	1.1	0.2			
													grey/white	silcrete	F	1.3	1.3	0.2			
													grey	silcrete	FP	1.2	1.2	0.4			
													grey	silcrete	FP	1.0	0.8	0.1			
													grey	mudstone	F	1.1	0.8	0.3			
													pink	silcrete	FP	1.3	0.8	0.2			
													pink	silcrete	FP	1.1	1.0	0.3			
													pink	silcrete	FP	0.8	0.8	0.2			
													pink	silcrete	FP	0.8	0.7	0.2			

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													pink	silcrete	FP	0.7	0.3	0.1			
													yellow	mudstone	FP	1.0	0.6	0.2			
63	S16	292200	6429550	OCS	gully	surface erosion on both sides of gully banks	20x10	70	70	on eroded banks	disturbed	125	pink	silcrete	FP	3.5	2.3	2.2			
													pink	silcrete	FP	2.7	1.8	1.0			
													grey	silcrete	C	6.5	6.5	4.5			large inclusions up to 14mm
													yellow	mudstone	FP	2.4	2.1	0.5	edgewear		
													yellow	mudstone	FP	2.6	2.4	1.0			
													yellow/orange	mudstone	F	2.0	2.0	0.4			
													grey	silcrete	F	13.0	10.5	4.5	large and small retouch both sides		red film 20% (cortex?)
													grey	volcanic	FP	4.0	3.2	0.7			
													grey	silcrete	FP	2.4	2.3	0.3			
													pink/grey	silcrete	F	3.3	2.3	1.0			
													grey	mudstone	FP	3.0	1.2	0.9			
													pink	silcrete	FP	1.0	1.0	0.2			
													pink	silcrete	FP	1.8	1.4	0.5			
													grey	silcrete	F	2.0	2.0	0.6			
													grey	silcrete	FP	2.5	2.0	0.6			
													yellow/grey	silcrete	FP	2.6	1.3	1.2			
													pink/red	silcrete	FP	4.0	3.3	2.0			
													pink/red	silcrete	FP	2.7	2.6	1.0			
													yellow	silcrete	FP	1.5	1.0	0.3			
													pink	silcrete	FP	1.5	0.7	0.3			
													grey	silcrete	FP	3.7	2.6	1.8			
													grey	silcrete	FP	4.2	3.0	1.0			
													pink	silcrete	F(broken)	4.0	2.0	0.8			broken at top
													pink	silcrete	FP	1.5	1.5	0.7			
													orange	mudstone	FP	1.7	1.0	1.0			
													pink	silcrete	FP	2.4	2.2	0.5			
													yellow/grey	silcrete	FP	3.0	1.3	1.0			
													yellow/red	mudstone	F	2.5	1.9	0.5	retouch both sides		
													grey	silcrete	FP	1.4	1.0	0.3			
														petrified wood	F	4.8	2.2	1.0			
													yellow	silcrete	FP	1.9	1.1	0.3			
													pink	silcrete	FP	4.3	3.0	2.3			
													pink	silcrete	F	4.6	4.0	1.3			step fracture at top
													grey	silcrete	FP	1.0	0.7	0.2			
													pink	silcrete	FP	1.0	0.8	0.4			
													grey	silcrete	F	1.0	1.1	1.3			
													grey	silcrete	FP	2.2	2.0	0.5			
													grey	silcrete	FP	3.2	3.0	1.1			
													grey	silcrete	FP	1.3	1.2	0.3			
													grey	silcrete	FP	3.0	2.2	0.6			
													grey	silcrete	FP	2.6	1.8	0.5			
													red	silcrete	FP	2.1	1.8	0.4			
													pink	silcrete	FP	5.2	3.3	1.9			
													red	silcrete	FP	2.3	1.0	0.4			
													pink	silcrete	FP	2.0	1.0	0.4			
													grey	mudstone	FP	3.7	1.8	0.5	retouch one side		

Southern Catchment

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													red	mudstone	F	2.8	2.4	0.9			
													pink	silcrete	F	2.5	1.6	0.5			
													pink	silcrete	FP	2.2	0.8	0.2			
													grey	silcrete	FP	3.2	2.4	0.9			
													grey	silcrete	FP	2.3	2.0	0.7			
													yellow/red	mudstone	FP	3.3	2.5	1.5	retouch		
													pink	silcrete	FP	2.6	2.2	1.5			
													grey	silcrete	FP	3.2	1.8	1.3			
													red	silcrete	FP	1.5	1.2	0.5			
													grey	silcrete	F	1.8	2.1	0.5			
														quartz	FP	1.5	1.4	0.7			
													red	mudstone	FP	1.5	1.5	0.8			
													yellow	mudstone	F	2.0	2.9	1.2			
													yellow	mudstone	F	2.6	3.0	1.0			
													pink	silcrete	FP	1.8	1.5	0.5			
													grey	silcrete	FP	3.0	2.2	1.2			
													pink	silcrete	F	2.7	1.8	0.7			
													white/yellow/red	FGS	FP	3.9	1.6	1.3			
													grey	silcrete	FP	6.5	5.0	2.7			
64	S17	292000	6429400	OCS	gully	bank of gully	30x6	50	60 to 70	artefacts in exposure and amongst grass on surface	disturbed and stable	150	grey	silcrete	C	8.0	6.3	5.0		25 (red)	large inclusions up to 28mm
					on southern bank								pink	silcrete	F	5.0	2.2	1.5	retouch		
													grey	silcrete	FP	1.3	0.7	0.2			
													pink	silcrete	F	2.2	2.9	0.8			
													grey	FGS	FP	5.4	2.5	2.0			
													grey	silcrete	FP	2.1	2.0	0.3			
													yellow	mudstone	FP	1.5	1.0	0.3			
													yellow	mudstone	FP	1.9	1.0	0.4			
													grey/red	silcrete	FP	1.3	1.1	0.6			
													orange	mudstone	FP	2.0	1.5	0.8			
													grey	silcrete	FP	3.3	1.9	1.1			
													grey	mudstone	F	1.3	1.5	0.4			
													grey	silcrete	FP	2.0	1.0	0.7			
													pink	silcrete	FP	2.5	1.5	0.9			
													grey	silcrete	F	2.8	3.0	1.0			
													orange	mudstone	FP	2.0	2.0	1.0			
													red/grey	FGS	FP	2.2	1.6	0.7			
													cream	mudstone	FP	3.8	2.5	2.0			
													red	silcrete	FP	3.0	1.8	1.0			
													grey	silcrete	FP	2.0	1.6	0.7			
														quartz	FP	1.5	1.2	0.6			
														quartz	FP	1.6	1.0	0.6			
													yellow	silcrete	FP	1.4	0.8	0.4			
													grey	silcrete	F	2.1	2.9	0.8			
													red/grey	mudstone	F	1.5	1.2	0.5			
													grey	silcrete	FP	1.4	0.7	0.3			
													grey	silcrete	FP	1.0	0.6	0.1			
													pink	FGS	FP	3.0	2.0	0.8			
														quartz	FP	2.0	1.8	0.9			
													yellow	mudstone	FP	2.7	2.6	1.5			
													yellow	mudstone	FP	4.1	2.0	0.7			
													yellow	mudstone	F	2.0	1.6	0.8			
													yellow	silcrete	F	3.4	2.7	1.0			
													grey	silcrete	F	5.0	4.3	1.2			
													grey	silcrete	F	4.7	4.5	1.2			
													grey	FGS	F	7.0	5.1	2.2			
													grey	FGS	FP	3.9	1.5	1.0			

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														grey/red	silcrete	FP	3.0	1.9	1.5			
														grey/pink banded	chert	FP	2.4	2.0	1.9			
														yellow	silcrete	FP	2.3	2.0	0.5			
														pink	silcrete	FP	1.2	1.1	0.3			
														grey/red	silcrete	F	1.7	2.3	0.6			
														grey	silcrete	FP	1.9	0.8	0.7			
														grey	silcrete	FP	0.8	0.8	0.3			
														grey	silcrete	FP	3.0	2.6	1.0			
														red	FGS	FP	4.1	2.5	1.8			
														grey	silcrete	FP	1.2	0.8	0.2			
														red	silcrete	FP	2.8	1.6	1.1	edgewear		
														grey/pink banded	chert	FP	1.4	1.0	0.5			
														grey	FGS	F	1.6	1.6	0.6			
														grey	silcrete	FP	1.8	0.5	0.3			
														grey	silcrete	F	1.7	1.5	0.6			
														pink	silcrete	F	1.1	1.6	0.4			
														pink	silcrete	FP	1.7	0.7	0.3			
														red	silcrete	FP	1.7	1.4	0.5			
														grey	silcrete	FP	1.5	1.2	0.2			
														red	silcrete	FP	2.5	1.7	0.6			
														pink	silcrete	FP	1.9	1.9	0.8			
														yellow	mudstone	F	3.4	2.1	1.2			
														grey	silcrete	FP	1.5	1.2	0.2			
														grey	FGS	FP	2.0	1.5	0.6			
														grey	silcrete	FP	1.2	1.1	0.5			
														pink	silcrete	FP	2.6	2.5	0.7			
														pink	silcrete	F	3.3	1.8	1.0			
														red	silcrete	FP	2.5	2.1	1.3			
														grey/pink banded	chert	F	4.1	2.1	0.6			
														grey	silcrete	FP	2.0	1.5	0.6			
														yellow/grey/red	silcrete	FP	1.7	1.1	0.2			
														grey	silcrete	FP	1.3	1.0	0.5			
														red	silcrete	FP	2.2	2.0	1.0			weathered
														yellow	mudstone	F	1.5	1.6	0.4			
														pink	silcrete	FP	4.1	2.5	1.0			weathered
														grey/pink	silcrete	FP	2.2	1.8	0.8			
														grey	silcrete	FP	2.5	1.3	0.4			
														yellow	mudstone	FP	5.3	3.7	1.3		45	
														red	FGS	FP	1.5	0.8	0.5			
														grey	silcrete	FP	1.7	1.6	0.5			
														pink	silcrete	FP	1.5	1.4	0.4			
														cream/yellow/orange	mudstone	FP	3.5	2.0	1.8			
														cream/yellow/orange	mudstone	FP	3.0	1.8	1.5			
														yellow	mudstone	F	2.8	2.5	0.7			
														grey	silcrete	FP	2.5	1.8	0.9			
														grey/red	FGS	F	3.0	2.0	0.4			
														grey	FGS	FP	2.4	2.0	1.0			
														grey/pink	silcrete	F	1.2	1.2	0.5			
														grey	silcrete	FP	1.3	0.8	0.3			
														pink	silcrete	FP	4.0	2.1	2.0			large inclusions up to 12mm
														grey	silcrete	FP	1.0	0.5	0.3			
														yellow	mudstone	FP	1.5	1.3	0.5		50	
														grey	volcanic	FP	5.0	2.9	1.7			
														yellow	FGS	FP	1.4	1.0	0.7			
														grey	silcrete	F	1.6	1.5	0.4			
														grey/pink	FGS	FP	2.3	2.0	1.2			
														orange	mudstone	FP	3.3	2.4	0.8		50	

Southern Catchment

													grey	silcrete	F	2.0	1.9	0.6			large inclusions up to 16mm
														quartz	FP	1.0	0.4	0.4			
													grey/red	silcrete	F	1.9	1.6	0.3			
													orange	mudstone	FP	1.1	1.0	0.5			
													pink	silcrete	F	2.0	1.4	0.6			
													yellow	silcrete	FP	2.1	1.5	0.9			
													red	FGS	FP	1.6	1.3	0.3			weathered
														quartz	FP	1.5	1.3	1.0			
													grey	silcrete	F	1.6	2.1	0.4			
													grey	FGS	FP	1.2	1.2	0.5			weathered
													yellow	mudstone	FP	1.0	0.7	0.4		20	
													grey	silcrete	FP	1.4	0.9	0.2			
													grey	silcrete	F	1.6	1.8	0.5			large inclusions up to 15,,
													grey	silcrete	FP	2.0	1.7	0.4			
													grey	volcanic	FP	3.9	3.8	0.6			weathered
													grey	silcrete	FP	2.3	2.0	0.7			inclusions up to 16mm
													grey	mudstone	FP	2.1	1.3	0.4			
													grey	mudstone	FP	1.7	1.5	0.5			
													grey	silcrete	F	1.6	1.2	0.6			
														quartz	FP	0.8	0.7	0.4			
													red/orange	FGS	FP	1.9	0.6	0.5			weathered
														quartz	FP	1.1	1.0	0.8			
														quartz	FP	0.8	0.7	0.7			
													pink	silcrete	FP	1.6	1.3	0.9			
													yellow	mudstone	FP	1.4	1.0	0.6			
													grey	silcrete	FP	1.9	1.6	0.7			
													pink	silcrete	F	1.0	1.2	0.3	retouch		
													pink	silcrete	FP	1.2	0.8	0.4			
													pink	silcrete	FP	1.5	1.2	0.7			
														quartz	FP	1.2	0.7	0.3			
													grey	silcrete	FP	2.2	1.3	0.5			
													grey	silcrete	FP	1.5	1.4	0.2			
													grey	silcrete	FP	1.0	0.9	0.3			
													grey	silcrete	FP	1.7	1.0	0.4			
													pink	silcrete	FP	0.9	0.6	0.2			
														quartz	FP	0.8	0.6	0.2			
													pink	silcrete	FP	1.3	1.0	0.5			
													pink	silcrete	FP	1.1	1.0	0.3			
													pink	silcrete	FP	2.0	1.7	0.6			weathered
														quartz	FP	1.0	1.0	0.4			
													grey	silcrete	FP	1.7	1.2	0.4			
													grey	silcrete	F	1.7	1.0	0.4			
													grey	silcrete	FP	1.6	1.4	0.5			
													light/dark grey banded	chert	F	1.6	1.5	0.5			
													pink	silcrete	F	0.7	0.7	0.1			
													yellow	mudstone	FP	1.3	1.3	0.4			
													grey	silcrete	FP	1.5	1.0	0.5			
													grey	silcrete	FP	1.1	0.8	0.3			
													grey	silcrete	FP	1.1	1.1	0.2			
													grey	silcrete	F	2.3	2.3	0.7			
													red	silcrete	FP	1.6	0.8	0.3			weathered
													pink	silcrete	FP	1.3	1.0	0.4			
													pink	silcrete	F	4.5	3.9	1.0			inclusions up to 6mm
													grey/red	volcanic	Fractured piece	4.8	3.6	1.6			weathered
													yellow	volcanic	FRP	5.9	4.6	2.3			
													red	FGS	FRP	12.0	9.0	5.0			possible pebble tool

65	S18	292000	6429300	OCS	gully	gully erosion and exposure on flats of gully bank	10x5	95	90	on eroded surface and gully sides	deflated	29	grey	FGS	FP	2.7	2.0	0.8			weathered
													grey	silcrete	FP	2.9	2.2	0.7			
													red	FGS	FP	2.3	1.4	0.7			
														quartz	F	1.6	1.2	0.5			distinct point of impact
													grey	silcrete	FP	2.6	2.3	0.5			
													grey/pink	FGS	FP	2.0	2.0	1.0			
													yellow	mudstone	FP	1.5	1.0	0.3			
													yellow	mudstone	FP	2.3	1.6	0.7			
													grey	FGS	FP	2.3	1.4	1.3			
													grey	silcrete	F	1.5	1.0	0.1			
													pink	silcrete	F	3.0	2.2	1.0			
														quartz	FP	1.9	1.0	0.3			
													grey	silcrete	F	2.5	2.0	0.5			
														quartz	FP	3.0	2.1	1.8			
													red	FGS	piece	2.8	1.5	0.8			weathered
													grey	mudstone	F	2.8	2.3	0.5		20	
													cream	mudstone	FP	1.3	1.1	0.3			
													yellow/orange	mudstone	F	3.0	2.2	0.5	retouch and edgewear		
													yellow/orange	mudstone	F	3.5	2.5	0.4			
													yellow/orange	mudstone	FP	2.0	1.3	0.5	fine retouch one side		
													cream/orange	mudstone	F	3.3	2.2	1.1			
													red	mudstone	F	2.6	2.8	0.7			step fracture
														quartz	FP	1.0	1.0	0.7			
													yellow	mudstone	F	2.3	1.7	0.5			
													yellow/grey	mudstone	F	1.8	1.6	0.4		20	
													red	mudstone	FP	1.9	1.4	0.3			
													orange	mudstone	FP	2.0	1.4	0.9			
													yellow	mudstone	FP	3.3	3.2	1.0		30	
													black	chert	C	5.2	5.0	4.0			
66	S19	292650	6430150	OCS	hillslope (although on minor drainage line)	exposure along side gully erosion	covering 70m along minor gully	50	40	on eroded surface	disturbed	5	cream	mudstone	F	4.0	4.0	1.5			weathered
													yellow	mudstone	FP	1.5	1.2	0.2			weathered
													grey	silcrete	F	1.8	1.4	0.6			
													grey	FGS	FP	4.8	4.7	2.3	appears to have retouch on circular edge	50	possible small pebble tool
													grey/red	silcrete	F	2.4	1.0	1.0			weathered
67	S20	292600	6430250	OCS	hillslope (although on minor drainage line)	on western gully hillslope wash erosion	4x5	40	40	on eroded surface	disturbed	2	grey	FGS	FP	4.4	3.6	1.6	possible retouch or edgewear on rounded edge	40	possible small pebble tool
													grey/red	mudstone	F	2.6	2.0	1.1		30 (red)	

Southern Catchment

68	S21	292750	6430300	OCS	hillslope (although on minor drainage line)	surface erosion on gully hillslope	50x50	50	40	on eroded surface	disturbed	8	red	FGS	FP	5.7	3.8	2.5		40	quartz-like inclusions
													pink	FGS	FP	3.2	2.6	2.3			weathered
													grey	silcrete	FP	2.0	1.2	0.9			
													grey	silcrete	FP	3.6	3.0	1.0			weathered
													grey	silcrete	FP	3.0	2.8	1.5			inclusions up to 16mm
													grey	silcrete	FP	2.0	1.5	0.7			
														quartz	FP	1.5	1.0	0.4			
														quartz	FP	1.5	1.5	1.0			
69	S22	292650	6430050	ISF	hillslope (although on minor drainage line)	cattle track		90	80	exposure on track	disturbed	1	grey/red	silcrete	FP	4.1	2.3	1.9		10 (red)	
70	S23	292700	6429950	OCS	gully	surface exposure	15x5	80	80	on side of bank	disturbed	4	grey/pink	silcrete	F	4.2	3.6	1.3		10 (red on platform)	
													grey/yellow/red	silcrete	F	3.5	1.9	0.8		10 (red on platform)	
													grey	silcrete	F	0.8	1.1	0.2			
													pink	silcrete	F	1.2	1.4	0.3			
71	S24	292700	6430050	OCS	gully	exposure/gully sides	15x10	60 to 80	80	both banks	disturbed	2	cream	mudstone	F	2.8	2.9	1.0			
														quartz	FP	3.5	2.0	1.3			
72	S25	292950	6430050	OCS	hillslope (lower to mid)	slope wash exposure on hillslope	40x25	40	50	on clayey surface	deflated	2	yellow	mudstone	F	3.3	5.1	1.2			weathered
													grey	FGS	FP	1.8	1.7	0.3	retouch around edges		weathered
73	S26	293000	6430150	ISF	gully	surface erosion	50x20	40	40	eroded surface	disturbed	1	grey	FGS	FP	5.0	3.2	2.0	possible retouch both sides		weathered
74	S27	293100	6430200	OCS	hillslope (at top of natural minor drainage line)	sheet erosion	30x20	60	70	on eroded surface	disturbed	3	cream	mudstone	F	2.1	2.0	0.4			
													grey	silcrete	FP	2.8	2.0	1.3			
													red	silcrete	C	4.3	6.3	5.6			weathered

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75	S28	293350	6430350	OCS	ridge	surface erosion - cattle track and adjacent to fenceline	approx 45m along cattle track exposure	50 to 80	60 to 80	on track	disturbed	6	dark grey	FGS	F	2.8	2.6	0.8			
													grey	silcrete	FP	4.8	2.7	2.2			
													grey	silcrete	FP	2.6	2.0	1.5			
													grey	silcrete	FP	4.3	3.1	1.5			
													pink/grey	FGS	FP	5.4	4.4	2.5			weathered
													grey	silcrete	FP	2.9	2.6	1.5			
76	S29	293300	6430150	ISF	ridge	ants nest exposure	10x3	90	80	on eroded surface	disturbed	1	red	mudstone	F	2.6	3.6	0.9			
77	S30	293250	6430000	OCS	ridge	ants nest	10x3	90	90	exposure around ants nests	disturbed	4		quartz	FP	2.5	1.5	0.5			
														quartz	FP	1.5	1.0	0.5			
														quartz	FP	3.0	2.0	1.0			
													red	mudstone	FP	4.0	3.6	0.7			
78	S31	293200	6429850	OCS	ridge	sheet erosion and around ants nest	20x3	95	90	on eroded surface	disturbed	9	grey	silcrete	F	3.6	2.8	0.9			
														quartz	FP	2.1	1.9	1.0			
														quartz	FP	2.2	1.7	1.0			
													cream/grey	mudstone	F	2.6	2.5	0.7			
													yellow/grey	silcrete	F	7.1	4.3	2.7			
													grey/red	silcrete	FP	3.2	1.8	1.5			
													grey/red	silcrete	F	1.3	1.5	0.3			
													pink/red	silcrete	FP	2.9	1.2	0.3	retouch one side		conjoining pieces
													pink/red	silcrete	FP	2.5	1.8	0.5	retouch one side		conjoining pieces
79	S32	293100	6429750	OCS	hillslope (upper)	surface erosion/cattle track on hillslope	track 1m wide	80	80	on eroded track	disturbed	4	grey	silcrete	F	1.0	1.0	0.5			
													grey	silcrete	FP	2.4	1.9	1.0			
													red	silcrete	FP	1.4	1.4	0.3			
														quartz	FP	1.5	0.9	0.3			
80	S33	292950	6429700	OCS	ridge	minimal exposure		5	5	amongst grass	stable	3	cream/pink	mudstone	FP	3.1	2.5	1.0			weathered
														quartz	FP	1.5	1.0	0.5			
														quartz	FP	2.8	1.6	1.0			

	S34			skipped this site number in the field																
	S35			skipped this site number in the field																
	S36			skipped this site number in the field																
81	S37	292750	6429650	ISF	hillslope (upper)			5	5	amongst grass, just above dam	stable	1		quartz	FP	2.2	2.0	0.9		
82	S38	292650	6429600	OCS	hillslope (upper)	ants nest	10x15	80	60	exposure around ants nest	disturbed	2	grey	silcrete	F	2.5	2.4	0.8		
													grey	silcrete	FP	2.5	2.5	1.2		
83	S39	292450	6429500	OCS	hillslope	surface erosion	25x5	50	40	eroded surface	disturbed	9	pink	silcrete	FP	2.7	2.0	0.7		
													grey	chert	FP	2.2	1.2	1.0		
													grey	FGS	FRP	4.2	2.5	2.5		
													grey/pink	silcrete	F	3.4	2.1	1.0		
													pink	mudstone	FP	2.3	2.0	0.6		
													red	FGS	FP	4.0	3.9	1.0		weathered
													red	FGS	FP	3.6	3.0	1.0		weathered
													red	FGS	FP	6.6	3.5	1.5		weathered
													red	FGS	FP	6.5	3.1	1.6	possible retouched edge	weathered
84	S40	292300	6429550	OCS	hillslope (upper reaches of drainage line)	surface exposure	15x4	70	70	eroded surface	disturbed	16	grey	silcrete	FP	1.9	1.2	0.2		
													grey	silcrete	F	1.3	1.4	0.3		
													grey	silcrete	FP	1.9	1.0	0.5		
													grey	silcrete	FP	2.0	0.9	0.5		
													grey	silcrete	FP	2.1	1.3	0.8		
													yellow/grey	silcrete	FP	1.3	1.0	0.2		
													pink/red	silcrete	FP	3.2	2.4	0.8		weathered
													red	silcrete	F	2.1	2.2	0.6		
													pink/red	silcrete	FP	2.1	1.1	0.8		
													grey/pink	silcrete	FP	7.3	3.5	2.5		
													grey/yellow	mudstone	F	1.9	0.7	0.2		
													pink	mudstone	FP	1.4	0.8	0.3		
													grey	mudstone	FP	1.7	1.2	0.4		

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													orange	mudstone	piece	1.4	1.2	0.3			weathered
														quartz	FP	1.9	1.0	0.9			
													red	FGS	FP	1.8	1.6	0.6			weathered
85	S41	292350	6429650	OCS	hillslope	hillslope wash	15x7	40	40	on exposed surface	disturbed	13	pink	silcrete	FP	3.1	1.7	1.0			
													grey/light grey banded	FGS	piece	2.7	1.9	0.5			
													grey	FGS	FP	2.5	2.5	1.6			
													grey	silcrete	F	1.8	2.3	0.4			
													grey	silcrete	F	1.7	1.9	1.1			
													grey	silcrete	FP	2.0	0.9	0.5			
													grey	silcrete	FP	2.6	1.7	0.4			
													pink	silcrete	FP	1.7	1.0	0.2			
													pink	silcrete	FP	3.0	1.6	1.0			
													pink	silcrete	FP	2.9	2.7	1.1			
													pink/grey	FGS	FP	4.5	3.1	1.1			weathered
													grey	silcrete	FP	3.5	2.0	1.3			
													red	volcanic	FRP	8.5	6.6	4.6			possible pebble tool fractured at one end and rounded at the other end
86	S42	292350	6429650	OCS	hillslope (lower)	surface erosion and in gully itself	1x1	80	70			2	pink	silcrete	F	4.0	2.3	1.0			
													orange	mudstone	C	6.8	5.5	2.2			flake used as a core
87	S43	292350	6429750	OCS	hillslope	ants nest and exposure	12x10	30 to 80	80	on eroded surface	disturbed	26	grey	silcrete	F	3.8	5.0	1.2			
													grey	silcrete	FP	3.8	2.8	2.1			
													pink	silcrete	FP	4.2	2.4	1.7			
													pink	silcrete	FP	1.3	0.7	0.2			
													red	silcrete	F	2.3	0.9	0.5	retouch; starting to fashion BB		
													pink	silcrete	FP	1.5	1.3	0.2			
														quartz	FP	2.2	2.1	0.5			
													grey	silcrete	FP	2.1	1.8	1.2			
													pink	silcrete	FP	2.7	1.8	1.1			
													grey	silcrete	FP	2.5	1.1	1.7			
													pink/red	silcrete	FP	2.5	2.4	1.3			
													pink	silcrete	FP	3.3	1.9	1.0			
													pink	silcrete	F	1.9	1.3	0.5			
														quartz	FP	1.2	1.0	0.7			
														quartz	FP	2.2	1.5	1.2			
														quartz	FP	1.5	0.9	0.4			
													pink/grey	silcrete	FP	3.1	1.7	1.1			
													red/grey	silcrete	FP	3.1	3.1	2.1			
													cream	volcanic	FRP	4.1	4.0	2.1			
													grey	silcrete	FP	1.8	1.4	0.7			
														quartz	FP	1.5	0.5	0.6			
													pink/grey	silcrete	FP	1.3	1.2	0.5			
													grey/pink	silcrete	F	1.8	1.6	0.4			

Southern Catchment

												pink/red	silcrete	FP	1.6	0.8	0.4			
												pink	silcrete	FP	1.4	1.1	0.3			
												grey	silcrete	C(cobble)	14.1	8.8	9.2			fractured and weathered
88	A1	292150	6430150	OCS	hillslope (upper and on minor drainage line)	erosion around upper reaches of drainage line	50x10	40	70-80	on eroded surface	disturbed	8	dark red	FGS	FP	5.0	3.0	2.0			
													red/yellow	mudstone	FP	4.5	4.5	1.0			
														quartz(rose)	FP	4.0	3.5	1.8			
													pink	silcrete	F	5.0	4.0	1.5			
													pink	silcrete	F	4.5	3.1	1.5		30	
													yellow/grey	silcrete	FP	3.5	2.5	1.0			
													grey	silcrete	FP	3.5	2.0	1.5			
													yellow	silcrete	FP	7.0	5.0	3.0			
89	A2	292300	6429950	OCS	hillslope (upper and on minor drainage line)	eroded gully bank around dam	7x2	60	60	eroded surface	disturbed	2	red	silcrete	F	2.5	4.0	1.5			
													yellow	silcrete	FP	3.0	1.8	0.6			
90	A3	292150	6429950	OCS	hillslope	main vehicle track	150x2 along approx 150m of track 2m across	100	50-90	on dirt track	disturbed	26	red	mudstone	F	2.0	2.0	0.3			step fracture
													yellow	mudstone	FP	4.0	3.0	1.3			
													red	mudstone	FP	5.5	4.0	2.0			
													yellow	mudstone	FP	4.0	2.5	0.8			
													pink	silcrete	F	3.1	1.0	0.5			
													pink	silcrete	F	4.5	5.0	1.3			
													grey	silcrete	FP	2.0	2.0	1.0			inclusions up to 8mm
													pink	silcrete	FP	2.5	1.8	0.5			
													pink	silcrete	FP	3.5	2.0	0.5			
													grey	silcrete	FP	2.3	2.0	0.6			
													grey	silcrete	FP	2.5	2.2	0.5			
													grey	silcrete	FP	2.5	1.0	0.6			
													grey	silcrete	FP	2.5	2.0	1.0			
													yellow	silcrete	FP	2.2	1.2	0.8			
													yellow	silcrete	FP	4.4	4.2	2.3			
													yellow	silcrete	FP	1.0	1.0	0.3			
													grey	silcrete	FP	3.8	3.5	2.8			
													pink	silcrete	FP	5.0	4.0	1.5			
													grey	silcrete	FP	4.0	3.0	0.8			
													red	silcrete	FP	4.0	3.5	0.8			
													grey	silcrete	FP	3.0	2.0	0.8			
													grey	silcrete	FP	3.5	2.0	0.8			
													white	silcrete	C(cobble)	4.4	5.8	4.1			
													pink	silcrete	C(cobble)	5.0	7.8	3.8			
													grey	silcrete	C(cobble)	7.0	6.3	5.4			
													white	silcrete	C(cobble)	4.5	6.3	4.2			weathered, no point of impact, fractured

Rail Link

Site	Field Site Number	Grid Ref (mE)	Grid Ref (mN)	Site Type	Landform Unit	Type of Exposure	Extent (l x w) metres	Site Exposure (%)	Site Visibility (%)	Artefact Context	Site Condition	Number of Artefacts	Colour	Raw Material	Artefact Type	Length	Width	Thickness	Retouch Usewear	Cortex (%)	Comments
91	Bengalla	293520	6426880	OCS	slope	erosion along cattle track and adjacent to fenceline	5x1	60	70	surface	disturbed	9	yellow	mudstone	F	2.2	2.2	0.5	retouch		
													yellow	mudstone	FP	1.7	1.5	0.4			
													yellow	mudstone	FP	5.7	2.3	2.0			weathered
													orange	mudstone	FP	0.8	0.5	0.1			
													grey	silcrete	F	1.4	1.2	0.3			
													grey	silcrete	F	1.9	2.0	0.8			
													pink	silcrete	F	1.6	1.3	0.4			snapped
													grey	silcrete	FP	2.0	1.8	0.8			
													pink	silcrete	FP	3.7	2.8	1.1			

MT PLEASANT MINE EIS

North-West Emplacement Area

Archaeological Investigations

For:
COAL & ALLIED OPERATIONS PTY LIMITED

May 1996
94019RP7

Report No. 94019RP7

This report has been prepared in accordance with the scope of services described in the contract or agreement between ERM Mitchell McCotter Pty Ltd ACN 002 773 248 (ERMMM) and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client and ERMMM accepts no responsibility for its use by other parties.

Approved by:	*Robert McCotter*
Position:	Project Director
Signed:	
Date:	*4 September 1997*

ERM Mitchell McCotter Quality System

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INTRODUCTION

Archaeological investigations were conducted in an area adjacent to, and to the north-west of, the Mount Pleasant Authorisation to determine the presence or otherwise of archaeological relics and Aboriginal places in accordance with Part VI of the National Parks and Wildlife Act 1974. The location of the survey area is shown on *Figure 1*.

Objectives of the study were to:

- identify items of Aboriginal heritage;
- assess the impact associated with the proposed use of the area on Aboriginal sites; and
- to provide management recommendations and safeguards for items of Aboriginal heritage identified during the field investigation.

This report forms an addendum to the main archaeological study for the Mount Pleasant project completed by Rich (1996). The main study discusses the archaeological context and environment of the study area.

2

INVESTIGATIONS

2.1 METHODOLOGY

The area was investigated by foot traverse for items of Aboriginal heritage. Sample units were selected based on local environmental and geographic factors, ground surface exposure and potential site locations. Exposures of the ground surface where items may be found, including erosion patches, dirt tracks and around ants nests were thoroughly inspected. The vegetated areas off the dirt tracks consisted of a ground cover of grass with dispersed trees. Transects were made through the vegetated areas to sample those areas where visibility of the ground surface was low. Particular attention was given to the drainage lines within the study area as Aboriginal sites are often associated with creeklines.

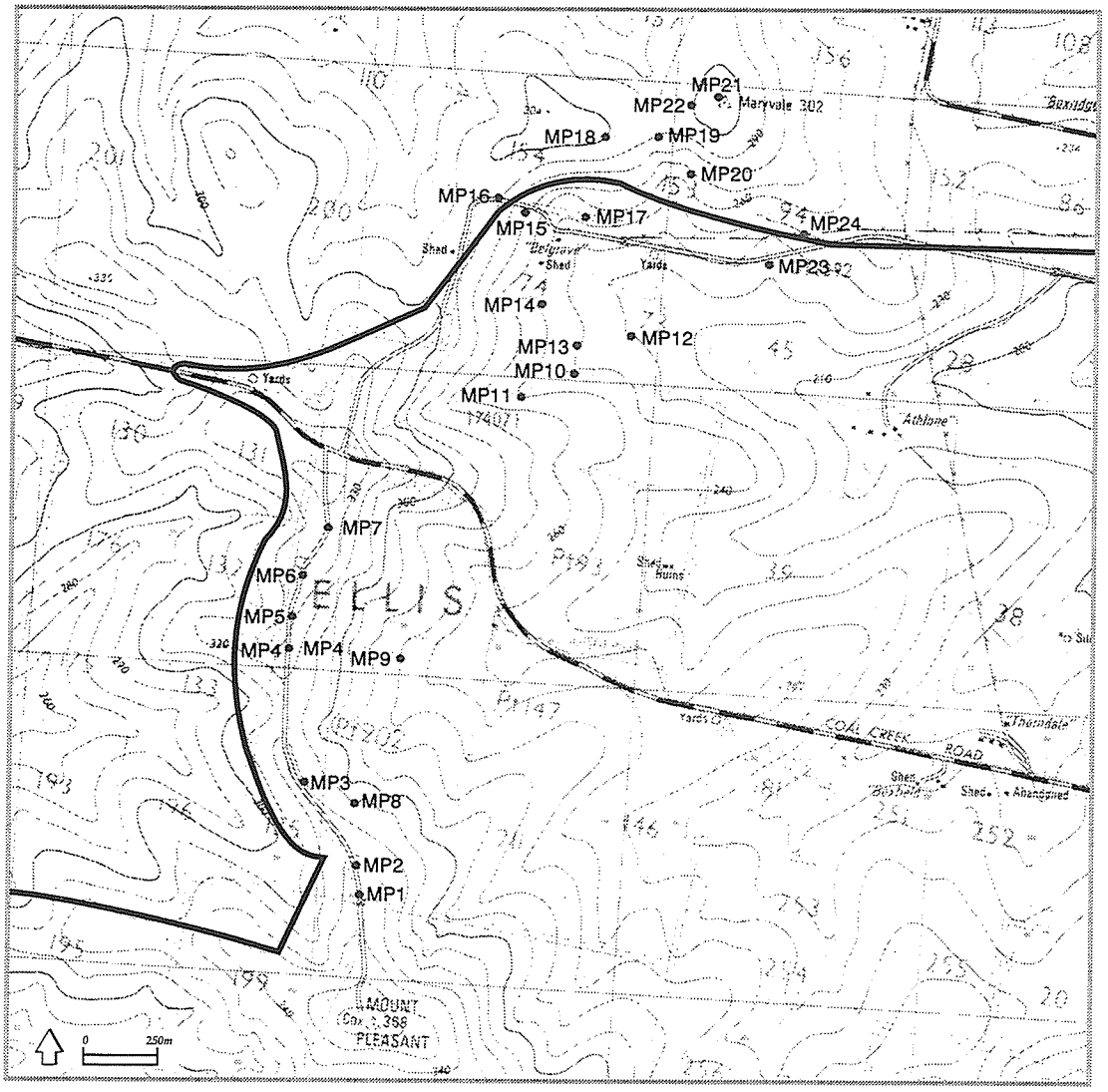
The previous archaeological survey of the area (Rich, 1996) located sites on ridges, hillslopes and gullies and all these landform elements were surveyed. Archaeological work in the Hunter has generally found that drainage lines are generally the most archaeologically sensitive landscape unit.

Sites identified in the field were recorded in a field diary. All factors associated with each site, such as surface visibility, vegetation cover, raw materials, artefact types and location, were noted. Sites will be registered with the Aboriginal Sites Register at the National Parks and Wildlife Service on National Parks and Wildlife Service Standard Recording Forms.

2.2 SURVEY RESULTS

2.2.1 Description

Twenty-four Aboriginal archaeological sites were identified during field investigations. These were all open artefact scatters. Each site was recorded as Mount Pleasant (MP) 1 to 24 in the order in which they were identified. Artefact locations are shown on *Figure* 2, and discussed below. Locations and distances provided are indicative only and were based on field interpretation and not survey. The location of each site is also stated using grid references from the Central Mapping Authority 1:25000 map referenced Aberdeen, 9033-1-S.



● Indicates Aboriginal Archaeological Sites

Figure 1 ARCHAEOLOGICAL SITES

Sites MP1 to MP7 were located along the track leading from Coal Creek Road to Mount Pleasant.

MP1 (1:25,000 294150E; 6432290N)

Artefacts were exposed on the ridgeline dirt track. They were located approximately 30 metres north of a gate in the southern fenceline of the paddock where the track leads to the Geodetic (or "trig") Station on Mount Pleasant. Ground surface visibility was 100 per cent on the track. Vegetation off the track consisted of grass, tussocky grass and trees. Artefacts included two grey silcrete flakes and a quartz flaked piece.

MP2 (1:25,000 294120E; 6432370N)

Artefacts were located approximately 70 metres north along the track from MP1. These were not in a discrete concentration, rather they were dispersed along the track for around 80 metres. Artefacts included a pinky grey chert flake, a grey silcrete flake 38 metres away then another grey silcrete flake 44 metres along the track.

MP3 (1:25,000 293900E; 6432650N)

This site was observed a further 100 metres along the track from MP2 in a northerly direction. A grey silcrete flake, a grey mudstone flaked piece and a quartz flaked piece were exposed on the track. Artefacts 18 metres away included six grey silcrete flakes, a white/grey chert flake and a quartz flaked piece. A further 11 metres along the track were a grey silcrete flake and two quartzite flaked pieces. Four grey silcrete flakes and a pinky grey mudstone flaked piece were located four metres away on the track. Approximately 50 metres north along the track a red silcrete flake was observed.

MP4 (1:25,000 293850E; 6433090N)

A small concentration of artefacts was located approximately 250 metres along the track from the last artefact observed in MP3. The site consisted of two grey silcrete flakes and one red silcrete flake with a grey corner.

MP5 (1:25,000 293850E; 6433170N)

Two grey silcrete flakes and two flaked pieces of grey/red petrified wood were observed a further 80 metres along the track.

MP6 (1:25,000 293870E; 6433270N)

An isolated artefact was located approximately 100 metres along the track from MP5. This was a pinky grey silcrete flake.

MP7 (1:25,000 293950E; 6433450N)

This last site observed along the ridgeline track in this paddock was located approximately 165 metres north of MP6 and ranged across about 46 metres of track. Artefacts included a quartz flaked piece, two grey silcrete flakes, a quartz flake, a small grey silcrete core, a grey chert flake and a pinky grey silcrete flake.

MP8 (1:25,000 294160E; 6432570N)

This site was located on the hillslope to the east of the ridgeline track to Mount Pleasant. It was found while making a transect through the paddock in a north/north-easterly direction from MP1. Artefacts were exposed in an eroded area approximately six metres by three metres. A grey silcrete flake and a petrified wood flaked piece were observed. A quartz flaked piece was also identified in an exposure 15 metres to the north. The exposure measured approximately 20 metres by ten metres.

MP9 (1:25,000 294220E; 6433040N)

A large cream silcrete flake was identified on the ground surface (that is vegetated with grass, not an eroded exposure) on the hillslope above a drainage line.

MP10 (1:25,000 294740E; 6434000N)

Two quartz flaked pieces were identified in eroded areas around an ants nest approximately ten metres from an unnamed drainage line.

MP11 (1:25,000 294540; 6433930N)

Two quartz flaked pieces were observed on an eroded walking track which ran parallel to the drainage line referred to in MP10. The site is located to the south-west of MP10.

MP12 (1:25,000 294910E; 6434160N)

A site was observed approximately 200 metres north-east of MP10, along the same drainage channel. Artefacts were visible on and around two ants nests and associated exposures. The site was approximately ten metres from the channel. Artefacts consisted of two grey silcrete flakes, a pink silcrete flake, a pinky grey silcrete flake, two cream chert flaked pieces and a quartz flaked piece.

MP13 (1:25,000 294730E; 6434150N)

An isolated creamy yellow chert flake was identified along a small gully approximately 200 metres west of MP12.

MP14 (1:25,000 294610E; 6434260N)

An isolated grey silcrete flake was found on the southern side of a drainage line in an erosion gully with the man-made easement on the eastern side.

MP15 (1:25,000 294550E; 6434550N)

An isolated quartz flake was observed on the hillslope track upslope in a north-westerly direction. The site is approximately 150 metres from "Belgrave" homestead (as referred to on the 1:25,000 topographic map).

MP16 (1:25,000 294430E; 6434570N)

Artefacts were identified along the track approximately 100 metres upslope from MP15. These were a grey silcrete flake and a reddish pink silcrete flake.

MP17 (1:25,000 294740E; 6434510N)

An isolated pink (with some red through it) silcrete core was found in an eroded area between the track and the northern fenceline of this paddock. No other artefacts were visible in the vicinity even though the surrounding vegetation was only short grass.

MP18 (1:25,000 294760E; 6434800N)

Artefacts were identified along a faint ridgeline vehicle track which was mostly grassed over. Artefacts included a pinky grey silcrete core, a chert flake and a pink silcrete core.

MP19 (1:25,000 294960E; 6434800N)

Artefacts were observed further along the ridge and to the east of MP18. Two grey chert flakes, a grey silcrete flake, a quartz flake, a chert flake and a pink and grey silcrete core were scattered on the ridgeline. A pink, red and grey banded chert flake was found ten metres downslope and to the south of the other artefacts.

MP20 (1:25,000 295070E; 6434730N)

An isolated grey silcrete flake was identified in an area of gully erosion on the upper slopes. Other eroded areas were in the vicinity but contained no visible artefacts.

MP21 (1:25,000 295150E; 6434950N)

A site was identified on the high point of the ridge contains the Maryvale Geodetic Station. The majority of the ridge top in this area was grassed (90 per cent). A grey silcrete flake which had been used as a core was found in an exposure around the Geodetic Station. A grey silcrete flake was found approximately 50 metres to the west on a one-lane dirt track.

MP22 (1:25,000 295050E; 6434930N)

A grey silcrete flake was identified approximately 50 metres west from MP21 along the dirt track. A further 18 metres along the track was a silcrete flake which was grey with a red platform.

MP23 (1:25,000 295370E; 6434410N)

An isolated quartz flaked piece was found approximately ten metres east of the drainage line in a ground surface exposure. Most of the drainage line was grassed in the section where it crossed the dirt road (which runs west off Dorset Road).

MP24 (1:25,000 295460E; 6434510N)

A large pink silcrete core was identified approximately 100 metres north-east of MP23, upslope from the drainage line.

2.2.2 *Summary*

A total of 79 artefacts were found at 24 artefact locations. The majority of sites (11 or 45.8%) contained two to four artefacts, followed by nine (37.5%) isolated artefacts, three sites (12.5%) with five to ten artefacts and one site (4.2%) with more than ten artefacts. This distribution of artefacts is similar to that found in the Authorisation (Rich, 1996). Isolated artefacts were the dominant site recorded by Rich.

Artefacts included knapping debris such as flakes, flaked pieces and cores. No backed blades or retouched and used flakes and pieces were found in the assemblages.

Artefacts were located on ridge tops, hillslopes and along drainage line gullies. This fits the pattern of artefact location identified in the Authorisation (Rich, 1996).

3

SIGNIFICANCE ASSESSMENT

3.1 ASSESSING ARCHAEOLOGICAL AND ABORIGINAL SIGNIFICANCE

The basic processes of assessing significance for items of heritage are outlined by *The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance: The Burra Charter* and its associated *Guidelines*. Significance is a concept used to identify and assess attributes which make a place of value (Kerr 1985). Heritage assessment guidelines from the Department of Planning (1990) propose a range of values which indicate some of the types of significance often used in heritage assessment, including archaeological and Aboriginal significance.

3.1.1 Archaeological

Archaeological significance requires an item to have the potential to define or expand knowledge of earlier human occupation, activities and events through archaeological research. Often the fabric of the item itself, rather than its associated historical documentation, provides the necessary evidence. Items of archaeological significance can be relics, archaeological deposits and landscapes.

Archaeological relics include objects which provide information about everyday life in the past and about how things were made and used. Examples of relics include artefacts made from stone, bone, wood or plant.

Archaeological deposits, through the relics they contain and by means of the layers in which they lie, provide evidence of the sequence of past events. Examples of these deposits include open camp sites or middens.

Aboriginal archaeological sites have importance for scientific research into the prehistory and settlement of Australia, and into processes of cultural adaptation in a changing environment. Sites offer opportunities for education and understanding the past.

In general terms, it is usual to assess individual sites as significant if:

- they are large, dense artefact concentrations;

- they have potential for dating; or
- they have signs of particular activities such as knapping floors, heat treatment pits, or hearths.

These features can be unreliable as the only guides to significance, particularly in view of the reliance on erosion to reveal surface indications of sites, and available subsurface sampling methods. Therefore, consideration of other sites in the region should provide further basis for the assessment of the archaeological value of a site.

Representativeness is determined where, as more sites are destroyed those that remain, become more valuable and more representative of what is left.

3.1.2 Aboriginal

Aboriginal sites and relics can be assessed by their cultural heritage value, as well as the traditional, historic and social Aboriginal significance.

Aboriginal archaeological sites are of specific cultural heritage significance and social value to Aborigines. These sites are the tangible form of evidence relating to the antiquity, history and variety of Aboriginal culture during the past 40,000 years. Sites are also a major source of evidence relating to the impact of the last 200 years of colonisation.

Aboriginal culture places great emphasis on a sense of place. Religious beliefs and understanding of the natural world have sacred significance. Such places may be natural features such as waterholes or mountains, or they may be built structures like bora rings and stone arrangements.

Traditional significance is often not known unless there are older people who have some knowledge of traditional Aboriginal culture. Sites can be afforded this significance via oral history and archival research.

Places such as missions, reserves, cemeteries and fringe and itinerant camp sites are the heritage of the past 200 years. They are important to Aborigines as a consequence of the continuation of their cultural practice of linking their sense of identity to the places where they and their forebears have lived.

Aboriginal significance is taken as the perceived and expressed view of significance of the Aboriginal community in the present and not necessarily to its traditional significance to people in past times. It is important that the significance of sites to modern Aboriginal people as part of their living culture be used to assess Aboriginal significance (Davidson *et al.*, 1993). These statements are made on the premise that it is difficult for a non-Aboriginal person to assess the significance of Aboriginal sites.

In Australia, all sites have some significance to Aboriginal people. Within this concept of significance some sites have particular traditional, historic or contemporary value to particular Aboriginal people. The antiquity of a site is not necessarily a guide to the significance to Aboriginal people. Aboriginal significance of sites is a matter for the Local Aboriginal Land Council to determine.

3.2 SIGNIFICANCE OF THE STUDY AREA

The area adjoining the Mount Pleasant Authorisation assessed in this study was of low archaeological significance. The majority of sites were either small scatters of artefacts or isolated finds. The site with twenty artefacts had low artefact density as the artefacts were scattered over a distance of 100 metres.

Artefacts were mostly observed on eroded tracks and in other eroded areas. Some artefacts were found on the grassed ground surface. There is potential for artefacts to exist in the study area which were not identified during the present survey. However, open sites with depth of deposit are not considered likely in the study area as excavated soil pits have shown that the first layer is usually around ten centimetres and consists of a clay loam or light clay. No artefacts were observed *in situ* on inspection of the soil test pits. A number of these pits were located near recorded archaeological sites.

The study area has low archaeological potential to provide specific information on regional issues of past Aboriginal use of the landscape as it was consistent with other archaeological resources in the region.

Aboriginal significance is an issue for the appropriate Aboriginal bodies to decide. Wanaruah Local Aboriginal Land Council and the Wonnarua Tribal Council are relevant local bodies. Consultation with the Aboriginal community is discussed in Rich (1996).

4

EFFECTS AND RECOMMENDATIONS

4.1 EFFECTS

The proposed development will directly impact those items of Aboriginal heritage identified in the study area during field investigations. All sites would be destroyed by the proposed use of the area.

4.2 RECOMMENDATIONS

The sites are of little archaeological significance. It is recommended that a Consent to Destroy application for each site be submitted to the National Parks and Wildlife Service prior to the commencement of operations.

The National Parks and Wildlife Act (1974) states that *"it is illegal to deface, damage or destroy an Aboriginal relic or place without first obtaining written consent from the Director of the National Parks and Wildlife Service"*.

Should artefacts be identified during development, particularly during disturbance of the ground, the developer is advised to contact the National Parks and Wildlife Service and to cease work in that location pending an assessment of the situation.

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AIR QUALITY ASSESSMENT

6

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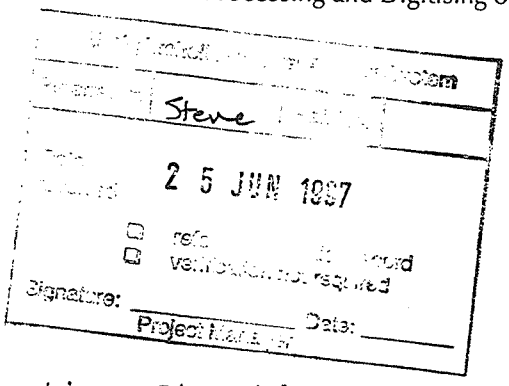
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Coal and Allied Operations Pty Ltd

AIR QUALITY ASSESSMENT FOR THE PROPOSED MT. PLEASANT MINE NEAR MUSWELLBROOK, N.S.W.

(Revision 3.0)

Newcastle,
June 1997

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Figure 6.8(b) Combined isopleth corresponding to a mean annual increment of 2.0 g/m2/month from mining at Mt. Pleasant (Year 20) and Kayuga (Year 21).

APPENDICES

Appendix A. DUST EMISSION INVENTORIES

Table A.1. Dust emission inventory for Year 2 of mining.

Table A.2. Dust emission inventory for Year 5 of mining.

Table A.3. Dust emission inventory for Year 10 of mining.

Table A.4. Dust emission inventory for Year 15 of mining.

Table A.5. Dust emission inventory for Year 20 of mining.

Appendix B. WIND ROSE DIAGRAMS

Appendix B.1. Annual and seasonal wind roses recorded at the main meteorological station.
Year 1995 - December 1994 to November 1995
Year 1996 - December 1995 to November 1996

Appendix B.2. Annual and seasonal wind roses recorded at the second meteorological station (Mt. Pleasant - 2).
Year 1996 - December 1995 to November 1996

Appendix C. DISPERSION MODEL FOR DUST EMISSIONS

1. INTRODUCTION

This report provides the basis for assessment of the effects of the proposed open cut coal mine and processing plant at Mt. Pleasant near Muswellbrook on air quality. A study of the generation and dispersion of atmospheric dust emissions has been carried out for inclusion in the Environmental Impact Statement (EIS) for the development.

Existing air quality in the project area is discussed in Section 2. A brief description of the proposal is given in Section 3. The description includes the main aspects of mining by open cut methods and outlines the sequence of mining, production rates and the equipment used.

The potential for generation of atmospheric dust and the proposed air quality safeguards are outlined in Section 4. Details of the dust emission factors used in the compilation of dust emission inventories are given together with information concerning particle size distributions.

The methodology of dust dispersion modelling is introduced in Section 5. Criteria for the selection of representative years for inclusion in the modelling are given and inventories of dust emissions for the selected years are presented. The meteorological data used in the model are introduced next. An outline of the dust dispersion model completes the presentation in Section 5.

The results of dispersion modelling are presented in Section 6. Long-term rates of dust deposition predicted to result from the operation are given first and related to amenity-based criteria which were specified by the EPA. The predictions are shown in a series of isopleths superimposed on the project site and the impact is assessed for a variety of receptors and land uses.

Predictions of long-term concentrations of total suspended particulates in the ambient air, relevant air quality guidelines and the impact assessment of long-term concentrations are presented in the second part of Section 6.

The last part of Section 6 contains estimates of cumulative dust levels as a result of mining at Mt. Pleasant and a number of nearby coal mines.

The main findings of the study are summarised and the conclusions are presented in Section 7. A list of references, attachments and a glossary of terms complete the report.

2. EXISTING AIR QUALITY

Air quality in the Hunter Valley is largely determined by

coal mining and power generation. While coal mining does not contribute to ambient levels of oxides of sulphur and nitrogen which are emitted by the power stations, both mining and power generation result in emissions of atmospheric particulates. Atmospheric dust is also raised by road and rail traffic, agricultural and residential activities as well as by the action of wind. The levels of dust in the air are variable and are often affected by local sources such as roadways and cultivation.

Bayswater and Liddell power stations are located to the south-east of the proposed mine site. Operating coal mines are located generally to the south, south-east and east of the proposed site. An underground mine and surface facilities are located to the north. Open-cut coal mining (the Bengalla Project) has been approved for Authorisation area A438 which is located immediately to the south of the project site.

Intensive cultivation and grazing are agricultural activities which take place throughout much of the surrounding area especially in the vicinity of the Hunter River. The town of Muswellbrook is located to the southeast of the project area and major transport links including the New England Highway and the Main Northern Railway pass through the town.

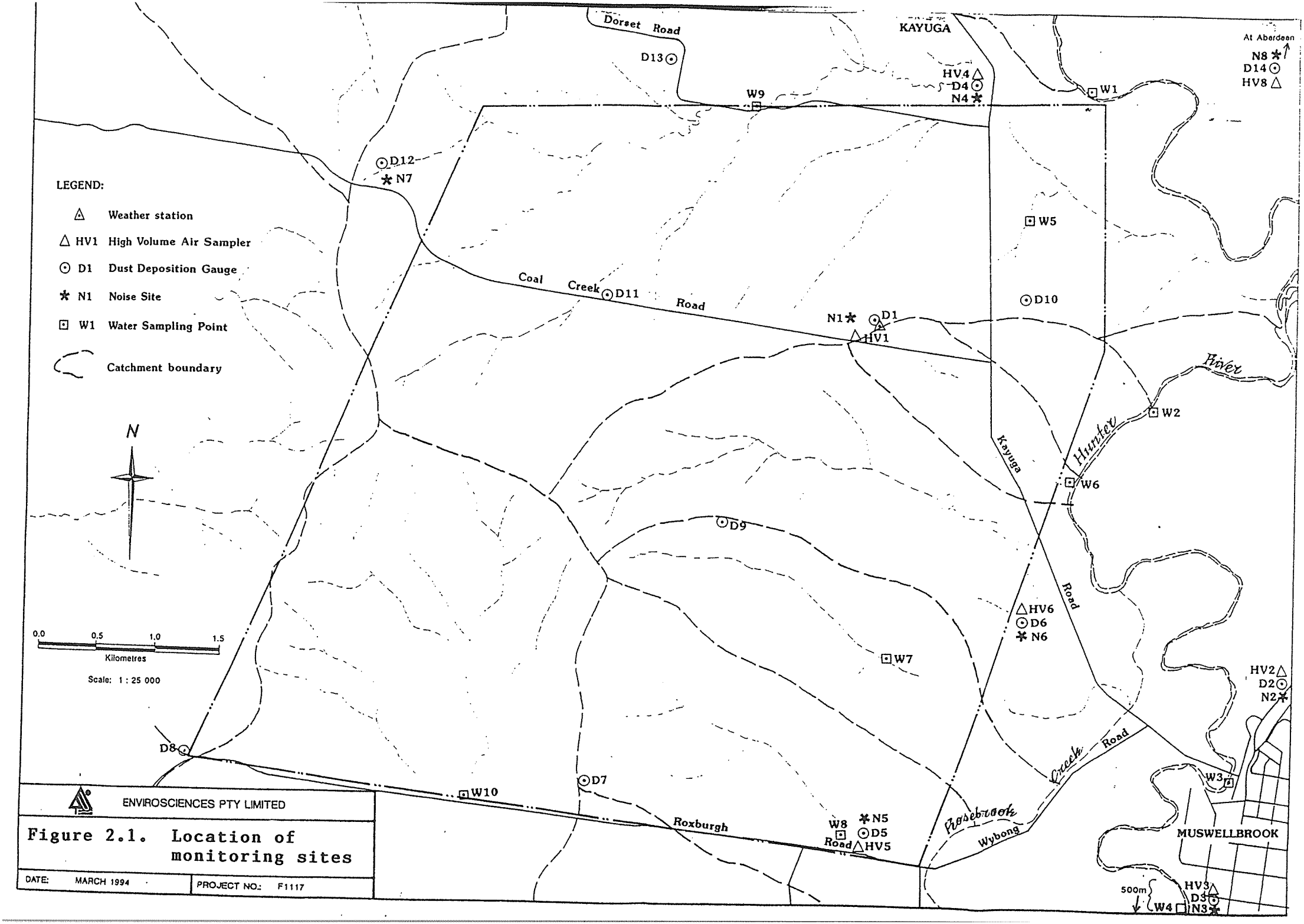
2.1. Dust Deposition

A monitoring programme of dust deposition rates was established at the project site in 1993. The purpose of the monitoring was to characterise the existing air quality in terms of atmospheric dust. Atmospheric dust is generated by a range of activities which have been outlined above. The action of strong winds on dry, barren areas may also result in the generation of airborne dust. Domestic burning contributes to the amount of particulate matter in the air during certain parts of the year.

A network of 14 dust deposition gauges was established to determine monthly rates of dustfall at various locations in the project area. The locations of the monitoring sites can be broadly described as locations within the Authorisation, locations near the perimeter of the Authorisation and finally locations approaching the residential areas of Muswellbrook and Aberdeen. The locations of the individual monitoring sites are shown in Figure 2.1.

Regular sampling commenced in 1993. Deposit gauges were maintained over a period of approximately 30 days, collected and sent to the laboratory for analysis. The mass of dried insoluble solids and combustible matter were determined for each sample.

The mean deposition rates of insoluble solids at each of the



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Figure 2.1. Location of monitoring sites

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14 sampling sites are summarised in Table 2.1 (Envirosciences, 1994, 1995). The mean rate of deposition over the entire period from 1993 to 1996 and the number of valid measurements at each site are also given.

Table 2.1. Mean annual dust deposition rates (g/m2/month) recorded at Mt. Pleasant from 1993 to 1996.

Site	Deposition rate (g/m2/month)				No. of measurements	Average
	1993	1994	1995	1996	1993 - 96	
No. 1	0.6	0.6	0.7	0.5	45	0.6
No. 2	1.4	1.5	1.5	1.3	45	1.4
No. 3	2.0	2.1	2.0	1.2	45	1.8
No. 4	1.5	2.7	1.6	1.0	40	1.7
No. 5	1.4	1.3	1.1	1.6	42	1.3
No. 6	1.1	1.3	1.2	0.9	44	1.1
No. 7	1.4	1.0	1.1	1.1	43	1.1
No. 8	1.5	0.8	1.1	1.0	40	1.1
No. 9	0.8	0.8	0.7	0.4	43	0.7
No.10	1.1	1.5	0.7	1.2	41	1.1
No.11	1.5	1.0	1.0	1.2	41	1.2
No.12	0.5	0.5	0.5	0.6	45	0.5
No.13	0.8	1.4	1.2	0.9	43	1.1
No.14	1.3	1.7	1.4	1.2	44	1.4

The mean annual deposition rates ranged from about 0.4 g/m2/month which was recorded at site No.12 to 2.7 g/m2/month at site No.4 in 1994. The mean dust deposition rate which was recorded at the site No.4 to the south of Kayuga over a period from 1993 to 1996 was, however, 1.7 g/m2/month.

Mean annual rates of dust deposition were consistently less than 2.0 g/m2/month. The only exceptions were sites No.4 near Kayuga with 2.7 g/m2/month in 1994 and site No.3 at the leading edge of Muswellbrook which recorded an annual mean of 2.1 g/m2/month in 1994.

Mean rates of deposition over the entire monitoring period from 1993 to 1996 ranged from 0.5 g/m2/month at site No.12 to 1.8 g/m2/month at site No.3.

The mean fractions of ash remaining in the samples after organic material was removed by combustion varied between about 40 and 70 per cent. These results confirmed that organic material of mainly plant and insect origin was an essential part of the total atmospheric fallout.

The mean deposition rate averaged across the entire monitoring network of 14 sampling sites was 1.2 g/m2/month in 1993, 1.3 g/m2/month in 1994, 1.1 g/m2/month in 1995 and 1.0 g/m2/month in 1996.

2.2. Concentrations of TSP/PM10

The monitoring of total suspended particulates (TSP) and particulate matter with a diameter less than 10 microns (PM10) in the ambient air was undertaken at the same time using a total of 7 monitoring sites. The locations of the sites marked HV1 to HV6 and HV8 were shown in Figure 2.1.

Two high-volume samplers were used to collect particulate matter from the air over a period of 24 hours every sixth day. The aim of the monitoring programme which was carried out according to AS2724.3-1984, was to determine premining levels of TSP/PM10 in the air of the project area.

Table 2.2. Mean annual concentrations of TSP (micrograms/m3) recorded at Mt. Pleasant in 1993 and 1994.

Site	Concentration (ug/m3)		No. of measurements	
	1993	1994	1993	1994
HV 1	20.4	28.0	10	16
HV 2	37.4	48.7	7	13
HV 3	33.7	40.8	11	22
HV 4	21.7	38.5	15	19
HV 5	30.0	43.5	15	12
HV 6	38.2	40.2	13	14
HV 8	42.4	51.7	30	11

The mean values in Table 2.2 were determined as geometric means (Envirosciences, 1994, 1995) and ranged from about 20 to 40 micrograms/m3 in 1993 and about 30 to 50 micrograms/m3 in 1994. The generally higher mean concentrations of TSP which were recorded in 1994 were most likely a result of very dry weather conditions which persisted throughout much of the year.

Previous sampling in the area which was undertaken on behalf of the Bengalla Joint Venture in 1992 and 1993 indicated mean annual concentrations of between 35 to 40 micrograms/m3 (Envirosciences, 1993). The results of the sampling by two different monitoring programmes were therefore mutually consistent.

A similar situation exists in relation to maximum 24-hour concentrations of TSP. They ranged at Mt. Pleasant from a peak of 46 micrograms/m3 at site HV1 to peaks of 121 micrograms/m3 at HV6 and 136 micrograms/m3 at HV8 in 1993. Prior to 1993, peak 24-hour concentrations in excess of 100 micrograms/m3 were recorded at Bengalla between October 1991 and July 1993 at each of the 4 sites used. With the exception of one extreme value which was obtained during ploughing of an adjacent field, the peaks ranged up to about 160 micrograms/m3.

The drought conditions during 1994 were the most likely reason for a rise in the maximum TSP concentrations which were recorded at Mt. Pleasant in 1994. The highest 24-hour values thus ranged from 63 micrograms/m3 at site HV1 to 200 micrograms/m3 at HV2 and 220 micrograms/m3 at HV8.

Once again, the results of more than 3 years of monitoring are consistent and provide a sufficient data base for impact assessment of TSP particles.

The monitoring programme at Mt. Pleasant also made use of a selective inlet to collect samples of PM10 on a number of monitoring intervals during both 1993 and 1994. A total of 12 samples were collected in 1993 and 9 samples in 1994. Nineteen out of the collected 21 samples indicated 24-hr concentrations of PM10 in a range from 8 to 33 micrograms/m3. Two samples which were collected at the beginning of October 1994 at the peak of drought resulted in 24-hr concentrations of 70 micrograms/m3 (site HV1 within the Authorisation) and 76 micrograms/m3 (site HV6 near the eastern boundary of the Authorisation).

The results of PM10 monitoring supported a view that the ratio of PM10 to TSP particles in the air of the project is within a range of about 40 to 60 per cent (Envirosciences, 1993).

2.3. Atmospheric Gases

Various atmospheric gases are present in the ambient air of the project area in addition to the presence of atmospheric particles. Power generation is the main source of sulphur oxides and nitrogen oxides. Nitrogen oxides are also emitted by motor vehicles, and by fuel combustion for domestic and commercial purposes. Volatile organic compounds and carbon oxides are emitted from a variety of sources

including domestic heating, traffic, power generation and industrial and commercial activities.

Sulphur dioxide is the main gaseous component of the emission from power generation. Continuous monitoring of sulphur dioxide concentrations in the ambient air of the Hunter Valley has been undertaken by Pacific Power for a number of years. Results of two most recent years of monitoring as reported by the EPA are summarised in Table 2.3. The monitoring locations were Council's Administration Centre in Muswellbrook and a site off Ayredale Road near Mt. Arthur.

Table 2.3. Summary of SO2 concentrations (pphm) recorded at Muswellbrook and Mt. Arthur in 1991-92 and 1992-93.

Averaging time	Muswellbrook		Mt. Arthur		NHMRC goal
	1991-92	1992-93	1991-92	1992-93	
10-min max.	38.0	32.0	33.0	21.0	50
1-hour max.	32.5	17.5	28.0	16.0	25
Monthly max.	0.8	0.5	0.7	0.8	-
Annual average	0.3	0.2	0.4	0.4	2

The last column in Table 2.3 shows the current air quality goals recommended by the National Health and Medical Research Council (NHMRC) of Australia. The goal for maximum 1-hour concentrations was briefly exceeded at both monitoring sites in February 1992. The annual average remained well below the NHMRC goal reaching only about 20 per cent of the goal at Mt. Arthur and 15 per cent in Muswellbrook. It is the annual average concentration of sulphur dioxide which the NHMRC requires to be considered in conjunction with annual concentrations of TSP in the atmosphere.

Concentrations of other atmospheric gases including nitrogen oxides, ozone and carbon oxides are not recorded in the area containing the project site and the town of Muswellbrook.

3. DESCRIPTION OF THE PROPOSAL AND MINING SEQUENCE

Coal and Allied Operations Pty Ltd proposes to develop the Mt. Pleasant mine as an open-cut operation to produce of up to approximately 10.5 Mtpa of ROM coal. The mining proposal

has been described in more detail in the EIS. A brief overview is presented here and focuses on those aspects of the proposal and the mining sequence which have direct implications for the conduct of the air quality study.

The mine plan is based on a dragline operation with a truck and shovel prestripping operation. Stripping of rock will also be assisted by several front-end loaders and a large hydraulic excavator. A fleet of rear dump trucks will be used to haul both rock and coal. Initially, a small pit will be developed in the Warkworth seam near the infrastructure site.

The operation will take place in two pits. Initial development will be in South Pit and the adjacent Satellite Pit.

A truck and shovel fleet will initially operate in the two pits. Rock from the initial operation will be used to construct bund walls around the eastern boundary of the South Pit. Truck and shovel operation in the North Pit will commence in Year 3.

Dragline operations will commence in Year 5. Topsoil will be stripped ahead of mining and stockpiled for later use in rehabilitated areas. Overburden will be drilled, blasted and removed by dragline assisted by dozers.

Both the dragline and the shovel will continue to alternate between the pits. A second shovel will be added to the fleet together with additional trucks in Year 7. Maximum bench height for shovel operations will be limited to 15 metres. Rock will be hauled along the bench to an endwall or cross pit ramp system and out of the pit for backfilling over the dragline spoil or to out-of-pit emplacement areas.

Rock which is not assigned to either the shovels or the dragline will be removed by front-end loaders or hydraulic excavators. Rock less than 2.5 metres thick will be ripped by dozers, the rest will be drilled and blasted.

Coal will be mined by a fleet of front-end loaders. Coal less than 2.5 m in thickness will be ripped by dozers, the rest will be drilled and blasted. Mined coal will be hauled to the coal preparation and handling plant.

At the coal preparation and handling plant, trucks will deliver coal to a single dump hopper of approximately 500 tonne capacity or to a 20 000 tonne ROM stockpile. Operations will be planned and performed as far as practical to maximise the proportion of coal delivered directly from the mine to the dump hopper. ROM coal from the dump hopper will be transported via an apron feeder to a two-stage crushing plant. Crushed coal will be conveyed via surge bins to the coal preparation plant.

The 20 000 tonne ROM stockpile will be used to provide an alternative or supplementary supply of coal to the preparation plant whenever direct feed from the mine is unavailable or reduced due to the effects of inclement weather or other factors. Mobile equipment (front end loader and where appropriate trucks) will be used to move the ROM coal from the stockpile to the dump hopper.

In the coal preparation plant the raw coal will be beneficiated (washed) using conventional wet gravity separation processes (dense medium plant and spirals) and size separation processes (screens and cyclones) and centrifuges.

Product coal from the preparation plant will be stockpiled via a rail mounted travelling and luffing stacker. A bulldozer will push coal away from the delivery point to expand the stockpile. The total product stockpile capacity will be of the order of 500 000 tonnes of which 190 000 tonnes can be placed directly by the stacker. Coal on any stockpiles will be compacted on extended storage and whenever necessary to minimise the risk of spontaneous combustion.

A reclaim conveyor will be located in a tunnel beneath the product stockpile. It will be connected to the stockpile by a number of feeders, with the capability for more than one feeder to operate at a time so that coal blending can be performed during reclaiming. Blended coal will be fed onto a conveyor leading to the rail loop to the south of the Authorisation Area. Generally, two bulldozers will push coal toward the feeder or feeders during loading.

Coarse reject from the preparation plant will be conveyed to a coarse rejects bin and hauled by trucks to the overburden emplacements at the mine or to a holding point for material to be used to construct fine reject emplacements at a site to the north-west and west of the preparation plant.

Walls of the emplacements will be raised in stages of approximately 5 metres. When full and after a period of decanting, draining and consolidation, the emplacements will be capped and progressively rehabilitated.

4. GENERATION OF DUST AND AIR QUALITY SAFEGUARDS

Atmospheric dust will be the main component of air emissions from the project. Another source of air emissions will be exhaust fumes from mobile equipment including trucks. These emissions are however expected to be minor. Emissions of blasting fumes are also expected to be minor.

A range of air quality safeguards will be implemented to minimise the generation of atmospheric dust from the proposed development. These safeguards will be based on current

control techniques as recommended in New South Wales by the EPA and will be prescribed in the licence to operate to be issued following the approval process.

Mining safeguards will also be implemented which will prevent spontaneous combustion of coal and hence a potential for emissions of sulphur oxides and smoke particles including small particles with a diameter of less than 2.5 microns (PM2.5). The safeguards are described in more detail in the EIS document.

A full set of dust control practices as currently employed in New South Wales will apply to the mine at Mt. Pleasant. The main components of the controls can be summarised as follows.

During the construction period, watering of disturbed surfaces as well as access roads will be used to reduce dust emissions. Restricting the size of the surface area which will be disturbed at any given time is an effective approach to dust control and will thus be applied.

A bund wall will be constructed inside the south-eastern boundary of the Authorisation during the initial stage of mine development. Whilst the main aim of the construction is to provide a noise and visual buffer, the bund wall will assist in retaining some of the generated atmospheric dust within the Authorisation especially in the early years of mine development.

Maintaining the extent of the total area exposed to dust generation by wind erosion as small as possible, regular watering of dusty surfaces, and extensive watering and route marking of all haul roads will be the main aspects of the air quality safeguards during the operation.

The other aspects of dust control will include collection of fine dust from drilling, prevention of truck overloading and the resulting spillage of overburden material and coal during loading and hauling, and regular maintenance of all haul roads. Watering and regular maintenance are expected to result in a control efficiency of at least 50 per cent.

Rehabilitation of the mined land and overburden emplacements will be undertaken behind the mining. The emplacements will be developed as near to designed levels as possible and reshaped. Reshaped areas will be revegetated using proven techniques which have been used by Coal & Allied at its other operations.

A variety of dust control measures will also be used at the coal preparation plant and coal handling facilities. At the ROM coal stockpile, dust will be controlled by water sprays mounted adjacent the perimeter of the stockpile.

The ROM coal dump station will be equipped with mist sprays

that will be automatically activated when coal is being discharged to the station. Dust control sprays will also be used on the conveyor belt that conveys coal to the coal preparation plant.

Ground level sections of the ROM coal conveyor between the dump station and the coal preparation plant will be enclosed on one side and the top to protect against wind action. Elevated sections of this conveyor will be fully enclosed.

The coal preparation process is a wet process in an enclosed facility. As such there will be no dust emissions during processing.

Product coal with a moisture content of approximately 11.5 per cent will be transferred to the product coal stockpiles by conveyor and discharged to stockpile by a luffing stacker. Height of the stacker discharge will be controlled to minimise the fall distance of the coal to the stockpile.

The product coal stockpiles will be benched into the side of the hill with an additional vegetated bund to be constructed at the top of the batter on the western side. This will result in the base of the stockpile being some 8 to 10 metres below the top of the western bund. A small vegetated bund will also be located along the eastern margin of the stockpile to provide some measure of wind protection.

Fixed water spray systems will be located on the margin of the product stockpile and automatically activated for dust control in the event of high wind conditions during periods when dust generation could occur from the stockpile. The above dust control measures have been considered in the development of mean annual dust emissions in the next section.

5. MODELLING APPROACH AND METHODOLOGY

A variety of input information is required to describe the operation and the generation and dispersion of dust particles from the proposed mining. Dust particles will be generated by a multitude of operating equipment and range in size from minute particles in the submicron range to much heavier particles which settle rapidly not far away from the place of their origin.

The particles remaining in the air will be carried by wind and dispersed by the action of the atmosphere. The weight of the particles and the uptake characteristics of the surface cause the particles to deposit on the surface at various distances from the operations under continuously changing atmospheric conditions.

A total of 5 individual years of the proposed mining

operation were selected for inclusion in the modelling. The selected years of coal production were Years 2, 5, 10, 15 and 20 which correspond to representative stages in the development of the mine.

Detailed emission inventories of atmospheric dust were then prepared for each selected year using a range of dust emission factors for individual types of mining activities. The resulting dust emission rates were divided into three particle size categories corresponding to fine, inhalable and coarse dust.

A computer model of dust dispersion was then invoked to obtain predictions of mean annual dust deposition rates and concentrations of total suspended particulates in the air, and to prepare plots of dust contours.

5.1. Emissions of Dust

The rates of dust emissions were determined for individual groups of mining operations using the expected volumes of the operations such as coal production figures, volumes of overburden mined, the length of haul roads etc. together with emission factors for unit operations. Details of mine plans, production schedules and equipment lists were made available for this purpose.

The dust emission factors for use in the Hunter Valley were reviewed in the past as a part of a study directed by the State Pollution Control Commission (SPCC, now the EPA) and NSW Coal Association and funded by the National Energy, Research, Development and Demonstration Council (NERDDC). The study report (SPCC, 1988) also listed emission factors which were experimentally determined at surface coal mines in the Hunter Valley.

A number of other mining activities were not tested in the conditions prevailing in the Hunter Valley and the emission factors for those activities had to be adopted from published results of experiments which were undertaken elsewhere. Dust emission factors which were released by the SPCC (SPCC, 1983) were applied where available. The results of experimental work carried out in the United States (USEPA, 1981, 1985, 1988) were used for the remaining activities. A list of individual mining activities, emission factors applied in the study and the source of the data is shown in Table 5.1.

5.1.1. Emissions in Year 2

Truck and shovel, hydraulic excavator and front-end-loader operations will take place in both the Satellite and South Pits in Year 2. The total volume of rock for removal will be 19.0 Mbcm.

Table 5.1. Dust emission factors used in the study and the source of data.

Operation	Emission factor	Reference
O/B stripping		
Topsoil removal (scrapers) soft overburden	14.0 kg/hr	SPCC (1983)
O/B drilling	0.6 kg/hole	SPCC (1983)
O/B blasting *	$344\ A^{0.8}\ M^{-1.9}\ d^{-1.8}$	USEPA (1985) - see Note 1
O/B loading - shovel, FEL	0.025 kg/t	SPCC et al (1988)
O/B removal - dozer	5.57 kg/hr	USEPA (1988) - silt = 4%, moisture = 2%
Dragline operation	0.073 kg/m3	USEPA (1988) - moisture = 2%, drop = 12 m
Graders on roads	0.615 kg/km	USEPA (1988)
O/B haulage	2.00 kg/km	SPCC et al (1988)
O/B dumping	0.012 kg/t	SPCC et al (1988)
Reshaping - dozer	7.3 kg/hr	USEPA (1988) - silt = 5%, moisture = 2%
Coal mining		
Coal drilling	0.6 kg/hole	SPCC (1983)
Coal blasting *	$0.00022\ A^{1.5}$	USEPA (1988) - see Note 2
Coal ripping - dozer	1.7 kg/hr	USEPA (1988) - silt = 4%, moisture = 5%
Coal loading - shovel, FEL	0.029 kg/t	SPCC et al (1988)
Coal haulage	2.00 kg/km	SPCC et al (1988)
Coal dumping	0.01 kg/t	SPCC et al (1988)
Exposed areas		
Wind erosion	0.40 kg/ha/hr	SPCC (1983)

* NOTE: Emission factor in (kg/blast)
A is the area to be blasted (m2)
M is moisture content (%)
d is depth of the blast (m)

Note 1: Applied to blast depths > = 10 m

Note 2: Applied to blast depths < 10 m

Table 5.1 continued

Operation	Emission factor	Reference
Coal preparation		
ROM coal		
Coal dumping	0.01 kg/t	SPCC et al (1988)
Conveyor transfer	1.9×10^{-4} kg/t	USEPA (1988)
Maintenance, wind erosion of ROM stockpile	1.8 u kg/ha/hr	USEPA (1988)
Product Coal		
Conveyor stacking, transfer, train loading	2.6×10^{-5} kg/t	USEPA (1988)
Reclamation, conveyor transfer, train loading	1.9 x 10-4 kg/t	USEPA (1988)
Maintenance, wind erosion of product stockpile	1.8 u kg/ha/hr	USEPA (1988)

Rock material from the pits will be used to continue the construction of a bund wall outside the eastern limit of the South Pit. All mining as well as haulage of rock and coal will take place behind the bund wall following its completion.

The balance of the rock will be hauled to the South-West out-of-pit emplacement near the coal handling and preparation plant.

The production of ROM coal will be 5.25 Mtpa in Year 2. Rejects from the coal handling and preparation plant will be hauled for disposal in the nearby SW emplacement area. Details of the dust emission inventory for Year 2 are given in Table A.1 in Appendix A.

The total annual emission of atmospheric dust was estimated at 6361.5 tonnes. Operations in the South Pit were estimated to contribute 1704.4 t/yr or 26.8 per cent of the total, Satellite Pit 3377.7 t/yr (53.1 per cent) and the coal preparation plant 243.2 t/yr (3.8 per cent). Placement of rock material outside the pit and bund construction would contribute 1036.2 t/yr (16.3 per cent).

A retention factor of 30% was applied to emissions from those mining operations which will take place at or near the floor of the pit. Details of the calculations can be obtained from Table A.1. Retention of a portion of the atmospheric dust particles which are generated within a deep pit is a well known phenomenon. The retention factor increases with increasing depth of the pit in relation to the surrounding terrain and varies with meteorological conditions prevailing outside the pit. Retention of up to 60 per cent and possibly as much as 80 per cent of the dust particles generated within the pit has been quoted (Cole et al, 1984, SPCC, 1983, SPCC et al, 1988).

5.1.2. Emissions in Year 5

A shovel, a dragline and front-end-loaders will be deployed to remove rock in Year 5 of mining. The total volume of rock material will be 36.2 Mbcm. Most of the removal will take place in the North Pit.

Coal will be extracted at a rate of 8.5 Mtpa. About 70 per cent of the total will come from the North Pit.

Details of the dust emission inventory for Year 5 are given in Table A.2 in Appendix A.

The total annual emission of atmospheric dust was estimated at 6916.9 tonnes. Most of the emissions will be from the activities in the North Pit which will contribute an estimated 4768.9 t/yr or 68.9 per cent. The annual emission

from the South Pit was calculated at 1797.1 t/yr (26.0 per cent) and from the coal preparation plant at 350.9 t/yr (5.1 per cent).

Prestripping operation including overburden haulage and dragline operation will be the largest sources of atmospheric dust in the North Pit. Approximately 75 per cent of the estimated annual emission will be due to mining and hauling of rock. The main dust generating activity in the South Pit will be the prestripping.

5.1.3. Emissions in Year 10

The emissions of atmospheric dust will peak in Year 10 of mining following the introduction of a second shovel earlier on in response to a need for removing a larger quantity of rock. One shovel will operate in each pit, front end loaders and an excavator will be also deployed to remove rock. The dragline will alternate between the pits.

The total production of ROM coal will increase to 10.5 Mtpa requiring the removal of approximately 56.9 Mbcm of rock including 6.3 Mbcm of dragline rehandle. Most of the mining activity will be in the North Pit.

Two out-of-pit emplacement areas will be active during Year 10. The NW emplacement will receive an estimated 10.4 Mbcm of rock from the North Pit. About 4.2 Mbcm of rock will be transported from the South Pit to the SW emplacement together with most of the coarse rejects material.

Details of the dust emission inventory for Year 10 are given in Table A.3 in Appendix A.

The estimated total annual emission of atmospheric dust is 11 405.0 t/yr. Larger quantities of rock being removed by dragline and longer haul distances for both rock and coal in the North Pit will result in a higher emission rate of 8107.5 t/yr or 71.1 per cent. The truck and shovel operation in the North Pit was estimated to result in an emission rate of 3993.1 t/yr which is equivalent to almost 50 per cent of the total emission from that pit.

In the South Pit, the annual dust emission were estimated at 2934.4 t/yr or 25.7 per cent of the total. The pit operation involving a shovel, front-end loaders and haulage trucks was estimated to contribute over 50 per cent of the dust emission from the South Pit.

A breakdown of dust emissions which were calculated for Year 10 of the mine development is shown in Table 5.2. Removal of rock by shovel and dragline was estimated to contribute about 35.7 per cent of the total annual emission of atmospheric dust in Year 10. Out-of-pit haulage of rock

contributed about 26 per cent, out-of-pit haulage of coal about 11 per cent and wind erosion of disturbed surfaces about 10 per cent.

Table 5.2. Breakdown of dust emissions estimated for Year 10 of operation.

Type of operation		South Pit	North Pit	Total
O/B:	Shovel + FEL (incl. in-pit haul)	3.4%	17.9%	21.3%
	Haulage (out-of-pit)	9.8%	16.1%	25.9%
	Dumping	1.4%	7.4%	8.8%
	Dragline	3.3%	11.1%	14.4%
Coal:	Mining (incl. in-pit haul)	0.8%	3.9%	4.7%
	Haulage (out-of-pit)	2.8%	8.5%	11.3%
Wind erosion:		4.2%	6.2%	10.4%
		25.7%	71.1%	96.8%
CPP:				3.2%
				100.0%

5.1.4. Emissions in Year 15

Both shovels and front-end loaders will be removing rock in both pits in Year 15. A single dragline will again be deployed in each pit for a part of the year. The total production rate of ROM coal will continue at 10.5 Mtpa. The total quantity of rock for removal will be 58.2 Mbcm/yr including dragline rehandle. The main part of the operation will continue in the North Pit. Up to about 82 per cent of all rock and 68 per cent of all coal will originate from the North Pit.

An out-of-pit emplacement (NWOOP dump) will be active in Year 15 receiving 10.4 Mbcm of rock from the North Pit and 2.2 Mbcm of rock from the South Pit.

Details of the dust emission inventory for Year 15 are given in Table A.4 in Appendix A.

The total annual emission of atmospheric dust was estimated to reach 11 333.5 t/yr. Dust emissions from the North Pit were estimated at 8051.4 t/yr or 71.0 per cent of the total.

Operations in the South Pit were calculated to contribute a further 2687.7 t/yr (23.7 per cent) and the coal preparation plant 594.4 t/yr (5.3 per cent).

5.1.5. Emissions in Year 20

Mining in the North Pit will near completion in Year 20 and the main section of the pit will be backfilled and rehabilitated. Most of mining in Year 20 will be concentrated in the South Pit. Two shovels, front-end loaders, an excavator and a dragline will be used to remove a total of 53.2 Mbcm of rock including dragline rehandle. The coal production rate will be 10.5 Mtpa.

Details of the dust emission inventory for Year 20 are given in Table A.5 in Appendix A.

The estimated annual emission in Year 20 was 10 674.1 t/yr with about 75 per cent of the emissions originating from the South Pit. The leading edge of the South Pit will have advanced in Year 20 by almost 2 km to the west of its initial position near the bund wall at the commencement of mining.

5.1.6. Summary of dust emissions

The results of dust emission estimates for Years 2, 5, 10, 15 and 20 of mining are summarised in Table 5.3. The table also shows the total quantities of coal and rock to be mined during those years, and the amount of atmospheric dust generated in the process of mining and handling one tonne of ROM coal in each of the modelled years.

The calculated dust to coal ratios ranged from 1.21 kg/t in Year 2 to 0.82 kg/t in Year 5 levelling off to a narrow band from 1.02 to 1.09 kg/t in Years 10, 15 and 20. The latter years were also determined as the years of maximum generation of atmospheric dust in terms of the total annual emission rate.

Table 5.3. Summary of dust emission estimates for the proposed operation.

Year	Annual emission of dust	Mined quantities		Dust:coal ratio
		ROM coal	Rock (prime)	
	(tonnes/yr)	(Mtpa)	(Mbcm/yr)	(kg/tonne)
Year 2	6361.5	5.25	19.0	1.21
Year 5	6916.9	8.5	36.2	0.82
Year 10	11 405.0	10.5	50.6	1.09
Year 15	11 333.5	10.5	49.2	1.08
Year 20	10 674.1	10.5	45.6	1.02

5.2. Particle Size Distributions

Three particle size classes were used to divide the atmospheric dust according to aerodynamic diameters ranging from 0 to 2.5, 2.5 to 15.0 and 15.0 to 30.0 microns. Those classes corresponded to fine, inhalable and coarse fractions as used in the majority of the experimental work described further below. The mean diameters in each class, for the purpose of modelling, were then assigned values of 1.0, 6.1 and 21.1 microns.

In the process of assigning particle size distributions to the individual mining activities, the results of a study undertaken at selected Hunter Valley mines in 1986 (Dames & Moore, 1986) were used. The range of mining activities for which data on particle size distributions was obtained included overburden drilling, haulage of overburden and coal, dumping of overburden, loading of coal and dumping coal to ROM hopper.

Experimental data published by the USEPA, (USEPA, 1981, 1988, 1991) for a number of surface coal mines in the United States were used to assign particle size distributions to dust emissions from those mining activities which were not studied in the Hunter Valley.

The applied particle size distributions are shown together with the source of data in Table 5.4.

Table 5.4. Particle size distributions used in the study and the source of data.

Operation	Particle size ranges FP 0-2.5 um	IP 2.5-15 um	CP 15-30 um	Reference Operation
O/B stripping				
Topsoil removal (scrapers)	19.6	54.0	26.4	USEPA (1981)
O/B drilling	9.0	62.0	29.0	Dames & Moore (1986)
O/B blasting	5.1	46.0	48.9	USEPA (1981)
O/B loading - shovel	7.0	50.0	43.0	USEPA (1991)
O/B removal - dozer	2.6	22.5	74.9	USEPA (1991)
Dragline operation	7.0	50.0	43.0	Dames & Moore (1986)
Graders on roads	5.5	48.0	46.5	USEPA (1981)
O/B haulage	6.0	53.0	41.0	Dames & Moore (1986)
O/B dumping	4.0	44.0	52.0	Dames & Moore (1986)
Reshaping - dozer	19.6	54.0	26.4	USEPA (1981)
Coal mining				
Coal drilling	9.0	62.0	29.0	Dames & Moore (1986)
Coal blasting	5.1	46.0	48.9	USEPA (1981)
Coal ripping - dozer	6.7	24.0	69.3	USEPA (1991)
Coal loading - FEL	5.0	58.0	37.0	Dames & Moore (1986)
Coal haulage	6.0	53.0	41.0	Dames & Moore (1986)
Exposed areas				
Wind erosion - Coal	4.0	61.0	35.0	USEPA (1981)
- O/B	3.5	67.0	29.5	USEPA (1981)

Table 5.4 continued

Operation	Particle size ranges FP 0-2.5 um	IP 2.5-15 um	CP 15-30 um	Reference Operation
Coal preparation				
Coal dumping	4.0	49.0	47.0	Dames & Moore (1986)
Conveyor transfer	11.0	37.0	52.0	USEPA (1988)
Maintenance, wind erosion of stockpiles	4.0	61.0	35.0	USEPA (1981)
Reclamation of product coal	0.5	12.2	87.3	USEPA (1988)

5.3. Meteorological Data

Dispersion modelling of airborne dust resulting from open cut mining and coal handling requires the knowledge of representative meteorological conditions. The direction and speed of the mean wind combined with atmospheric stability in composite frequency functions are the most commonly used input parameters.

Mean wind direction determines the general direction in which the dust will be transported. Mean wind speed determines the amount of initial dilution of the airborne material and the speed with which the material is moving. Atmospheric stability is often used in dispersion modelling to give a measure of dispersion related to turbulence. The main advantage of using atmospheric stability classification is that it is more readily obtained from meteorological records than are direct turbulence measurements.

A minimum of one year of data is needed to include seasonal variations in the data base. Variations from year to year exist and longer periods of continuous records, if available, improve the usefulness and accuracy of dispersion estimates. Criteria which determine how representative each meteorological data set is of conditions prevailing in the project area include proximity of the meteorological station to the project site, complexity of the terrain in the area, free exposure of the meteorological station to the airflow, and the length of time over which the data was collected.

Continuous measurements of meteorological parameters commenced at the project site in 1993. The location of the meteorological monitoring station was shown in Figure 2.1.

The station is located in the northern part of the authorisation area. The terrain in this part of the authorisation is elevated offering a good exposure of the station to free air flow.

The most recent 24 months of on-site records were included in the air quality modelling. Earlier records which were partly affected by instrument problems were not used. The basic recording interval was one hour and mean values of wind speed, wind direction, air temperature and solar radiation were used together with records of sigma theta (standard deviation of horizontal wind direction) to develop joint frequency distributions for application in the model.

Seasonal and annual wind roses for the monitoring site are shown in Appendix B1. The wind roses indicate the direction from which the wind was blowing and its strength. Separate diagrams are shown for each of 6-hour intervals ranging from midnight to 6 a.m, 6 a.m to noon, noon to 6 p.m and 6 p.m to midnight. A wind rose for a full interval of 24 hours from midnight to midnight is presented in the upper right corner

of the drawing.

Both annual wind roses (Year 1995 from December 1994 to November 1995 and Year 1996 from December 1995 to November 1996) confirmed a general orientation of the prevailing winds along the NW-SE axis which corresponds to the orientation of the Hunter Valley. Winds from the south-eastern quadrant were particularly frequent during the afternoon and evening. The highest proportion of winds from the north-western quadrant was recorded at night and in the morning.

The monitoring location near Coal Creek Road was well exposed to the wind and recorded moderate to fresh winds on many occasions. The frequency of occurrence of winds with mean hourly speeds of, at least, 20 kph in the records obtained over 2 years was 20.1 per cent. Mean hourly wind speeds in excess of 30 kph were recorded on 262 hours during 1995. Almost 50 per cent (125 hours) of those winds were from the south-east. The total duration of winds in excess of 30 kph from NNW was 52 hours, ESE 34 hours per year, NW 31 hours, and WNW 12 hours.

The highest daily average (a period of 24 hours) was 31 kph. The strongest winds occurred generally in the afternoon between 3 p.m and 5 p.m averaging about 18 kph over the entire monitoring interval of 12 months.

The wind strength in 1996 was generally lower than in 1995. The number of hours with mean wind speeds of more than 30 kph dropped to 222 in 1996 giving an average of 242 hours per year over 1995 and 1996.

Seasonal variations in the prevailing winds are illustrated by wind rose diagrams for summer 1995 (December 1994 to March 1995 and October to November 1995) and summer 1996 (December 1995 to March 1996 and October to November 1996) as well as winter 1995 (April to September 1995) and winter 1996 (April to September 1996). Generally south-easterly winds dominated the summer season both in terms of frequency of occurrence and strength. About two thirds of all recorded wind directions were from between S and E in summer. These winds also accounted for 85 per cent of the recorded hourly speeds in excess of 30 kph.

The frequency of winds from a sector between W and N was approximately 25 per cent in summer. Winds from the remaining directions corresponding to north-eastern and south-western quadrants remained only infrequent.

In winter, the prevailing winds were from a sector between W and N accounting for about 60 per cent of the recorded directions. Nighttime and mornings were the times when W to N winds were most frequent. These winds generally strengthened in the afternoon before weakening in the evening again.

Winds from a sector between S and E were also present during the monitoring interval from April to September. In total, they accounted for about 30 per cent of the wind directions which were recorded for the winter season. Winds from the remaining two quadrants, north-eastern and south-western, were again infrequent.

Stability classification was determined for each hour of the data. For daytime conditions (solar radiation of 80 W m^{-2} or greater), hourly values of solar radiation and wind speed were applied in a scheme proposed by Turner (1994) and Pasquill (1961).

A method by Mitchell (1982) was used for nighttime conditions (solar radiation less than 80 W m^{-2}) to derive stability classification from records of sigma theta and wind speed. The results of stability determinations are summarised in Table 5.5.

Table 5.5. Frequencies (per cent) of atmospheric stability categories estimated from meteorological records collected at Mt. Pleasant in 1995 and 1996.

		Atmospheric Stability Category					
		Unstable		Neutral		Stable	
Season		A	B	C	D	E	F
Summer	1995	7.7	7.1	8.9	48.8	22.3	5.2
	1996	6.9	8.8	10.3	52.3	16.3	5.5
Winter	1995	1.1	6.6	10.5	50.1	24.2	7.5
	1996	1.0	5.8	11.0	52.8	22.8	6.6
Year	1995	4.4	6.9	9.7	49.4	23.2	6.4
	1996	4.0	7.3	10.6	52.5	19.5	6.0
Mean 1995-96		4.2	7.1	10.2	51.0	21.4	6.2

The results were in a general agreement with the distributions of atmospheric stability categories which were recorded at locations in the Hunter Valley on previous occasions and confirmed a seasonal variation in the occurrence of unstable and stable air at the project site.

Eighteen months of data from the second meteorological station (Mt. Pleasant - 2) were available for inclusion in this report. The results confirmed that because of its lower elevation, the land near the Hunter River experiences generally lower wind strengths than the northern part of the authorisation area.

The results also confirmed the northwestern and southeastern sectors as the main directions of the prevailing winds. Seasonal and annual wind roses for Mt. Pleasant - 2 site are shown in Appendix B.2. The recording interval for the 1996 wind rose data in Appendix B.2 matched the recording interval which was used to prepare the diagrams for 1996 in Appendix B.1.

There is evidence in the wind records from the site off Roxburgh Road which shows a development of generally weak north-northeasterly air flow, mostly at night, at times when the main monitoring station at Coal Creek Road continued to record winds from NW and NNW. This difference was more pronounced during the cool part of the year than later on during the summer months.

Furthermore, the records from the second meteorological station are quite consistent in indicating that although winds from the northwestern quadrant remain to be the main winds, particularly during the daytime, they occur less frequently and have a lower strength than the winds in the northern part of the authorisation.

The implication of the recorded differences in wind conditions between the northern part of the authorisation and the low lying land further to the southeast for the results of dust dispersion modelling which are presented in this document, is that the use of the wind data from the main meteorological station in the model would render the predicted dust levels for the southeast more conservative (i.e. high). North to northeasterly winds would not pass over mined land and hence would not have the same potential for carrying dust particles as the northwesterlies which were incorporated into the predicted values as presented further in Section 6.

5.4. Dispersion Model

The estimated rates of dust emissions were applied together with the meteorological data in a computer model of dust dispersion. The model is described in Appendix C. A computer plotting routine was used to draw isopleths of predicted dust deposition rates and concentrations of total suspended particulates in the ambient air.

Directional dependence of the wind erosion component of the dust source term was retained in the model by invoking the

contribution by wind erosion only when the wind speed exceeded a threshold value of 20 kph in that particular direction. The total frequency in the meteorological data of wind speeds in excess of the threshold value was 20.1 per cent.

6. MODELLING RESULTS AND IMPACT ASSESSMENT

Atmospheric dust is the only type of air pollutant which will be released from the mining operation in a quantity that is of consequence in air quality considerations. Many dust particles generated from the mining operation tend to be of a rather large size resulting in a rapid settling at relatively short distances from the location of the emission. Depending on the size of the particulate matter, the air quality criteria for particulate matter thus distinguish between dust deposition and concentration of suspended dust particles in the ambient air.

6.1. Dust Deposition

6.1.1. Air quality guidelines

Depositing dust (dustfall) if present at sufficiently high levels, can reduce the amenity of an area which is used for living, farming and other activities to such an extent that they cease to be either enjoyable or viable. The specific effects contributing to this degradation of amenity include mainly the presence of visible dust either in the air or on surfaces, and soiling of surfaces and materials.

In New South Wales in the past, the EPA used an annual average of 4.0 g/m2/month as the level at which amenity was likely to be affected causing complaints of nuisance dust. More recently, the EPA adopted new amenity based criteria for dust deposition. The EPA criteria are summarised in Table 6.1.

Table 6.1. NSW EPA criteria for dust fallout.

Existing Dust Level (g/m2/month)	Maximum Acceptable Increase Over Existing Dust Level (g/m2/month)	
	Residential Suburban	Rural, Semi-Rural Urban Commercial & Industrial
2	2	2
3	1	2
4	0	1

NOTE: If the existing dust level in any area is greater than 4 g/m2/month (i.e. 5 or above) then no increase in dust fallout is acceptable as a result of any proposed dust emitting works.

The maximum acceptable increase in the mean annual dust deposition rate is thus 2 g/m2/month in those residential areas in which the existing rate of dust deposition does not exceed 2 g/m2/month. For those areas the criteria seek to limit the total dust deposition rate (the sum of the existing level and the increment due to a new development) to 4 g/m2/month expressed as an annual mean.

Similarly, the criteria allow for an increment of up to 2 g/m2/month in the mean annual dust deposition rate in those rural and semi-rural as well as commercial areas in which the existing dust deposition does not exceed 3 g/m2/month. For these locations, the maximum acceptable total dust deposition rate is 5 g/m2/month expressed as an annual mean.

Monitoring results of existing dust deposition rates in the area containing the project site were presented in Section 2. The existing levels fall within the definition of the EPA criteria above. As a result, when applied to the proposed development at Mt. Pleasant, the criteria specify a mean annual increment of 2.0 g/m2/month as the maximum acceptable increase over the existing levels for all land located outside the project site.

6.1.2. Predicted levels

Increases in the mean annual rate of dust deposition during the representative years of operation were predicted first. The results of the predictions are presented as a set of isopleths (dust contours) in Figure 6.1.

The shape of the dust deposition contours reflected the direction of the main winds as well as the position and configuration of the main dust generating sources including the pits, rock emplacement areas and the haul roads.

Inherent in the results presented in Figure 6.1 was the assumption that the dust emissions would be able to follow a path free of obstructions through the air to the grid points at which the modelling calculations were carried out.

The actual quantity of dust particles reaching locations outside the project site is expected to be less than the modelling predictions. Deep pits, rising terrain and surrounding vegetation will combine to remove a portion of the generated dust from the air. Pit retention of a portion of the atmospheric particulates generated with the pit itself was partly included in the derivation of dust emission inventories as presented in Section 5. As outlined in Section 5.1.1., a retention factor of 30 per cent was applied in the inventories despite a possibility that up to 60 or even 80 per cent of the particles may, in fact, be retained in the pit under certain conditions (Cole et al, 1984).

Physical obstacles located along the path in the form of trees, other types of vegetation and rising terrain including an artificially constructed bund wall can be expected to interfere with the dispersing cluster of atmospheric particles and so remove a portion of the dust from the air. However, the complexities of describing this removal mechanism in acceptably reliable mathematical terms prevented its inclusion in regulatory dispersion models rendering the results to be conservative in the majority of cases.

The dispersion model also could not take a direct account of the fact that certain operations outside the pit especially haulage of both rock and coal will, in part, be shielded in certain directions by the surrounding terrain. The mine plans for the individual years of operation showed that sections of haul roads will be passing between rock emplacements which will rise to a considerable height on both sides of the road.

Figure 6.1 thus shows conservatively predicted increases in the mean annual dust deposition rate for all 5 selected years of mining which were described in the previous section. Incremental levels corresponding to 0.5, 1.0, 1.5, 2.0, 3.0, 4.0 and 8.0 g/m2/month were drawn on the map containing the project site.

Year 2

The predicted increases in the mean annual rate of dust deposition in Year 2 of mining are shown in Figure 6.1(a). The emphasis was placed in Figure 6.1(a) on determining the approximate position of the contour line which corresponds to an incremental value of 2.0 g/m2/month (annual average).

This contour line will be contained entirely within the northern boundary of the Authorisation in Year 2.

Along the eastern boundary of the mine site, the predicted increment in mean annual deposition of 2.0 g/m2/month extended to a distance of about 700 metres outside the boundary.

Residential areas of Muswellbrook and South Muswellbrook as well as the area surrounding the racecourse were predicted to receive annual increments in dust deposition of well below 1.0 g/m2/month.

In the west, the predicted increment of 2.0 g/m2/month extended into an area which will be used for the construction of fine reject emplacements. Finally, a narrow strip of land of up to about 500 metres outside the southern boundary was predicted to receive between 2 and 3 g/m2/month in Year 2.

Year 5

The predicted increases in the mean annual rate of dust deposition in Year 5 of mining are shown in Figure 6.1(b). The contour line representing an increase of 2.0 g/m2/month was again predicted to be predominantly confined to the Authorisation.

Along the eastern boundary, a contour line corresponding to a mean annual increment of 2.0 g/m2/month extended to about 800 metres outside the boundary.

The township of Muswellbrook was predicted to receive an annual increment of less than 1.0 g/m2/month. An increase of less than 1.0 g/m2/month was also predicted for the area surrounding the racecourse and the properties located to the south of the Hunter River.

Mining in the North Pit and a frequent presence of south-easterly winds extended the predicted position of the contour line to just over 1500 metres outside the north-western boundary of the project site.

Year 10

Mining in the North Pit in Year 10 of mining would require the use of an out-of-pit emplacement area for overburden material to the northwest of the Authorisation. As a result, the position of the contour line corresponding to a mean annual increase in dust deposition in Figure 6.1(c) was predicted to extend to a distance of about 3000 metres outside the north-western Authorisation Boundary.

The area which was predicted to receive an annual increment of 2.0 g/m2/month remained relatively small outside the eastern boundary. The maximum distance to which the contour line was predicted to extend outside the Authorisation was about 750 metres.

The annual increase in dust deposition in the township of Muswellbrook in Year 10 was predicted to be less than 1.0 g/m2/month. Likewise, an increment lower than 1.0 g/m2/month was predicted for the leading edges of South Muswellbrook and the area surrounding the racecourse.

Year 15

Mining in the North Pit would continue in Year 15 resulting in similar levels of dust reaching locations in the northwestern direction to those which were predicted for Year 10.

The maximum extent of the area outside the eastern

Authorisation boundary in which the mean annual dust deposition was predicted in Figure 6.1(d) to increase by 2.0 g/m2/month was about 700 metres.

The increase in the mean annual dust deposition in Muswellbrook was predicted to remain less than 1.0 g/m2/month. The area surrounding the racecourse was predicted to receive a mean annual rate of deposition of between 1.0 and 1.5 g/m2/month.

Year 20

The predictions for Year 20 in which the majority of mining will continue in the South Pit are shown in Figure 6.1(e).

In the east, the contour line corresponding to a predicted increase of 2.0 g/m2/month extended to about 750 metres outside the Authorisation boundary. In the south, this contour line was predicted to extend to a maximum distance of about 1150 m over a relatively small area located to the south of the boundary.

Residential areas of Muswellbrook were predicted a mean annual increment of less than 1.0 g/m2/month. The increment in the area surrounding the racecourse and parts of South Muswellbrook was predicted to be between 1.0 and 1.5 g/m2/month.

Continuation of backfilling and surface rehabilitation activities of the North Pit in Year 20 was predicted to extend the contour line corresponding to an increase of 2.0 g/m2/month to a distance of about 2500 m outside the boundary and at a location situated immediately downwind of the activities.

6.1.3. Impact assessment

Monitoring results of existing dust deposition rates in the area surrounding the proposed development indicated mean annual levels of less than 2.0 g/m2/month. Hence, the impact of the dust emissions from the operation of the Mt. Pleasant mine can first be assessed by a direct reference to the EPA objective for protection of amenity.

Figure 6.2 contains a set of contour lines corresponding to increases of 2.0 g/m2/month in the mean annual rate of dust deposition which were predicted for Years 2, 5, 10, 15 and 20 of mining. An envelope of the individual contour lines is usually used to depict the area of affectation by dustfall.

A reference to Figure 6.2 indicates that the amenity criterion may be exceeded within a narrow strip of land, approximately 700 to 800 m wide, outside the eastern boundary