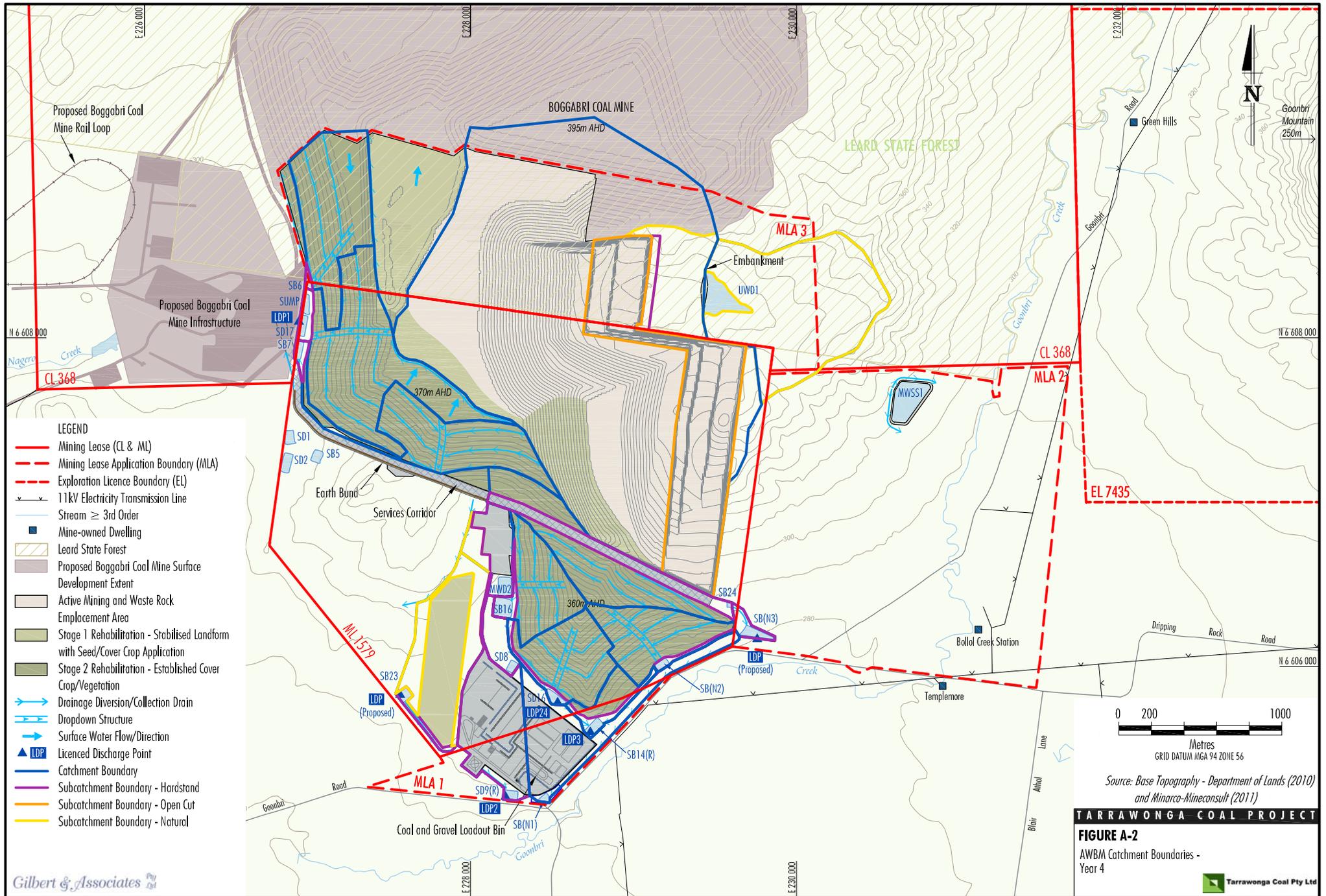
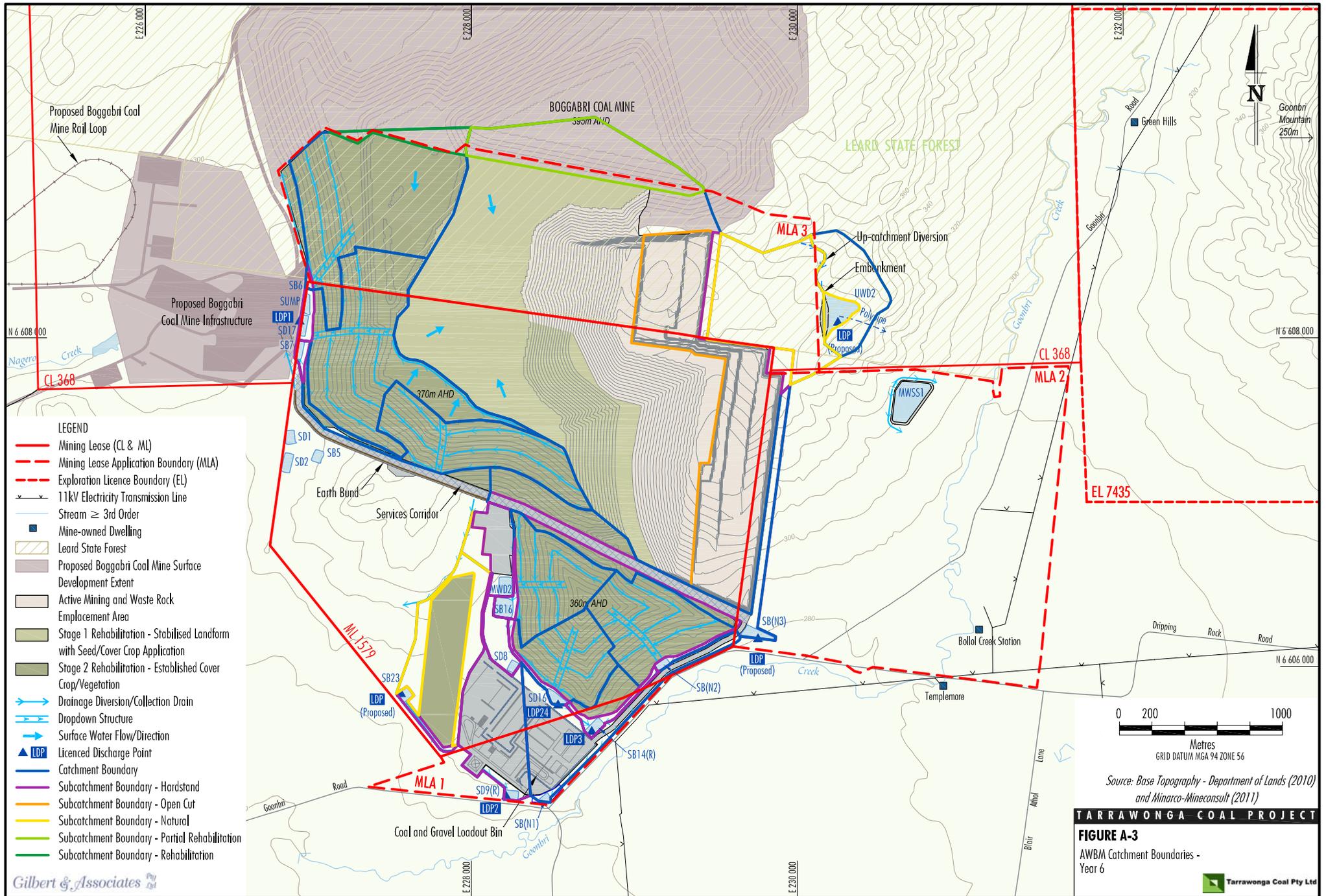
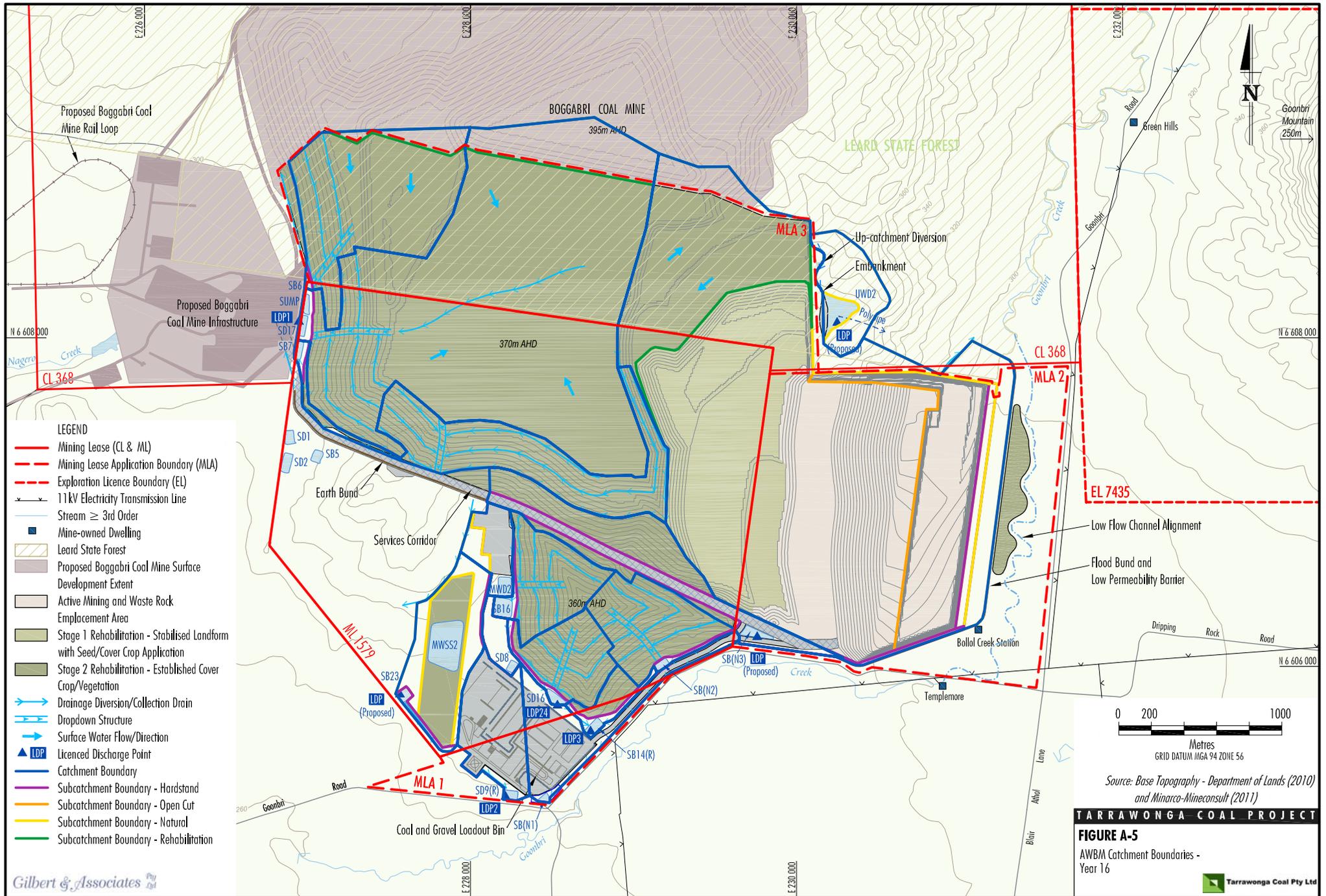

Attachment A
AWBM Catchment Figures







Attachment B
Goonbri Creek Stream Condition Survey Report

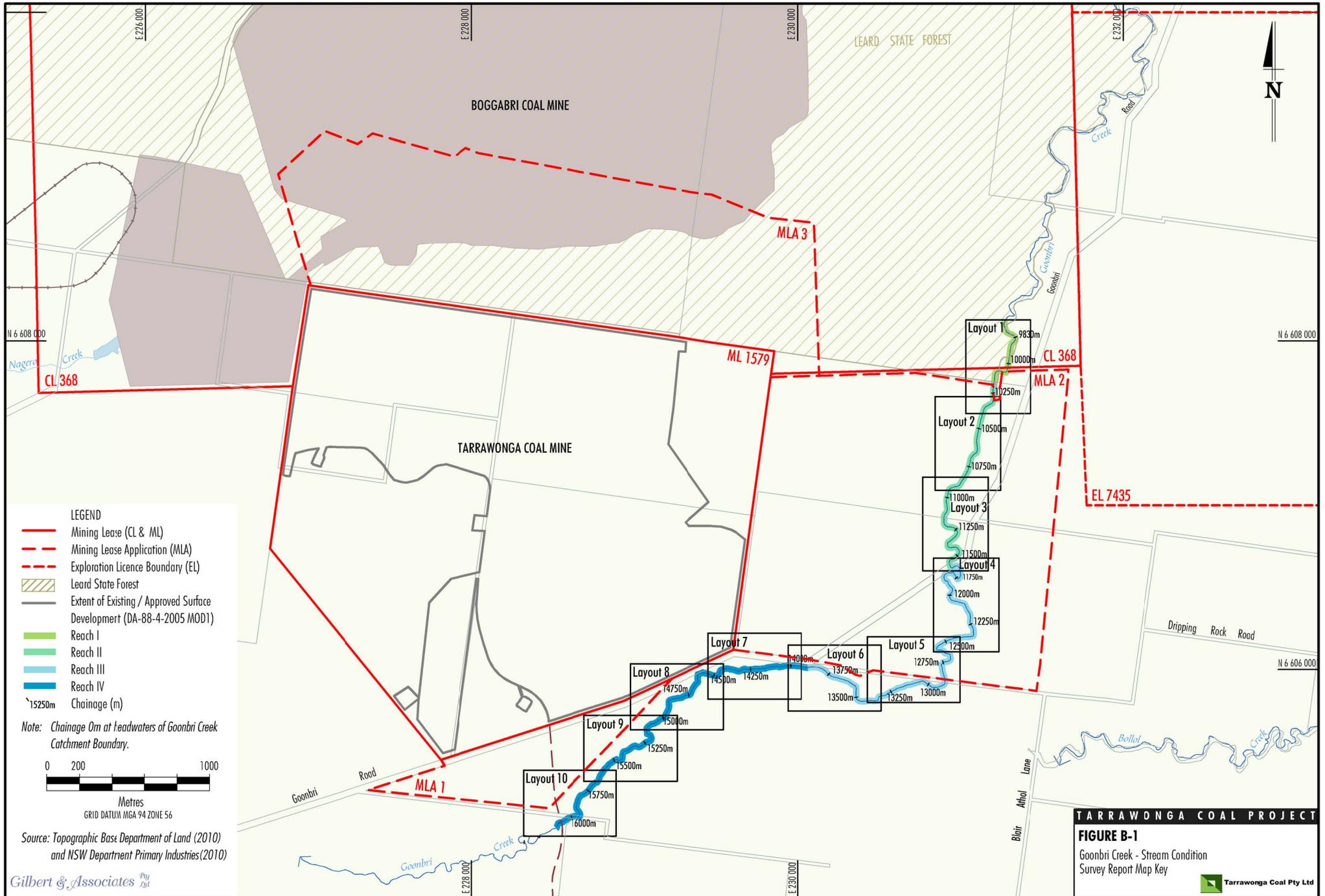




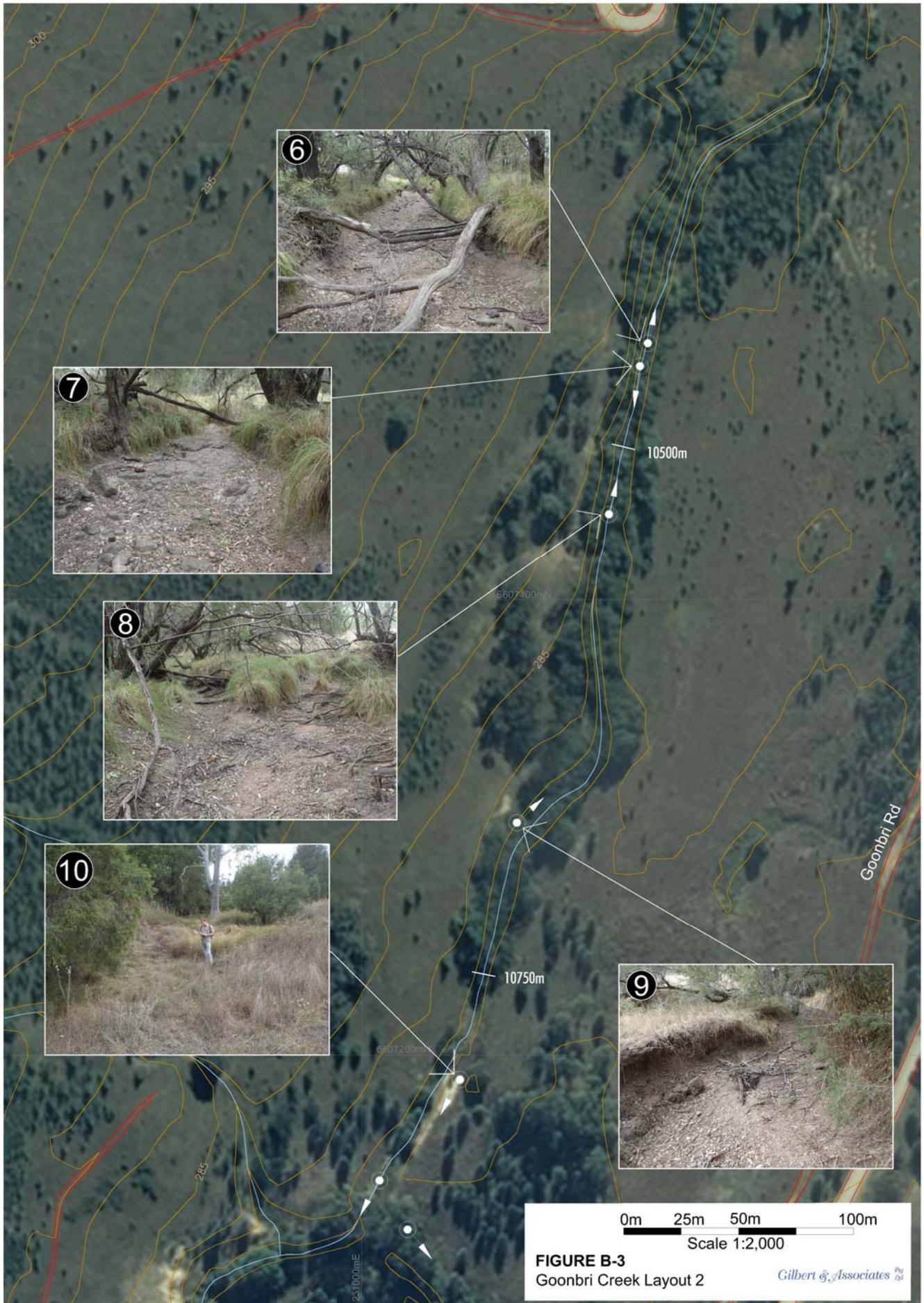
FIGURE B-2
Goonbri Creek Layout 1

Gilbert & Associates

**Goonbri Creek Stream Condition Survey Report - March 2011
Layout 1**

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
I	Low sinuosity, relatively straight	Relatively stable, some lateral erosion evident	CWT - 6.8m LBH - 1m RBH - 1m CWB - 2.5m	Gravelly sandy bed	Forest with vegetation community predominantly composed of White Cypress Pine and Narrow-leaved Ironbark	Sedge grasses on both banks	State Forest	1	Incised channel with exposed roots
I	Low sinuosity, relatively straight with gradual bend	Relatively stable, some lateral erosion evident	CWT - 7m LBH - 3m RBH - 1.2m CWB - 3m	Gravelly sandy bed	Forest with vegetation community predominantly composed of White Cypress Pine and Narrow-leaved Ironbark	Sedge grass grows in hummocks on RB Open pasture above LB	State Forest	2	V shaped channel
I	Low sinuosity, relatively straight with gradual bend	Relatively stable, some lateral erosion evident	LBH - 1m RBH - 3m with 4m terrace CWB - 1.8m	Sand prevailing	Forest with vegetation community predominantly composed of White Cypress Pine and Narrow-leaved Ironbark	Sedge grasses on both banks Open pasture above RB	State Forest	3	Incised channel with exposed roots exposed bedrock escarpment with 3m terrace on RB
I	Low sinuosity, relatively straight with gradual bend	Bedrock on RB confining channel	Not measured, refer photo 4	Silty gravel with many exposed roots	Forest with vegetation community predominantly composed of White Cypress Pine and Narrow-leaved Ironbark	Tussock grass present in clumps on both banks and also in floodplain	State Forest	4	Incised channel with exposed roots
II	Low sinuosity, relatively straight with gradual bend	Relatively stable, some lateral erosion evident as slumping on edges of channel	CWT - 3m LBH - 1.8m RBH - 1.8m CWB - 1m	Silty sand bed with sand sheets between small bars	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Sedge grasses on both banks and floodplain	Past agricultural land with some regrowth	5	-

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream



**Goonbri Creek Stream Condition Survey Report - March 2011
Layout 2**

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
II	Low sinuosity, relatively straight with gradual development of slight meanders	Lateral erosion and undercutting evident	CWT - 9.5m LBH - 2m RBH - 1.6m CWB - 3.1m Terrace - 10m length and 3m height	Cobbles and boulders on a sandy gravelly bed.	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Tufts and hummocks of Sedge grasses on both banks	Past agricultural land with some regrowth	6	Exposed roots on side of channel and in bed testament to continual bank and channel erosion
II	Relatively straight channel with bifurcated channel around island	Erosion and undercutting of banks evident	Incised channel on either side of island. Island 1.5m high LBH - 1.7m RBH - 3m	Exposed, jointed conglomerate sandstone bedrock in channel with some cobbles and sandy gravel present	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Tufts and hummocks of Sedge grasses on both banks Island timbered with grasses present	Past agricultural land with some regrowth	7	Continuing occurrence of exposed roots in channel bottom and banks.
II	Bifurcated channel rejoins main channel with continuing low sinuosity	Erosion and undercutting of banks evident	Left channel: LBH - 1m RBH - 1m CWB - 2m Island: 1.5m high and 15m long Right channel: LBH - 1.2m RBH - 1.2m CWB - 1.5m	Gravelly bed	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Tufts and hummocks of Sedge grasses on both banks	Past agricultural land with some regrowth	8	Exposed roots, leaf litter, felled trees from erosion and undercutting of banks and debris in channel
II	Straight channel with low sinuosity	Undulating channel with scour holes and undercutting of banks and some chute and pool formation	Not measured, refer photo 9	Sand and silt bed with large gravel present	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Tufts and hummocks of Sedge grasses on both banks	Past agricultural land with some regrowth	9	Gravel and sand bars between scour holes
II	Straight channel anabranch, now superseded by new more incised flow path	Evidence of past bank undercutting visible	Not measured, refer photo 10	Mixed alluvial sediments	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Tufts and hummocks of Sedge grasses on both banks and in channel	Past agricultural land with some regrowth	10	Dense vegetation in and around old channel which is now an anabranch to the new main channel

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream



**Goonbri Creek Stream Condition Survey Report - March 2011
Layout 3**

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
II	Relatively straight, incised in sections	Minor erosion of banks visible	LBH - 0.6m RBH - 0.6m CWB - 1.5m	Exposed rock bed with soil	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Hummocks of tussock grass present in channel and on open outflow above channel	Past agricultural land with some regrowth	11	New channel supersedes old in smaller flow events
II	Straight with some erratic meanders	Laterally stable	Not measured, refer photo 12	Alluvials mostly covered with grassy regrowth.	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Hummocks of tussock grass present in channel and on open outflow above channel	Past agricultural land with some regrowth	12	Within treed sections bed is choked with branches and detritus, suggesting no recent flows New channel supersedes old in smaller flow events
II	Straight channel with moderate sinuosity and low amplitude of meandering present	Undulating channel with scour holes and undercutting of banks and some chute and pool formation.	CWT - 5.5m LBH - 1.8m RBH - 2m CWB - 1.6m	Silty with some sand in scour	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Hummocks of tussock grass present in channel and on open outflow above channel	Past agricultural land with some regrowth	13	More scour holes evident with increased distance downstream
II	Straight channel with a low amplitude meander	Pools and scour holes evident	Not measured, refer photo 14	Pool with gravelly bed, and a silty matrix	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Hummocks of tussock grass present in channel and on open outflow above channel	Past agricultural land with some regrowth	14	Alternating pools and scour holes in this section of creek
II	Asymmetrical channel with long straight pool	Pools and scour holes evident	CWT - 4m LBH - 1m RBH - 1m	Silty	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Thick tusks of Sedge grasses populate channel margin Trees in floodplain	Past agricultural land with some regrowth	15	Alternating long pools and silty bars
II	Symmetrical channel, relatively straight with pool	Long Pool, undercutting present	Not measured, refer photo 16	Silt matrix	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Sedge grass overhanging into pool, scattered Eucalypt species in floodplain	Past agricultural land with some regrowth	16	Alternating long pools and silty bars
II	Straight channel into farm dam	Long Pool, minor undercutting present	Not measured, refer photo 17	Silty	Secondary Grassland vegetation community	Sedge grasses on banks of farm dam	Past agricultural land with some regrowth	17	-
II	Channel modified due to farm dam spillway	Stable channel, section laterally unconfined	N/a no defined channel	Alluvials	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Various dense, tall grasses and herbaceous plants	Past agricultural land with some regrowth	18	Channel difficult to discern, area prone to flood out

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream

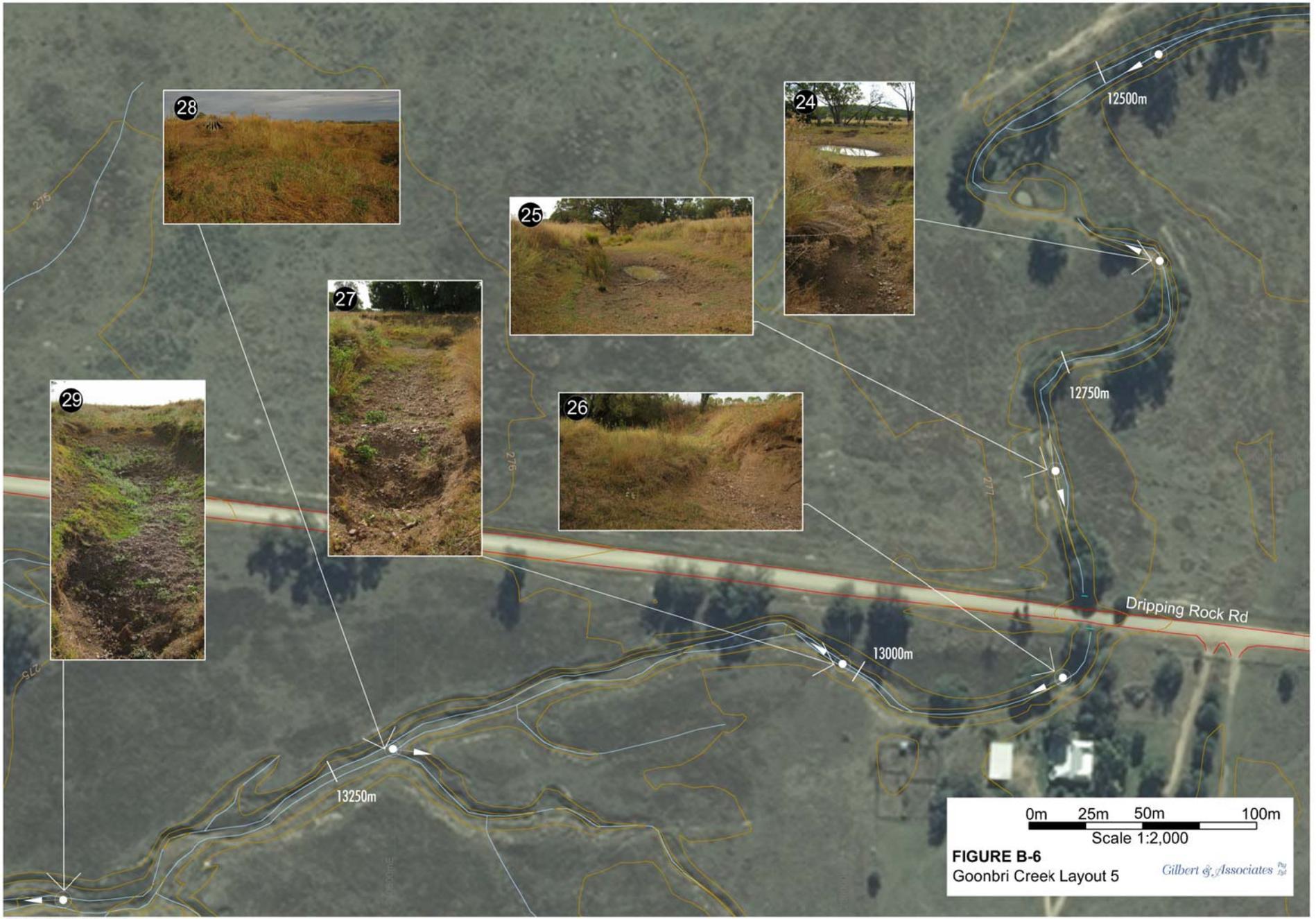


FIGURE B-5
 Goonbri Creek Layout 4 *Gilbert & Associates*

Goonbri Creek Stream Condition Survey Report - March 2011
Layout 4

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
III	Symmetrical channel with fully developed meanders and high sinuosity	Alternating scour holes and sandy bars, potential for continued channel expansion at meander	CWT - 9.5m (including terrace) LBH - 1.3m RBH - 2m CWB - 2m	Silty	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Cluster of various trees scattered alongside channel	Active cropping and pastures	19	In active paddock
III	Moderate sinuosity with meanders, asymmetrical channel with secondary bank on RB	Relatively laterally stable due to tree roots, some adjustment of channel possible	LBH - 1.6m RBH - 1.0m CWB - 2.7m Terrace 6.5m long and secondary RBH 1.3m	Silty	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Cluster of various trees in channel	Active cropping and pastures	20	-
III	Relatively straight and asymmetrical channel with slight bending of channel	Relatively laterally stable due to tree roots, some adjustment of channel possible	CWT - 6.8m LBH - 1.3m RBH - 1.2m CWB - 3.4m	Silty	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Cluster of various trees as mentioned above in channel	Active cropping and pastures	21	Increased proportion and size of erosion and depositional features within paddock areas
III	Moderate sinuosity with meandering, undulating channel with alternating scours/pools and deposition bars/riffles	Minor undercutting of banks present, scour holes and bed erosion visible	Not measured, refer photo 22	Silty	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Tall clusters of trees in riparian zone, native Plains grasses in outflow plain	Active cropping and pastures	22	Close to farm homestead
III	Symmetrical channel with straight channel sections with long pools	Stable channel with pool in long scour hole	Not measured, refer photo 23	Silty	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Trees lining channel, native Plains grass in outflow plain	Active cropping and pastures	23	Pool approximately 50m in length

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream



Goonbri Creek Stream Condition Survey Report - March 2011
Layout 5

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
III	Defined meanders with large amplitude	Laterally active section with bank erosion and deep localised scour holes present-	Not measured, refer photo 24	Mainly sandy silt, and cobbles on top of silt at high points	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation	Active cropping and pastures	24	Defined scour holes in this section of creek
III	Relatively straight with a symmetrical channel	Undulating channel with scour holes and undercutting of banks and some chute and pool formation.	Not measured, refer photo 25	Grassy bed in channel	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation	Active cropping and pastures	25	Alternating scour holes and deposition bars
III	Asymmetrical creek channel with moderate sinuosity	Laterally active section with deep scour holes and chutes between	Not measured, refer photo 26	Cobbles over sandy matrix	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation	Active cropping and pastures	26	Stable sloping RB, LB is terraced
III	Symmetrical channel approaching moderate amplitude meander	Minor undercutting of banks present, scour holes and bed erosion visible	CWT - 4.6m LBH - 2m RBH - 2m CWB - 2.3m	Sand with cobbles in scour hole	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation	Active cropping and pastures	27	Larger stones and cobbles in scour depressions
III	Low sinuosity, relatively straight with gradual development of slight meanders	Deep section of channel with slumping and scours visible	Not measured, refer photo 29	Grassy bed with sand and cobbles	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation	Active cropping and pastures	28	-
III	Asymmetrical creek channel with moderate sinuosity and bank terraces	Laterally inactive section, however deep alternating scour holes and bars	Pool/scour complex - 15m long, 7m width, 1.8m depth	Sandy silty with stones and some cobbles in scour	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation	Active cropping and pastures	29	-

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream

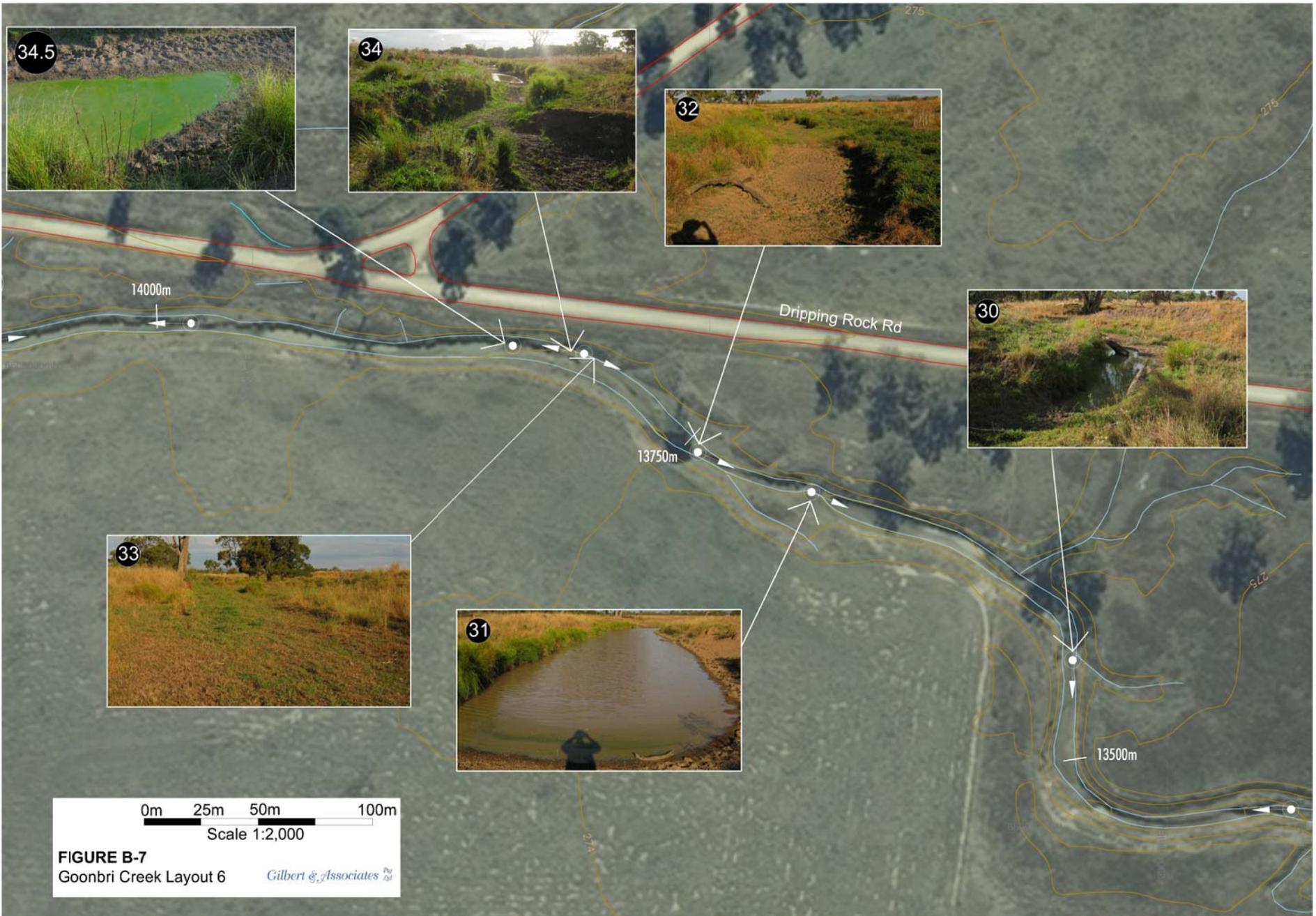


FIGURE B-7
 Goonbri Creek Layout 6 *Gilbert & Associates Pty Ltd*

Goonbri Creek Stream Condition Survey Report - March 2011
Layout 6

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
III	Symmetrical channel approaching moderate amplitude meander	Minor erosion of banks, deep scour holes visible	CWT - 13.5m RBH - 1.3m LBH - 1.5m CWB - 5.8m	Sandy with Silt	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation on banks and clumps of tall Sedge grasses in channel	Active cropping and pastures	30	Pond in scour hole
III	Reasonably symmetrical straight channel	Erosion and slumping on RB	Pond - 30m long, 12-15m width	Silt	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation on banks and clumps of tall Sedge grasses in channel	Active cropping and pastures	31	Featureless floodplain in paddock
III	Reasonably symmetrical straight channel	Moderate lateral stability above scour hole	Not measured, refer photo 32	Silt	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation on banks and clumps of tall Sedge grasses in channel	Active cropping and pastures	32	-
III	Low sinuosity, relatively straight with gradual development of slight meanders	Undercutting of banks visible, channel stable with grass colonisation on bars	Not measured, refer photo 33	Grassy	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation on banks and clumps of tall Sedge grasses in channel	Active cropping and pastures	33	Featureless floodplain in paddock
III	Low sinuosity, relatively straight with gradual development of slight meanders	Undercutting of banks and resultantly moderate lateral stability	Not measured, refer photo 34	Predominantly silty with grass cover	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation on banks and clumps of tall Sedge grasses in channel	Active cropping and pastures	34	-
III	Low sinuosity, relatively straight with gradual development of slight meanders	Undercutting of banks and resultantly moderate lateral stability	Not measured - refer photo 34.5	Predominantly silty	Secondary Grassland vegetation community	Open paddock with native Plains grass colonisation on banks and clumps of tall Sedge grasses in channel	Active cropping and pastures	34.5	Pool possibly eutropic with algae on surface and at depth

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream

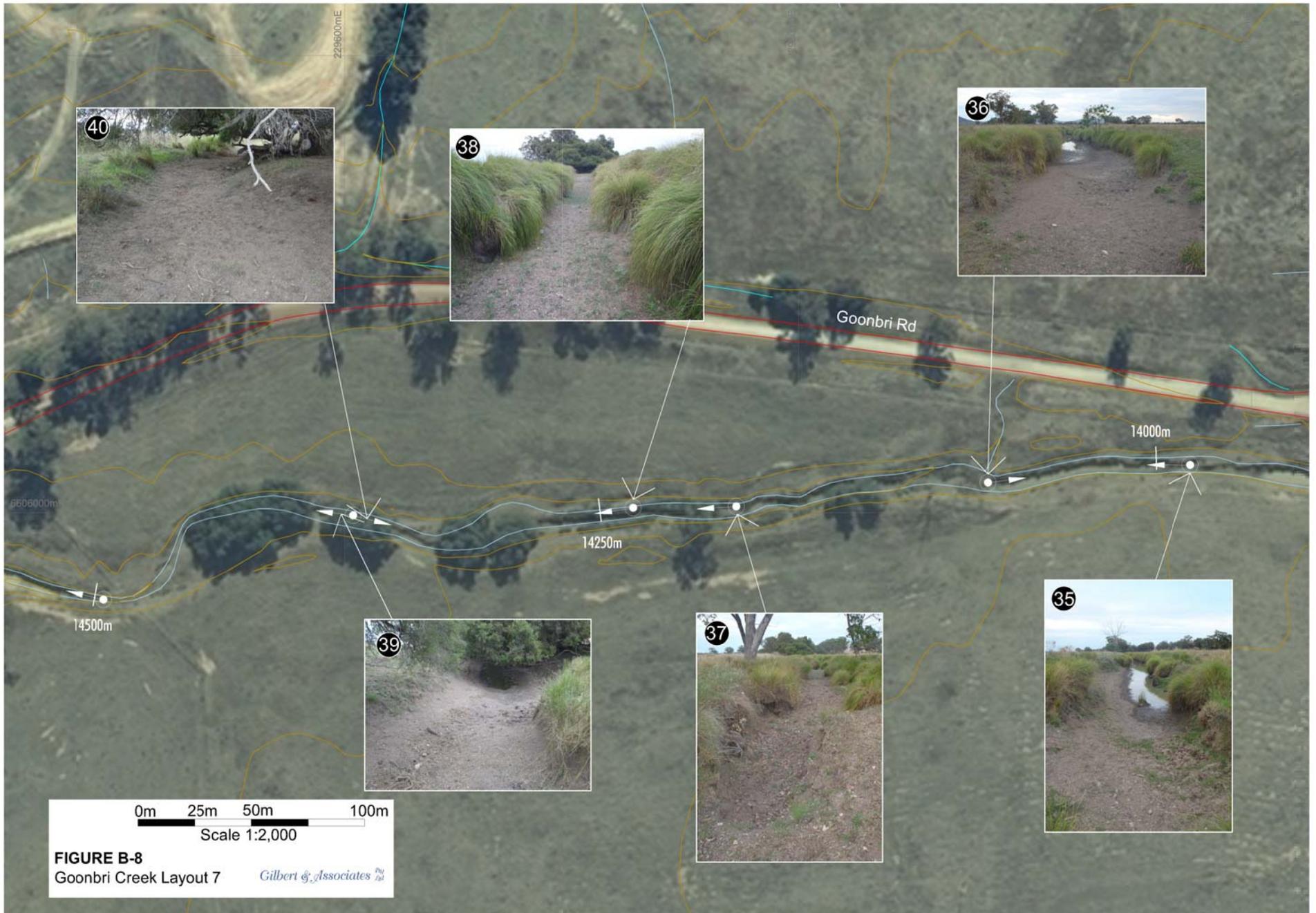


FIGURE B-8
 Goonbri Creek Layout 7 *Gilbert & Associates*

Goonbri Creek Stream Condition Survey Report - March 2011
Layout 7

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
IV	Low sinuosity, relatively straight with gradual development of slight meanders	Trench-like erosion with undercutting of banks and moderate lateral stability	Not measured, refer photo 35	Silty with Sand and stones	Secondary Grassland vegetation community	Sedges, tall native Plains grasses in paddock	Non active, re-colonised pasture	35	Persistent grasses growing on margin of channel aiding in lateral stability
IV	Low sinuosity, relatively straight with gradual development of slight meanders	Trench-like erosion with undercutting of banks and moderate lateral stability	Not measured, refer photo 36	Silty bed with some sand	Secondary Grassland vegetation community	Sedges, tall native Plains grasses in paddock	Non active, re-colonised pasture	36	Persistent grasses growing on margin of channel aiding in lateral stability D/S grassy hummocks and levee on left bank
IV	Low sinuosity, with slight channel undulation	Slight undercutting of banks	Not measured, refer photo 37	Sandy channel	Secondary Grassland vegetation community	Sedges, tall native Plains grasses in paddock	Non active, re-colonised pasture	37	Featureless floodplain continues Tusks of grasses on channel banks
IV	Straight channel	Trench-like erosion with grasses aiding in lateral stability	CWT - 7m LBH - 1.4m RBH - 1.4m CWB - 2.8m	Sandy bed with stones and some cobbles	Secondary Grassland vegetation community	Sedges, tall native Plains grasses in paddock	Non active, re-colonised pasture	38	Persistent grasses growing on margin of channel aiding in lateral stability
IV	Channel diverted around copse of trees	Little undercutting and erosion	Not measured, refer photo 39	Sandy bed with stones	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Sedges, tall native Plains grasses in paddock, native trees in channel	Non active, re-colonised pasture	39	Trees adjacent to channel adding cohesion to banks
IV	Channel diverted around copse of trees	Little undercutting and erosion	Not measured, refer photo 40	Sandy bed with stones	Predominantly open grassland with scattered stands of Blakely's Red Gum - Yellow Box - Rough-barked Apple - Belah - Paperbark vegetation community	Sedges, tall native Plains grasses in paddock, native trees in channel	Non active, re-colonised pasture	40	Trees adjacent to channel adding cohesion to banks

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream



Goonbri Creek Stream Condition Survey Report - March 2011
Layout 8

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
IV	Symmetrical channel, low sinuosity, relatively straight with gradual development of slight meanders	Undercutting of banks with moderate lateral stability	Large permanent pool, 20m long and 4-5m width	Silt	Secondary Grassland vegetation community	Abundance of aquatic plants in pond, typical tall Sedge grasses on channel banks and native Plains grass on overbank floodplain	Non active, re-colonised pasture	41	-
IV	Somewhat symmetrical channel, sharp left hand bend against high bank	Scour holes evident	Not measured, refer photo 42	Sandy with gravel	Secondary Grassland vegetation community	Hummocks of Sedge grasses on edges of channel, overbank featureless floodplain dominated by tall native Plains grass	Non active, re-colonised pasture	42	Complex scour holes prevalent in entire reach
IV	Sinuuous channel with large amplitude meander , high bank on RB	Scour holes evident	CWT - 11m LBH - 1.2m RBH - 1.2m high bank 2.2m CWB - 3.5m	Silty sand with gravel present	Secondary Grassland vegetation community	Hummocks of Sedge grasses on edges of channel, overbank featureless floodplain dominated by tall native Plains grass	Non active, re-colonised pasture	43	-
IV	Symmetrical channel, relatively straight, approaching a bend.	Scour holes evident	CWT - 12m LBH - 1m RBH - 1m CWB - 2.4m Terrace above main channel has total width of 21m	Silty sand with gravel present	Secondary Grassland vegetation community	Hummocks of Sedge grasses on edges of channel, overbank featureless floodplain dominated by tall native Plains grass	Non active, re-colonised pasture	44	Channel geometry measured at riffle in channel between scour holes
IV	Symmetrical channel, relatively straight, approaching a bend.	Scour holes evident	CWT - 12m LBH - 1m RBH - 1m CWB - 2.4m Terrace above main channel has total width of 21m	Silty sand with gravel present	Secondary Grassland vegetation community	Hummocks of Sedge grasses on edges of channel, overbank featureless floodplain dominated by tall native Plains grass	Non active, re-colonised pasture	44.5	Still pool in bed. Pool with green algae present and some fish still alive
IV	Relatively straight channel with slight meander	Deep undercutting of banks visible, slumping of both banks and large scour holes present	Not measured, refer photo 45	Silt in pool with sand and gravel deposition present	Secondary Grassland vegetation community	Hummocks of Sedge grasses on edges of channel, overbank featureless floodplain dominated by tall native Plains grass, some unidentified herbaceous growth in channel	Non active, re-colonised pasture	45	Large plunge pool at bend in gully
IV	Relatively straight section of symmetrical channel	Trench-like erosion with undercutting of banks and low lateral stability	CWT - 7m LBH - 2m RBH - 2m CWB - 2m	Sandy, gravelly bed	Secondary Grassland vegetation community	Abundance of aquatic plants in pond, typical tall Sedge grasses on channel banks and native Plains grasses on overbank floodplain	Non active, re-colonised pasture	46	-

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream.

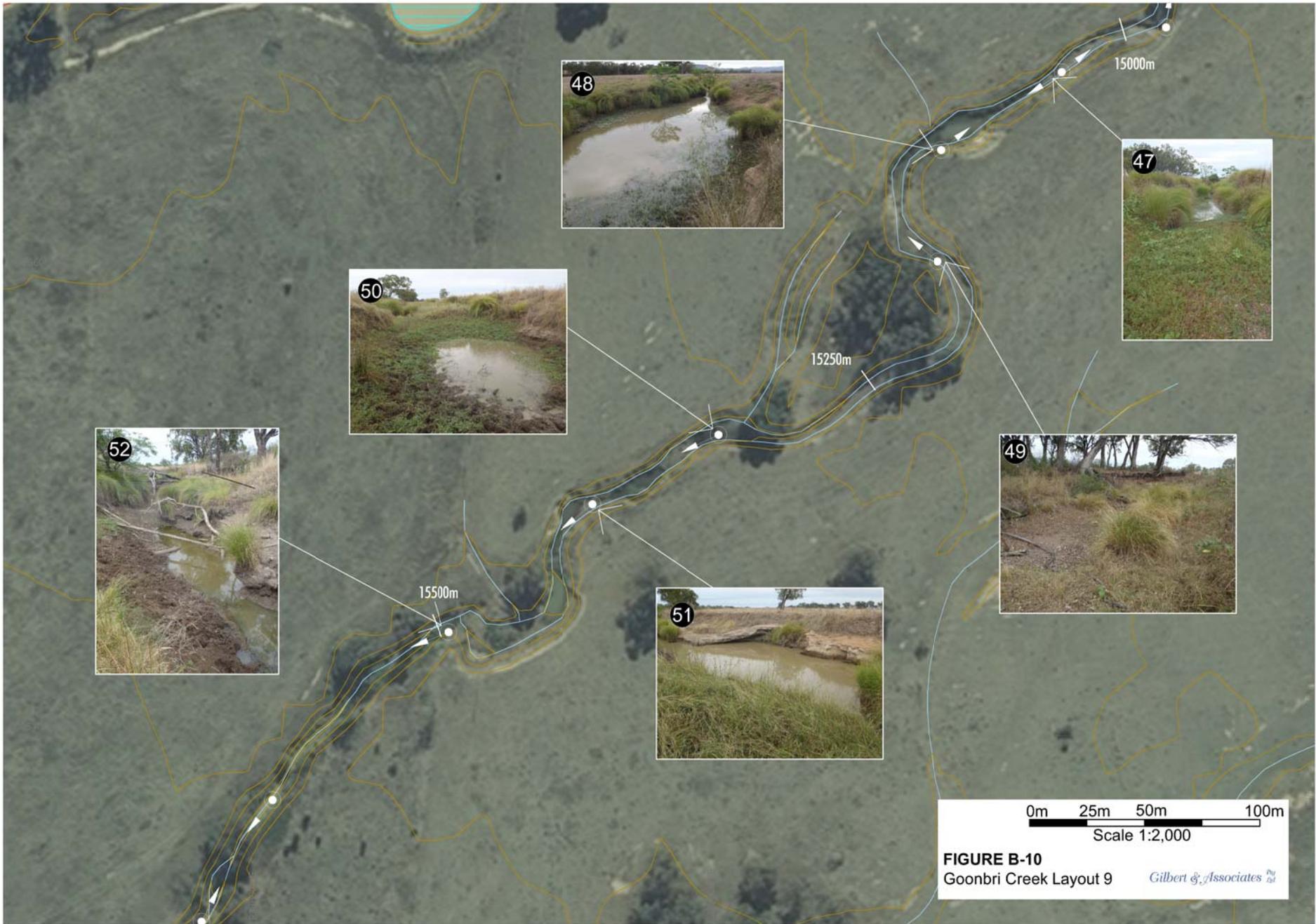


FIGURE B-10
 Goonbri Creek Layout 9 *Gilbert & Associates Pty Ltd*

Goonbri Creek Stream Condition Survey Report - March 2011
Layout 9

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
IV	Relatively straight section of channel	Trench-like channel with undercutting of banks and low lateral stability, pools located in larger scour holes	CWT - 7m LBH - 2m RBH - 2m CWB - 2m	Sandy gravelly bed on bars	Vegetation community primarily composed of Poplar Box - Pilliga Box - White Cypress Pine	Abundance of aquatic plants in pond, typical tall Sedge grasses on channel banks and native Plains grass on overbank floodplain	Non active, re-colonised pasture	47	Typical trench-like gully formation continues with featureless floodplain of native Plains grass above
IV	Relatively straight, low sinuosity section of channel	Scour holes present	Tear drop shaped pool about 20m length and 15m width	Unknown - Inundated	Secondary Grassland vegetation community	Abundance of aquatic plants in pond, typical tall Sedge grasses on channel banks and native Plains grass on overbank floodplain	Non active, re-colonised pasture	48	Permanent pool
IV	Large meanders present in featureless floodplain,	Obvious undercutting on outside of meander with slumping of bank and scour holes in channel	Not measured, refer photo 49	Sandy banks and channel bed	Secondary Grassland vegetation community	Scattered tufts of Sedge grass, tall grasses and small clumps of trees	Non active, re-colonised pasture	49	-
IV	Relatively straight section of channel with a typical undulating channel surrounded by flat floodplain	Low bank stability with slumping visible, and ponding in large scour holes	Not measured, refer photo 50	Silty sand on bed, sand with some weakly cohesive conglomerate strata on channel sides	Secondary Grassland vegetation community	Abundance of aquatic plants in pond, typical tall Sedges on channel banks and various tall grasses on overbank floodplain	Non active, re-colonised pasture	50	Permanent pools in scour holes
IV	Meandering present in featureless floodplain, reasonably symmetrical trench-like channel	Bedrock controlled planform on RB	Not measured, refer photo 51	Sandy banks with conglomerate bedrock on banks	Secondary Grassland vegetation community	Sedges growing within gully channel and various tall grasses in floodplain	Non active, re-colonised pasture	51	-
IV	Relatively straight section of channel, with a symmetrically eroding channel	Erosion evident	Not measured, refer photo 52	Silty bed, banks with conglomerate bedrock interspersed with alluvial sand	Secondary Grassland vegetation community	Sedges growing within gully channel and various tall grasses in floodplain	Non active, re-colonised pasture	52	Permanent pools in scour holes Note exposed rock strata on RB contributing to a controlled RB planform

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream



0m 25m 50m 100m
 Scale 1:2,000

FIGURE B-11
 Goonbri Creek Layout 10 *Gilbert & Associates Pty Ltd*

Goonbri Creek Stream Condition Survey Report - March 2011
Layout 10

Reach	Plan Form of Channel	Channel Geomorphology	Channel Geometry	Bed Materials	Vegetation Community	Other Vegetation	Adjacent Land Use	Photo Number	Comments
IV	Relatively straight section of channel	Symmetrically eroding channel. Note exposed conglomerate strata on RB contributing to a controlled RB planform	Not measured, refer photo 53	Sandy gravelly bed with conglomerates consisting of gravels in bank zones	Secondary Grassland vegetation community	Sedges growing within gully channel and various tall grasses in floodplain	Non active, re-colonised pasture	53	Chunks of dirt and conglomerate have recently calved off side of steep channels
IV	Straight section of channel	Laterally unstable with evidence of recent slumping and also fallen trees	Not measured, refer photo 54	Sandy gravelly bed with some cobbles present	Secondary Grassland vegetation community	Sedges growing within gully channel and various tall grasses in floodplain, some unidentified herbaceous plants in channel	Non active, re-colonised pasture	54	-
IV	Straight section of channel	Laterally unstable with evidence of recent slumping	Not measured, refer photo 55	Sandy and gravelly where not inundated	Secondary Grassland vegetation community	Sedges growing within gully channel and various tall grasses in floodplain, bushes a few metres tall are scattered above gully banks	Non active, re-colonised pasture	55	-
IV	Large meander in channel just upstream of Haul Road	Incised channel with evidence of lateral instability in recent flow events	Not measured, refer photo 56	Silty sand in channel bed where not inundated	Secondary Grassland vegetation community	Sedges growing within gully channel and various tall grasses in floodplain, bushes a few metres tall are scattered above gully banks	Non active, re-colonised pasture	56	-
IV	Large meander in channel just upstream of Haul Road	Incised channel with evidence of lateral instability in recent flow events, also large felled tree resultantly turned into log jam	Not measured, refer photo 57	Silty sand and gravel in channel bed where inundated	Secondary Grassland vegetation community	Sedges growing within gully channel and various tall grasses in floodplain, overgrown vegetation in section of gully just U/S of haul road	Non active, re-colonised pasture	57	Some herbaceous plants growing in channel
IV	Straight section of channel just U/S of culvert under Haul Road	Heavily vegetated with tusks of tall Sedges and other grasses providing lateral stability to channel	Not measured, refer photo 58	Silty sand and gravel in channel bed	Secondary Grassland vegetation community	Sedges growing on bed margins and various tall grasses in upper channel and in floodplain	Non active, re-colonised pasture	58	20m U/S of Haul Road

Notes: CWT – Channel Width Top; CWB – Channel Width Base; LBH – Left Bank Height; RBH – Right Bank Height; RB – Right Bank; LB – Left Bank; U/S – Upstream; D/S – Downstream



December 2010



May 2011



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TARRAWONGA COAL PROJECT

FIGURE B-12

Goonbri Creek -
Ephemeral Nature

