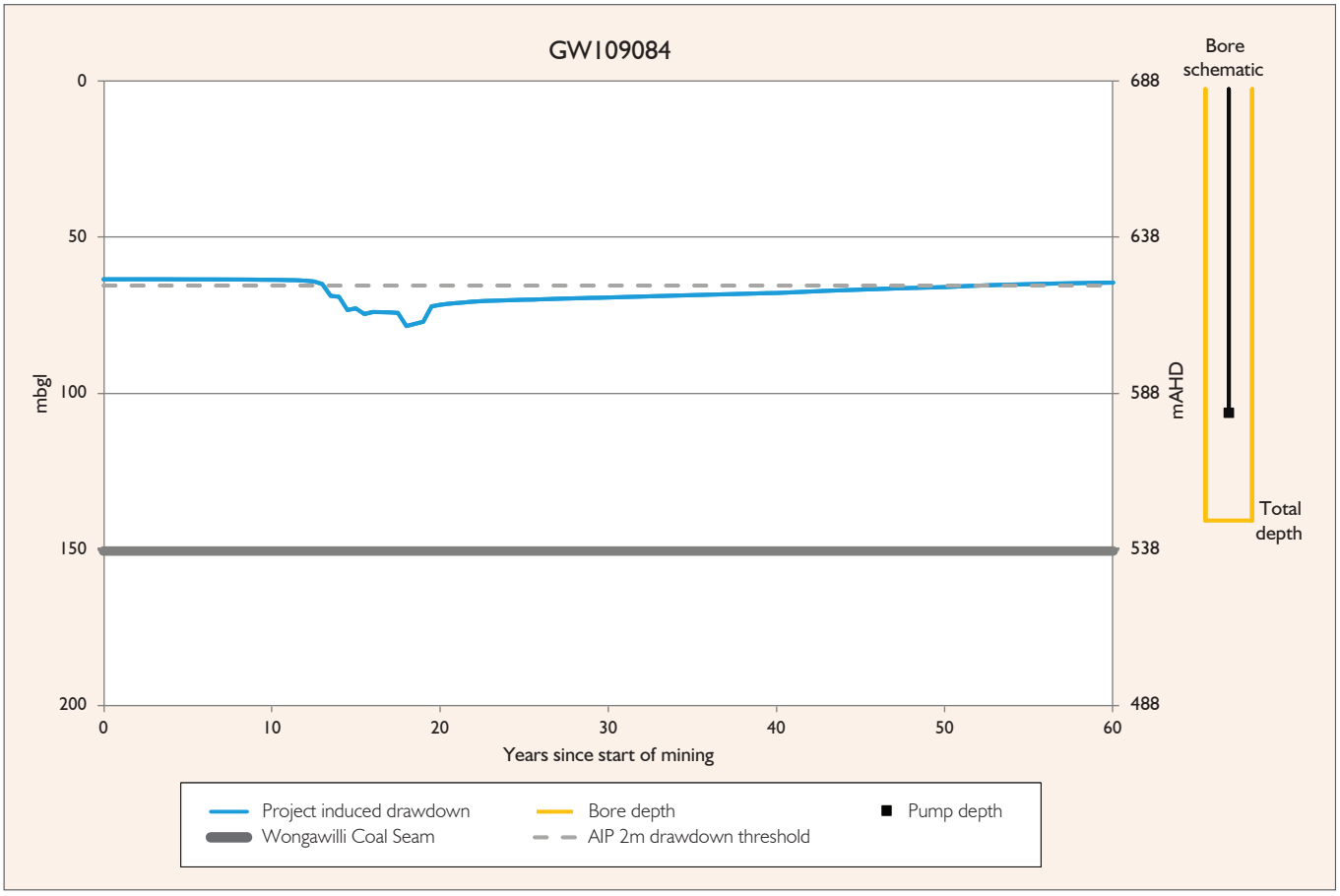
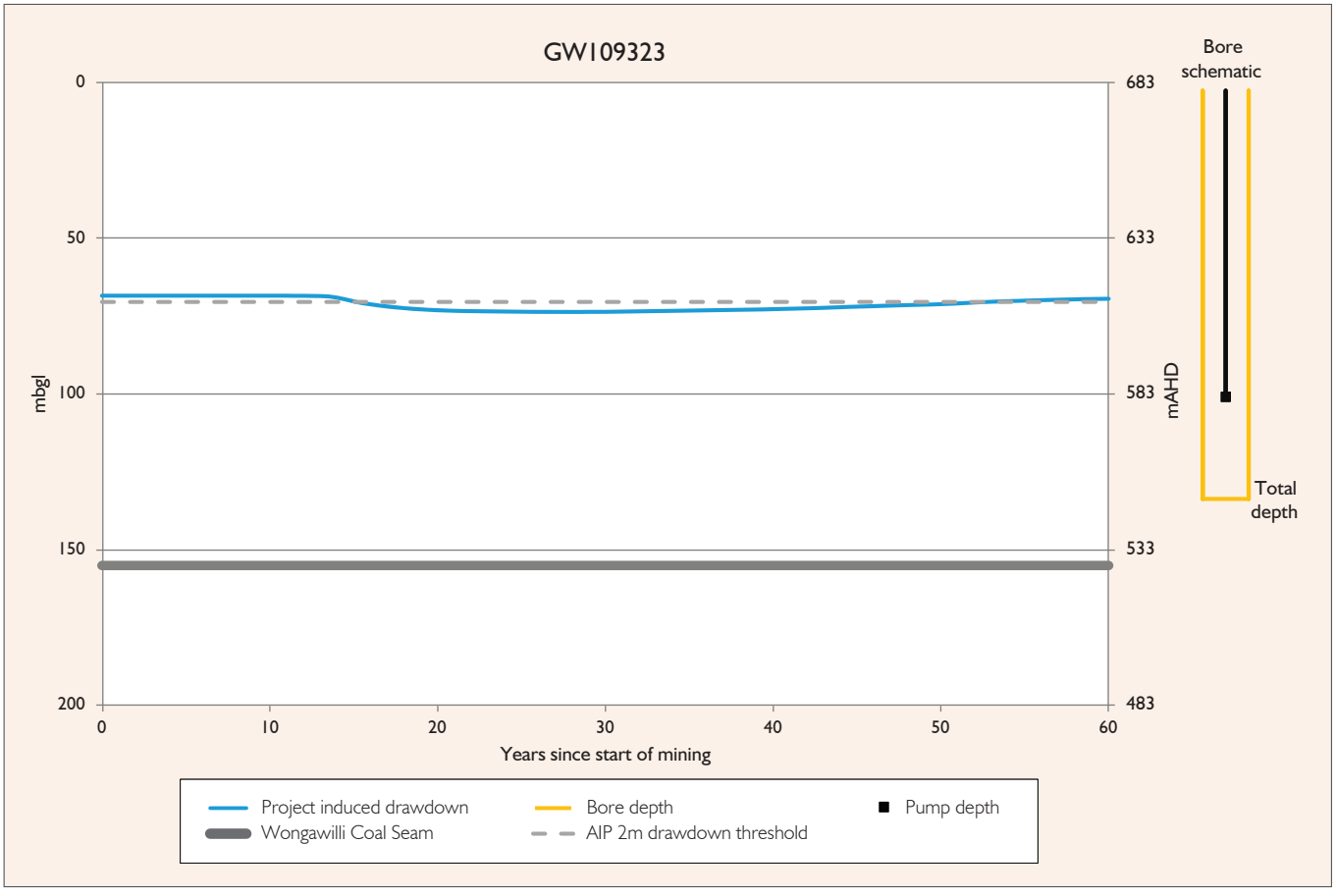
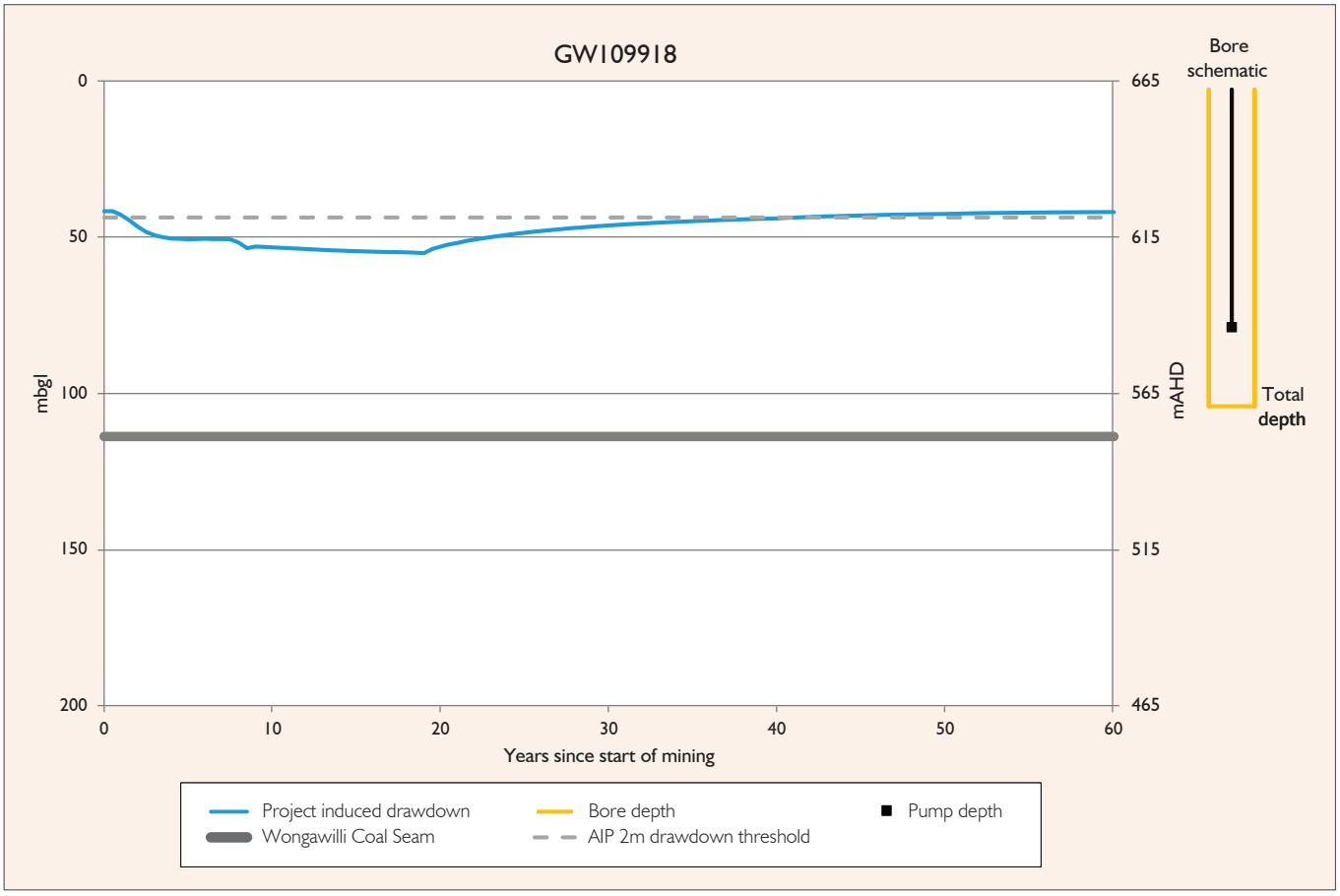
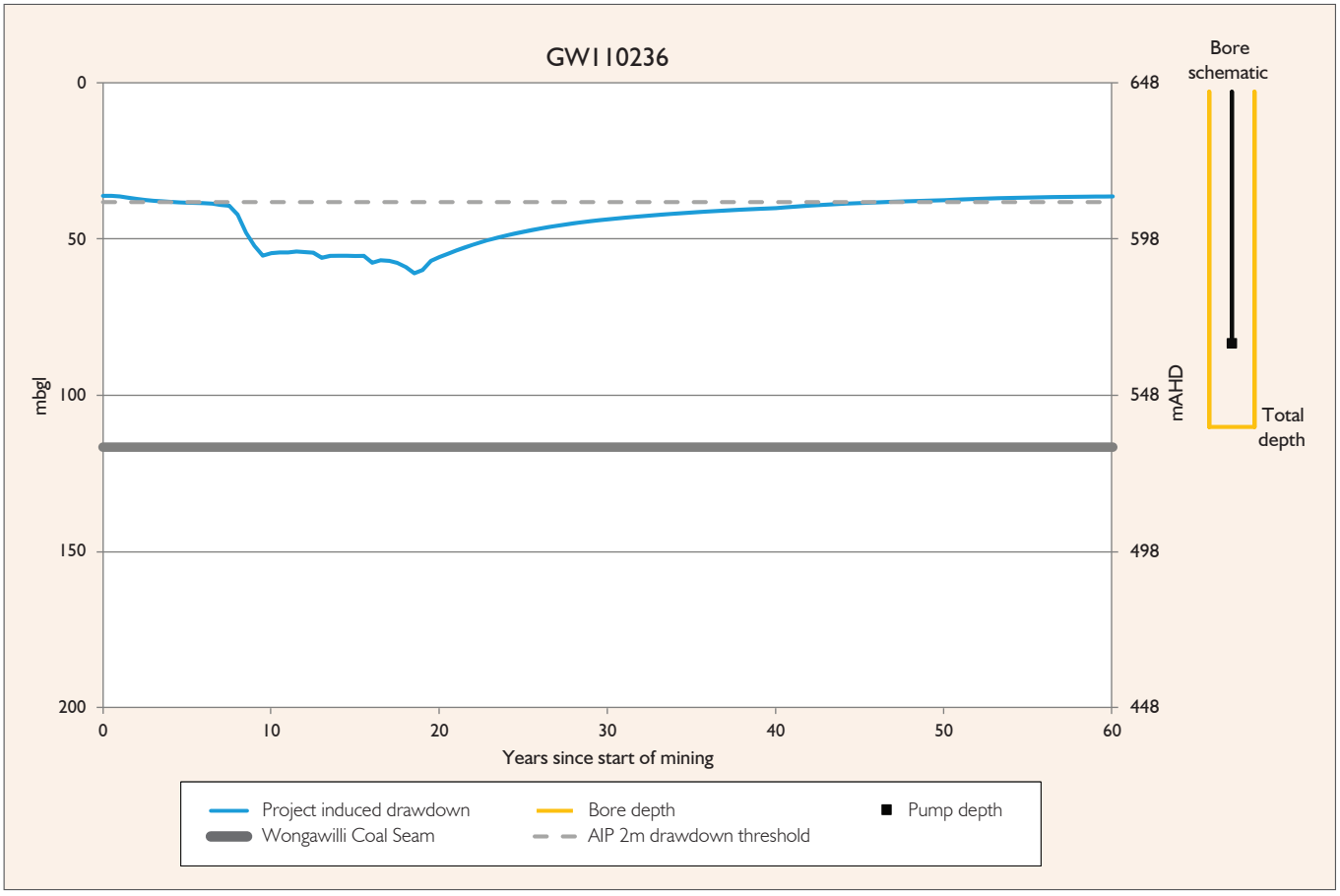
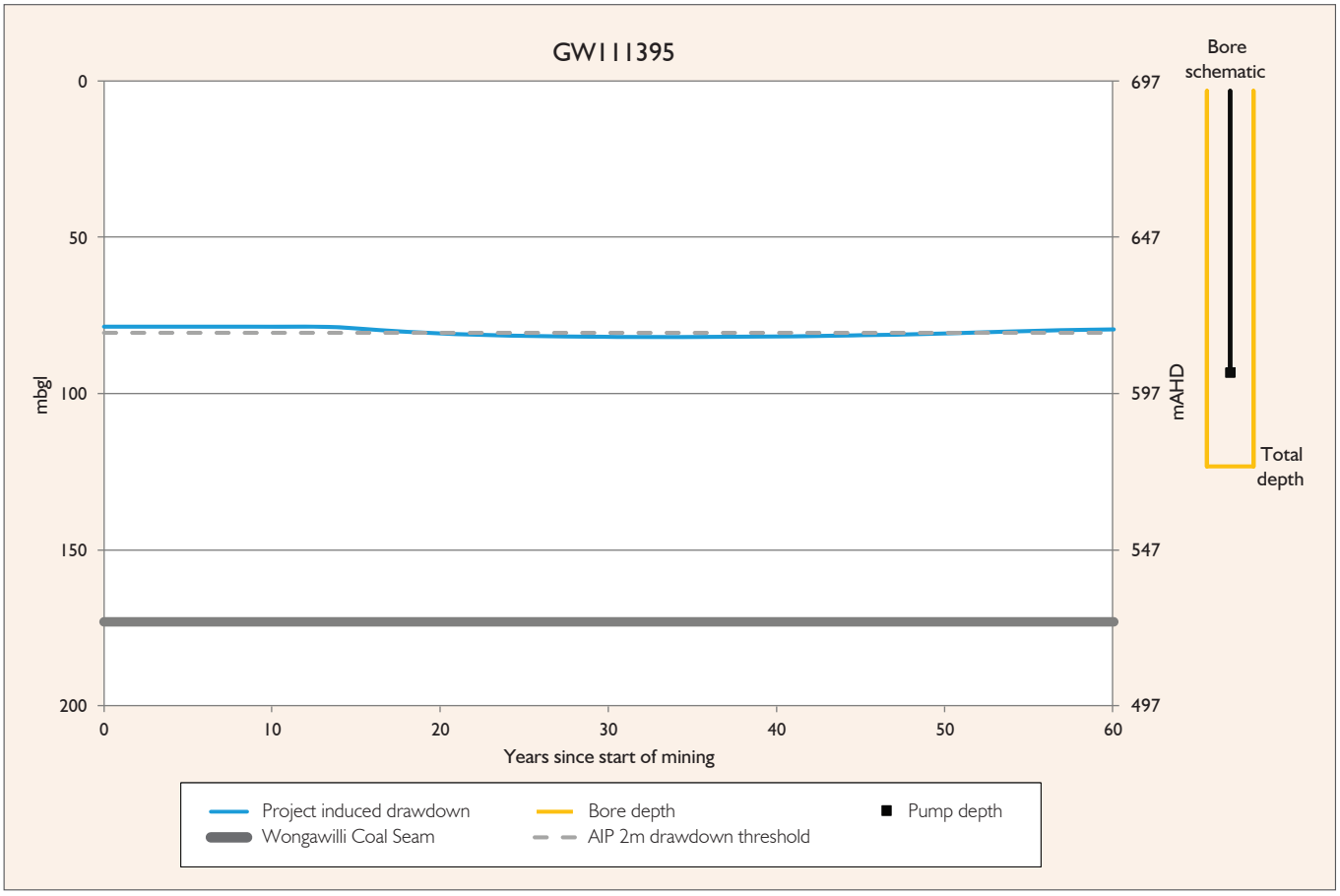
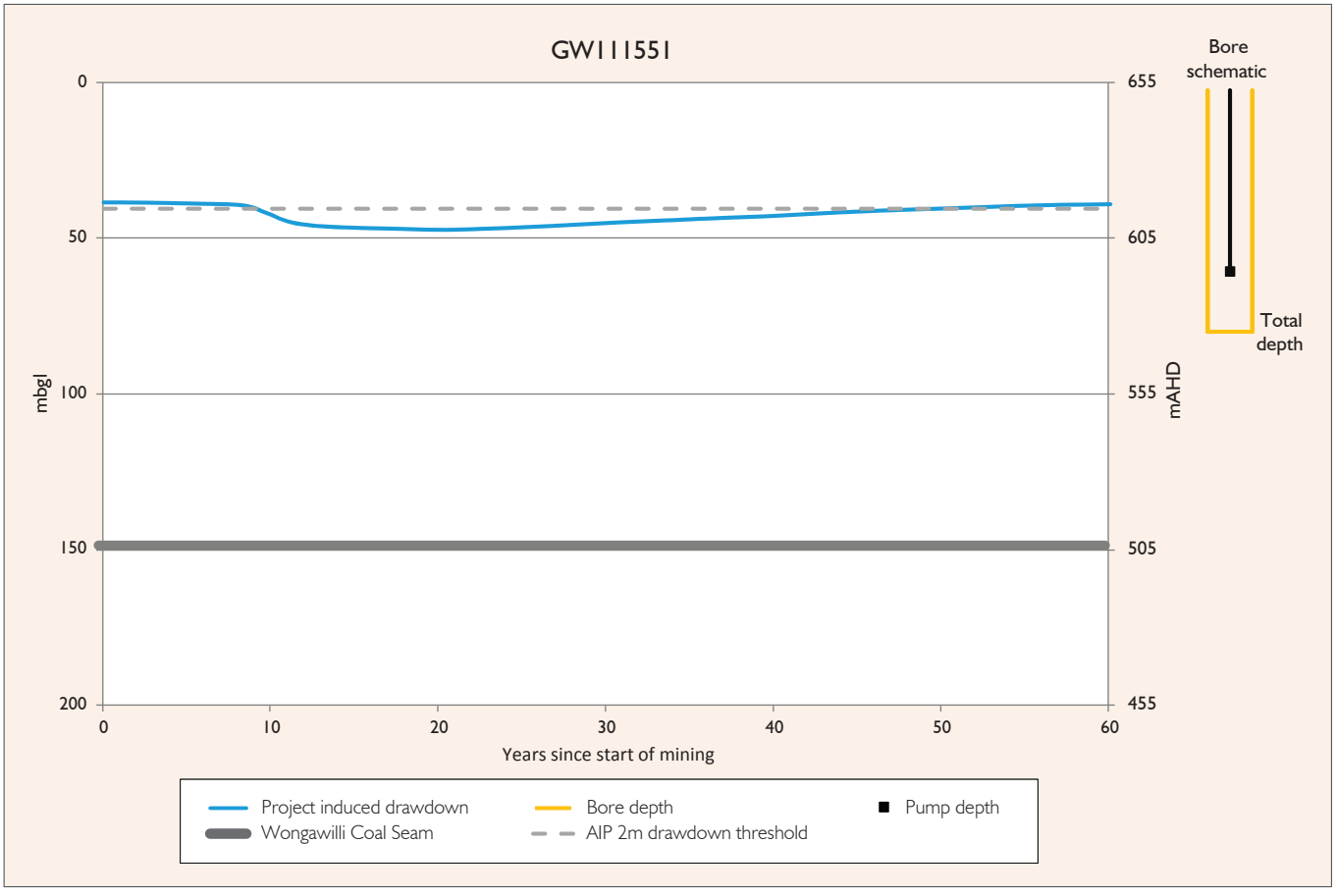

GW109084
Bore schematic
0
50
100
150
200
mbgl
688
638
588
538
488
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth

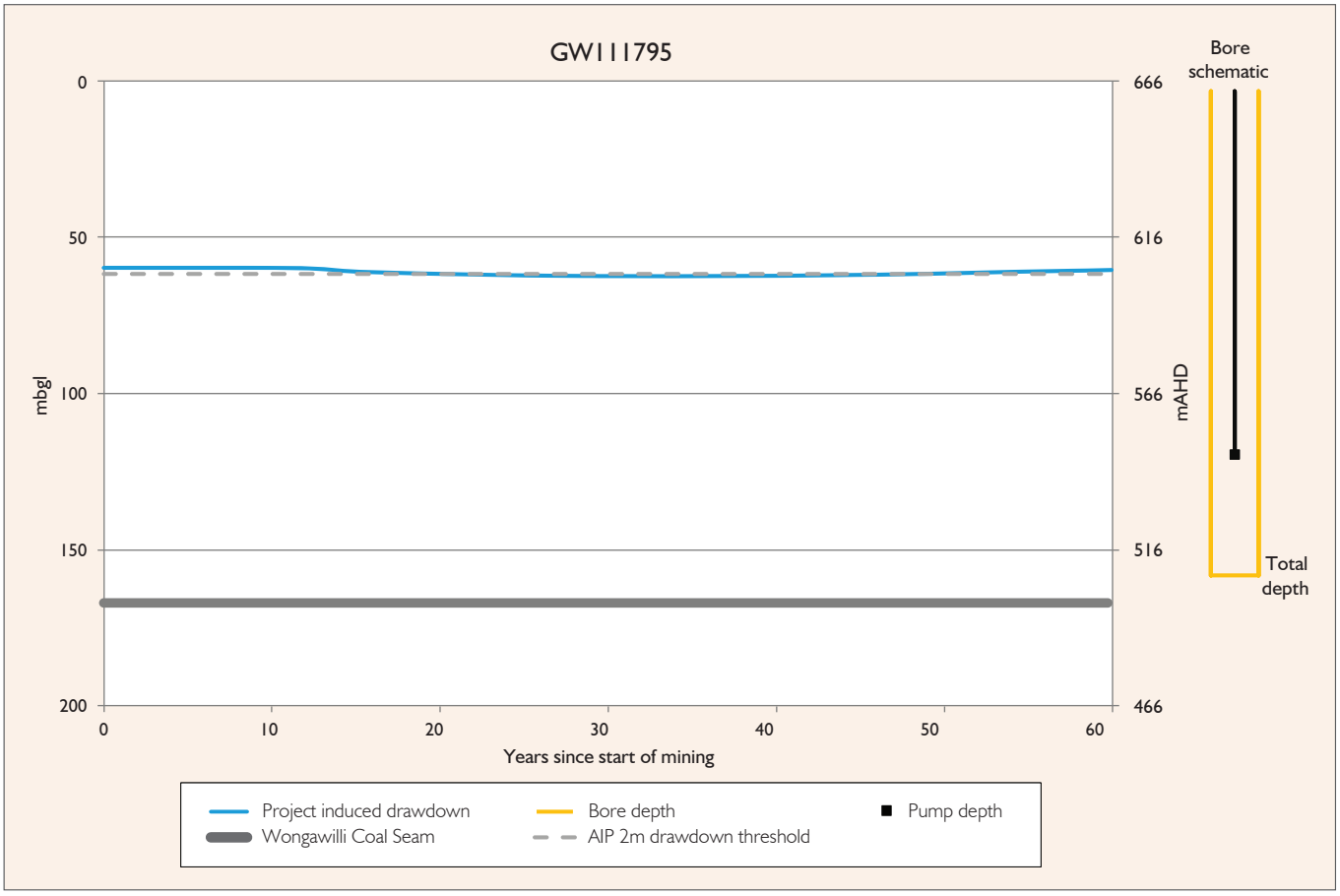

GW109323
Bore schematic
0
50
100
150
200
mbgl
683
633
583
533
483
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth

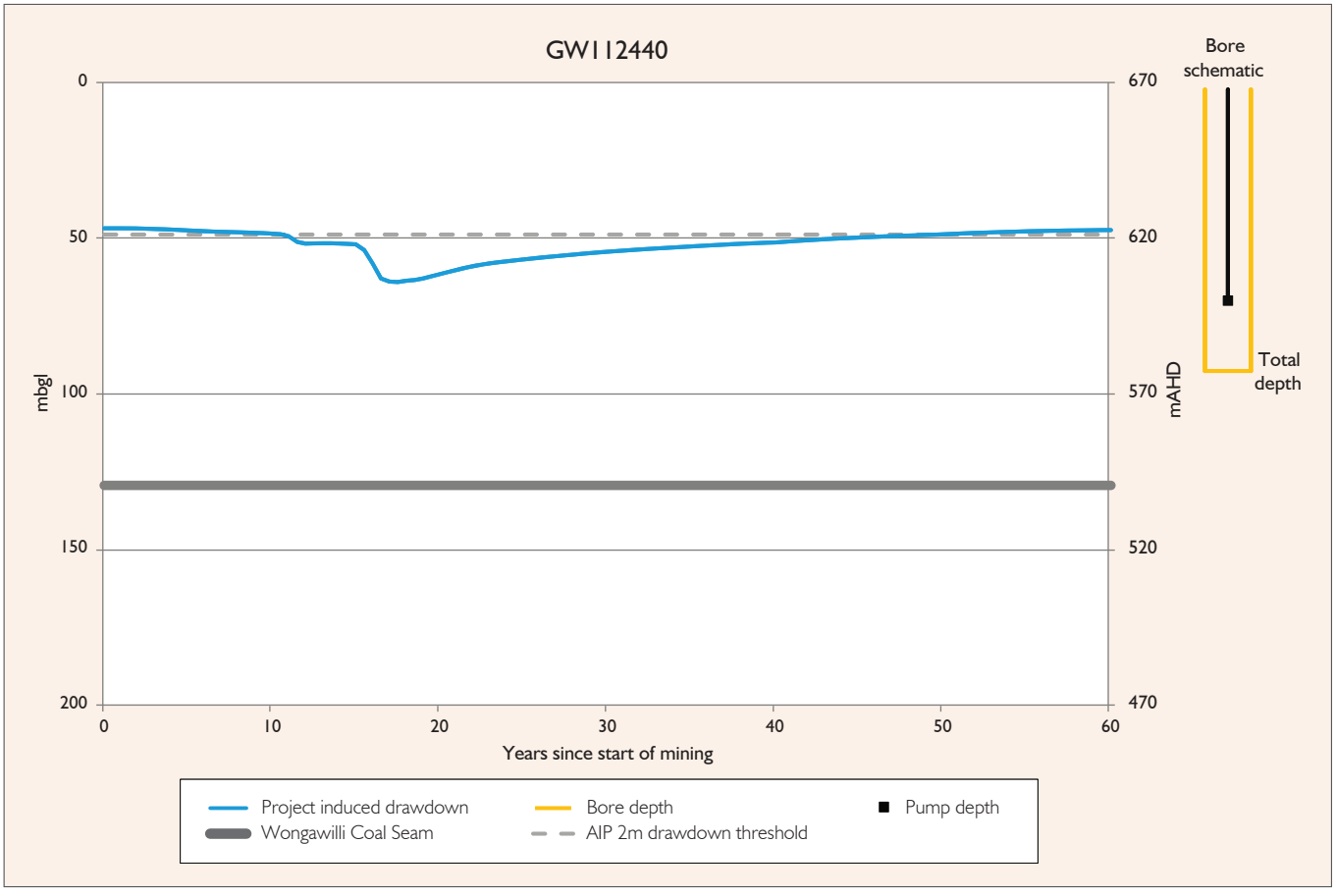

GW109918
Bore schematic
0
50
100
150
200
mbgl
665
615
565
515
465
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth

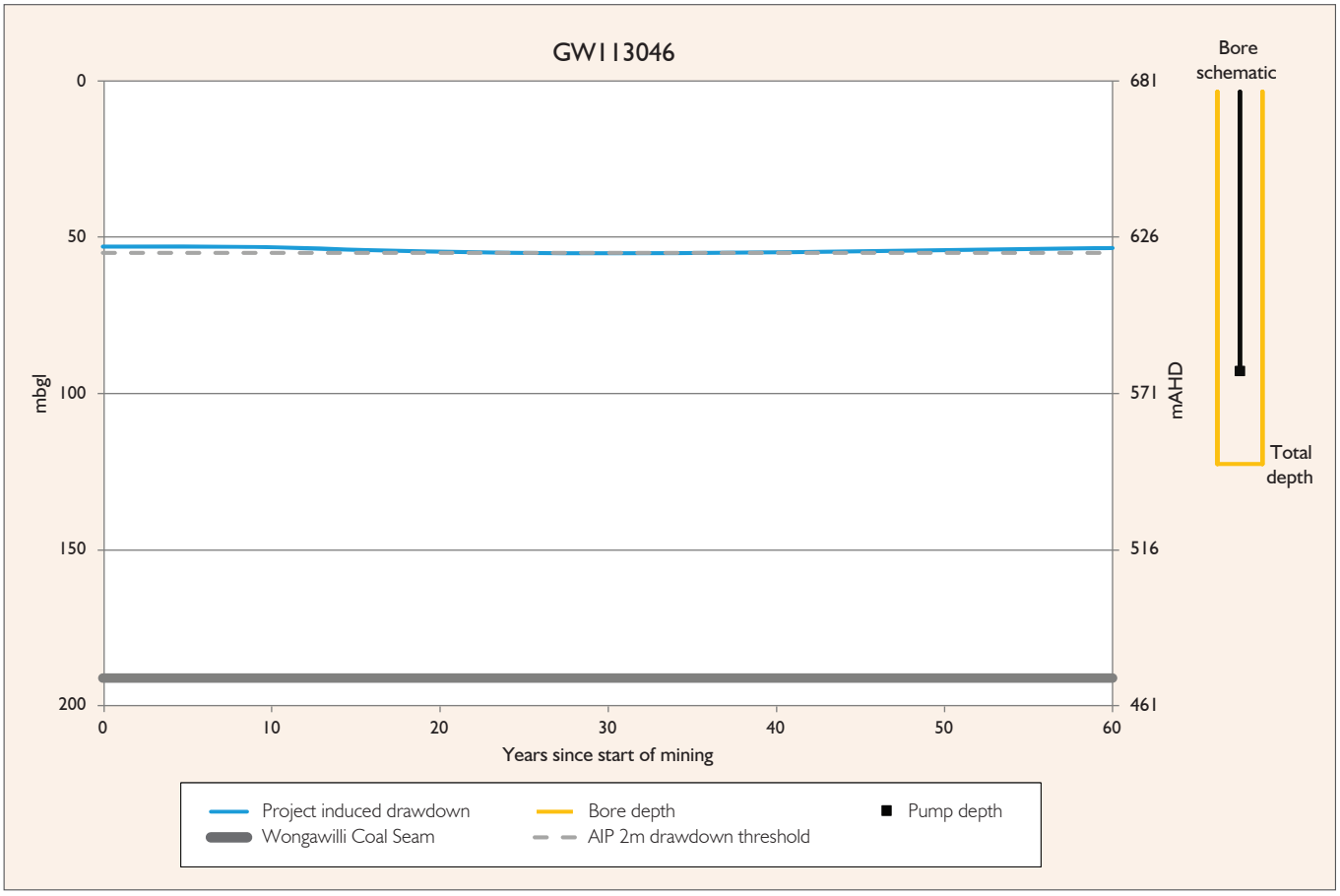

GW110236
Bore schematic
0
50
100
150
200
mbgl
648
598
548
498
448
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth


GW111395
Bore schematic
0
50
100
150
200
mbgl
697
647
597
547
497
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth


GW111551
Bore schematic
0
50
100
150
200
mbgl
655
605
555
505
455
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth


GW111795
Bore schematic
0
50
100
150
200
mbgl
666
616
566
516
466
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth


GW112440
Bore schematic
0
50
100
150
200
mbgl
670
620
570
520
470
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth


GW113046
Bore schematic
0
50
100
150
200
mbgl
681
626
571
516
461
mAHD
Total depth
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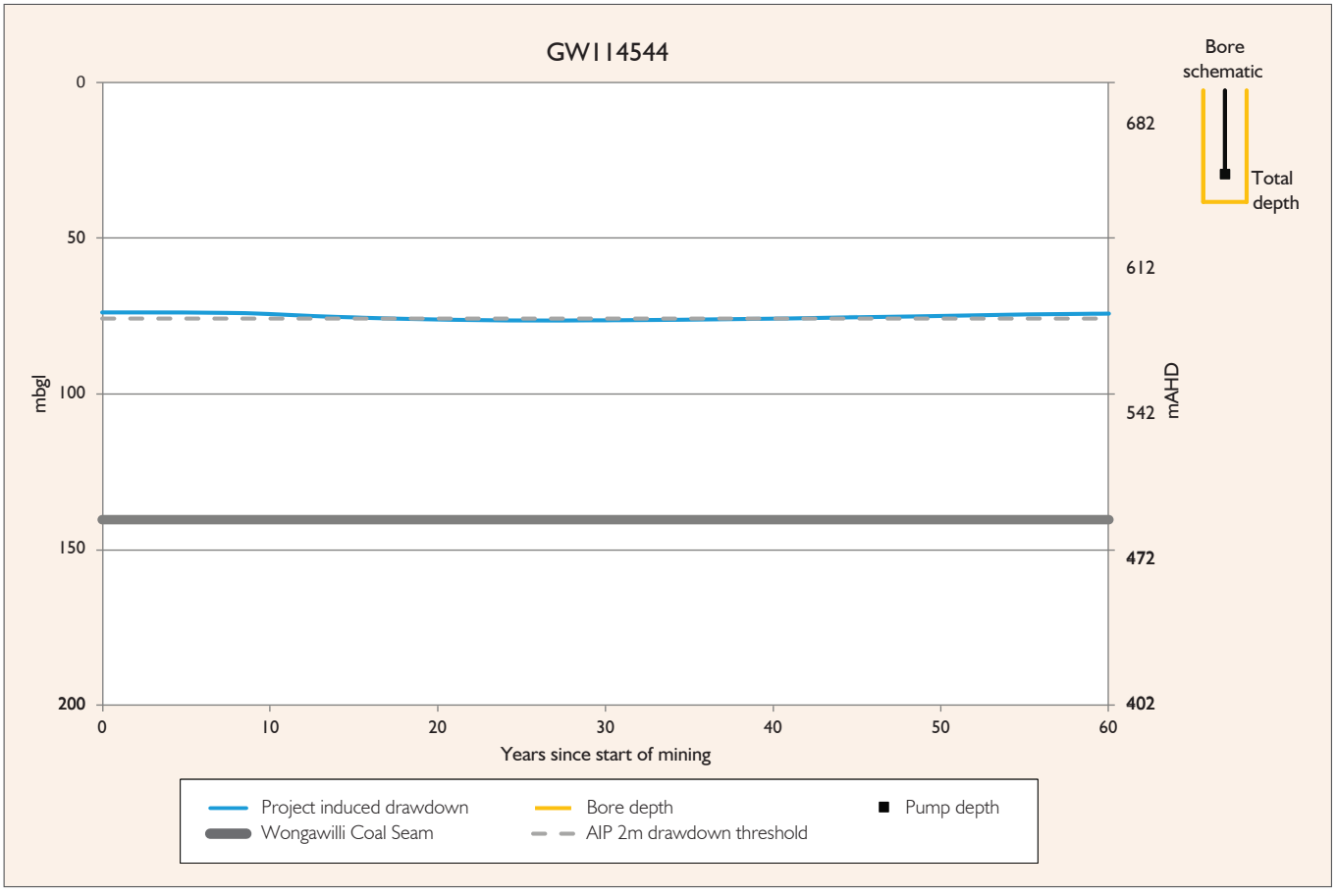
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth


GW114544
Bore schematic
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50
100
150
200
mbgl
682
612
542
472
402
mAHD
Total depth
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth

Appendix C

Bore assessment record

Baseline bore assessment information

Note: If records are indicated as being 'available', they must be supplied as part of the baseline assessment.

PART A: DOCUMENT IDENTIFICATION AND BORE SITE INFORMATION		
Tenure holder	**Given name:**	**Surname:**
	Company name / Property name:	
	ABN (if applicable):	
Tenure	**Lot**	**DP**
Bore	**Bore name:**	**GW number:**
Date of site assessment:		
Location	**Easting:**	**Northing:**
	Location method: ☐ **GPS** ☐ **Surveyed** **Zone:**	
Status of works:	**Existing** ☐ **Abandoned but still usable** ☐ **Other:**	
Addition comments:		

PART B: BORE CONSTRUCTION DETAILS	
Are construction details available? ☐ **Yes** ☐ **No**	
If yes, then verify details (where possible) and supply in the format provided in the Date File Details document. If available, a copy of original log should also be provided. *If no, then complete this section based on the site inspection and reported information from the bore owner representative (if the information is not available then please leave blank)*	
Driller name:	**Drilling company:**
Date the bore was drilled:	**Depth of water bore** *(m)***:**
Water entry *(eg perforations, open hole, screens)***:**	**Water entry length:**
Casing material:	**Inside diameter** *(mm):*
Geological formation from which water is accessed:	
Additional comments:	

PART C: BORE EQUIPMENT AND CONDITION DETAILS					
Is the bore equipped with a pump? ☐ **Yes** ☐ **No** *If Yes then attach photo of surface mounted pumping equipment and well head and complete this section* *If No go to Part D*					
Pump type:			**Pump make and model:**		
Maximum pump capacity *(L/s)***:**					
Power source: ☐ **Electric motor** ☐ **Generator** ☐ **Direct engine** ☐ **Mains supply** ☐ **Windmill** ☐ **Solar**					
Pump intake depth *(depth from ground in metres)***:**					
Pumping rate at the time of visit *(L/s) (If possible, run the pump and measure the pumping rate)***:**					
Is the bore equipped with a meter?	☐ **Yes**	☐ **No**			
	Description				
Headworks description *(provide details on the size and type of riser pipe eg material, diameter, joint type, details of any connection to a reticulation system eg pipe sizes, distances, schematic, diagram, headworks; valves; flow meter)***:**					
Repairs/maintenance history *(provide any commentary on repairs/maintenance undertaken on the bore eg nature and date of work, who has undertaken the maintenance)***:**					
PART D: BORE WATER SUPPLY INFORMATION					
Purpose of bore *(select one or more)*	☐ **Stock** ☐ **Domestic** ☐ **Intensive livestock** ☐ **Irrigation** ☐ **Monitoring**				
	☐ **Other** *(please provide description)* **Description:**				
Usage	**Average volume used yearly (meter)** *(ML/y)*				
	Estimated volume used yearly *(ML/y)*				
	Estimated volume method description:				
Bore utilisation	**How often is the bore utilised** *(estimated hours pumped/day):*				
	Description *(provide information on operational capacity, seasonal variations, peak usage):*				

PART E: WATER LEVEL MEASUREMENT *(Attach landholder agreement)*		
Water level	**Water level** *(meters below top of casing):*	**Artesion pressure** *(KPa):*
	Water level (*meters below ground level)*:	**Method of measuring pressure:**
	Reference point and height of point above ground level *(metres):*	
	Reason not measured:	
Antecedent and/or current conditions relevant to the water level or pressure measurement:		
Are water level and/or pressure records available for this bore? ☐ **Yes** ☐ **No** **If so, type of records:**		
PART F: WATER QUALITY *(Please note that any measurement of water quality should only be undertaken after measuring the standing water level. Water quality parameters required to be sampled are detailed in the baseline assessment guideline.)*		
LABORATORY WATER QUALITY		
Were water quality samples taken for submission to a laboratory? ☐ **Yes** ☐ **No** *(provide reason)*		
Are the laboratory results for the samples indicated above supplied with this baseline assessment? ☐ **Yes** ☐ **No** *(provide reason)*		
Are historical water quality laboratory records available for this bore? ☐ **Yes** ☐ **No**		
FIELD WATER QUALITY		
Were water quality field measurements taken? ☐ **Yes** ☐ **No** *(provide reason)*		
Water quality meter used:		

Field measurements	**Units**	**Result**
pH:		
Temperature:		
Electrical conductivity:		
Dissolved oxygen:		
Dissolved oxygen:		
Redox:		
TDS:		
Other:		
Observations *(colour, smell):*		

Are historical water quality field records available for this bore?	☐ **Yes**	☐ **No**

WATER QUALITY SAMPLING METHODOLOGY

How was the water sample collected

☐ **Installed pump** ☐ **Bailer** ☐ **Grundfos** ☐ **Micropurge Other:**

Was bore purged according to guidelines *(three well volumes)***?**

☐ **Yes** ☐ **No**

Purge method description:

Has a copy of the water level and water quality information collected for the baseline assessment been retained by the bore owner representative?

☐ **Yes** ☐ **No**

ATTACHMENTS

Documentation Type	**Description**
Photos	
☐ **Pump**	
☐ **Water level measure point**	
☐ **Water quality sample setup**	
☐ **Other**	
Documents	
☐ **Drillers log**	
☐ **Water use log**	
☐ **Landholders agreement**	
☐ **Water quality sample lab results from this baseline assessment**	
☐ **Historical water quality results**	
☐ **Other**	

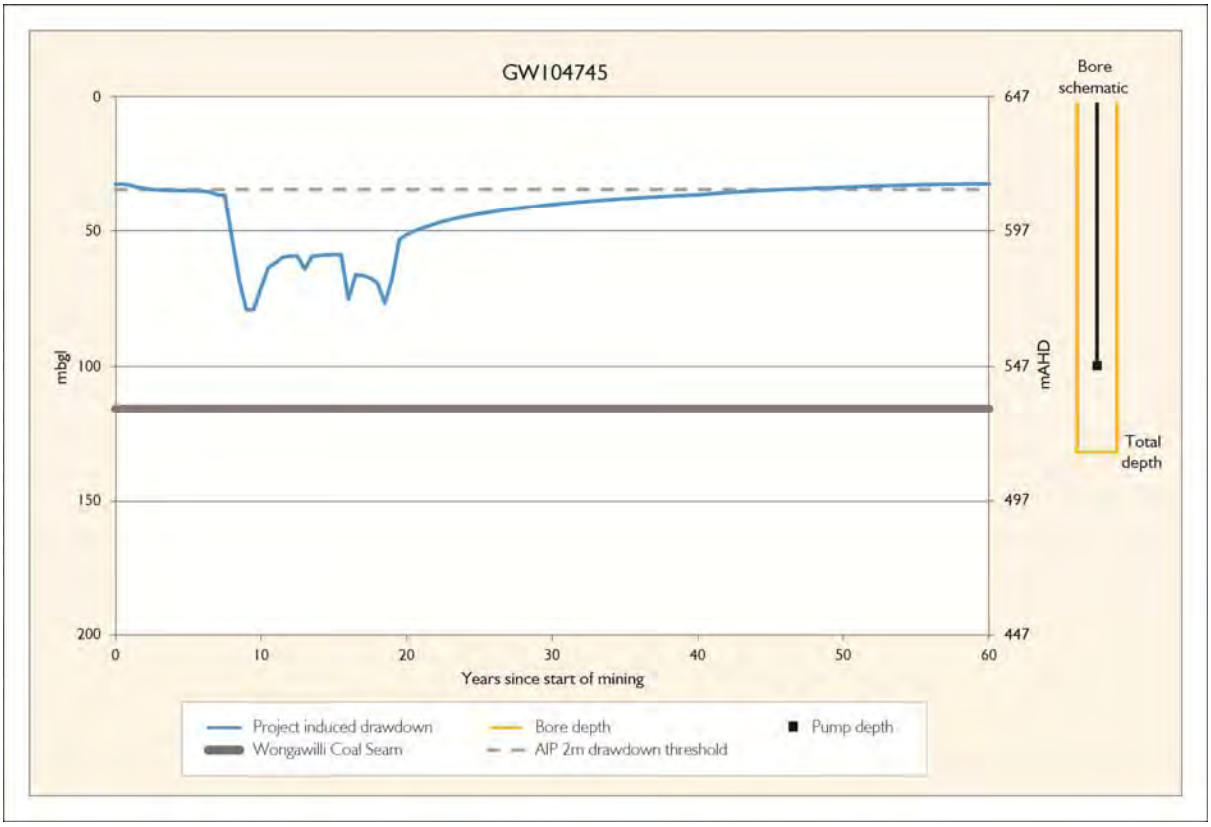
Appendix D

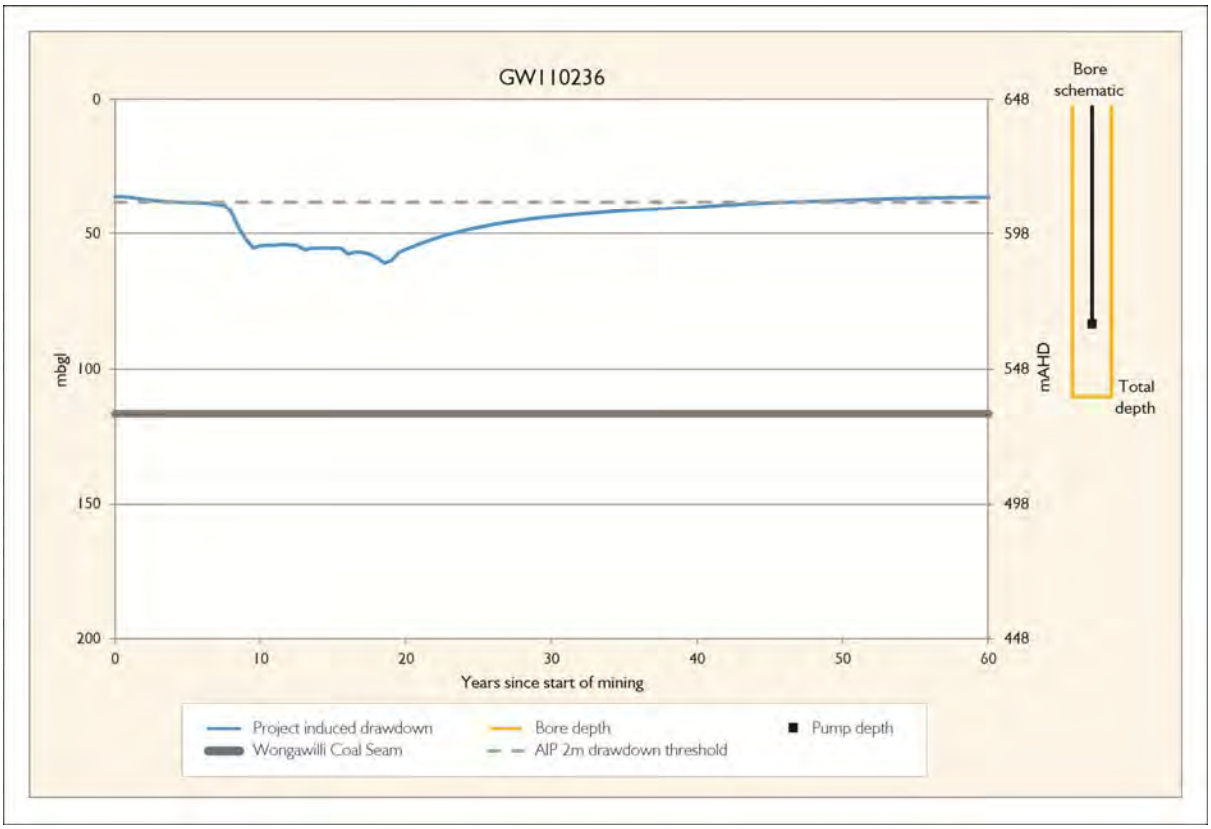
Stage 1 make good bores

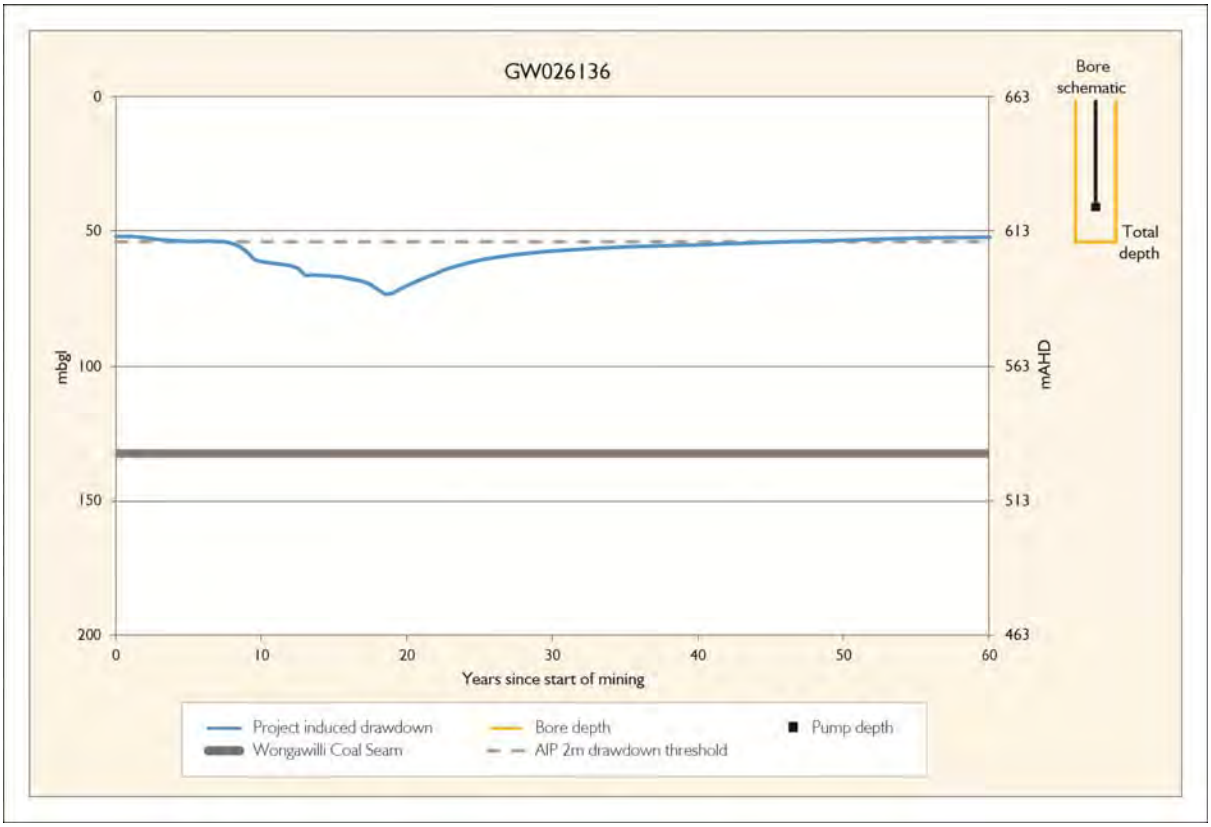
Stage 1 make good bores

Bore ID	**GW104745**	**GW110236**	**GW026136** [2]
Coordinates	E 251266 / N 6174225	E 251246 / N 6174064	E 250554 / N 6174076
Water Access Licence (WAL) purpose	Domestic, stock	Irrigation, stock	Stock, irrigation
Approval Number	10WA110957	10CA112192	10CA112192
Bore depth (m)	130	108	53
Bore target	WG - Upper HSST	Middle HSST	WG - Upper HSST
Maximum project only drawdown (m)	46.8	24.8	21.4
Time to project only 2 m drawdown (year)	2.5	4	7.5[2]
Time to project only 2 m recovery (year)	51.5	52.5	52.5
Duration of project only 2 m drawdown (year)	49	48.5	45
Available head above pump pre mining (m)[1]	65.2	45	-12.3
Available head above pump at maximum drawdown (m)[1]	18.4	20.2	-33.7
Intersect mine working?	Yes	Yes	No
Preliminary Make good option	Replacement bore	Replacement bore	Replacement bore

Predicted drawdown in bores

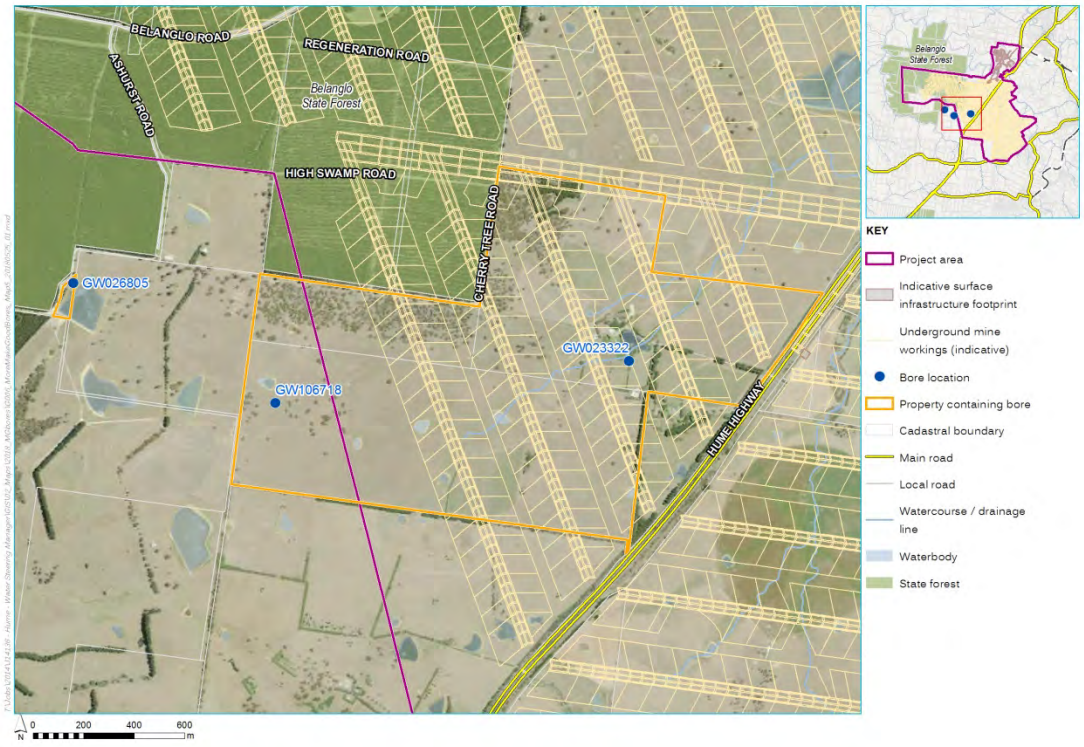




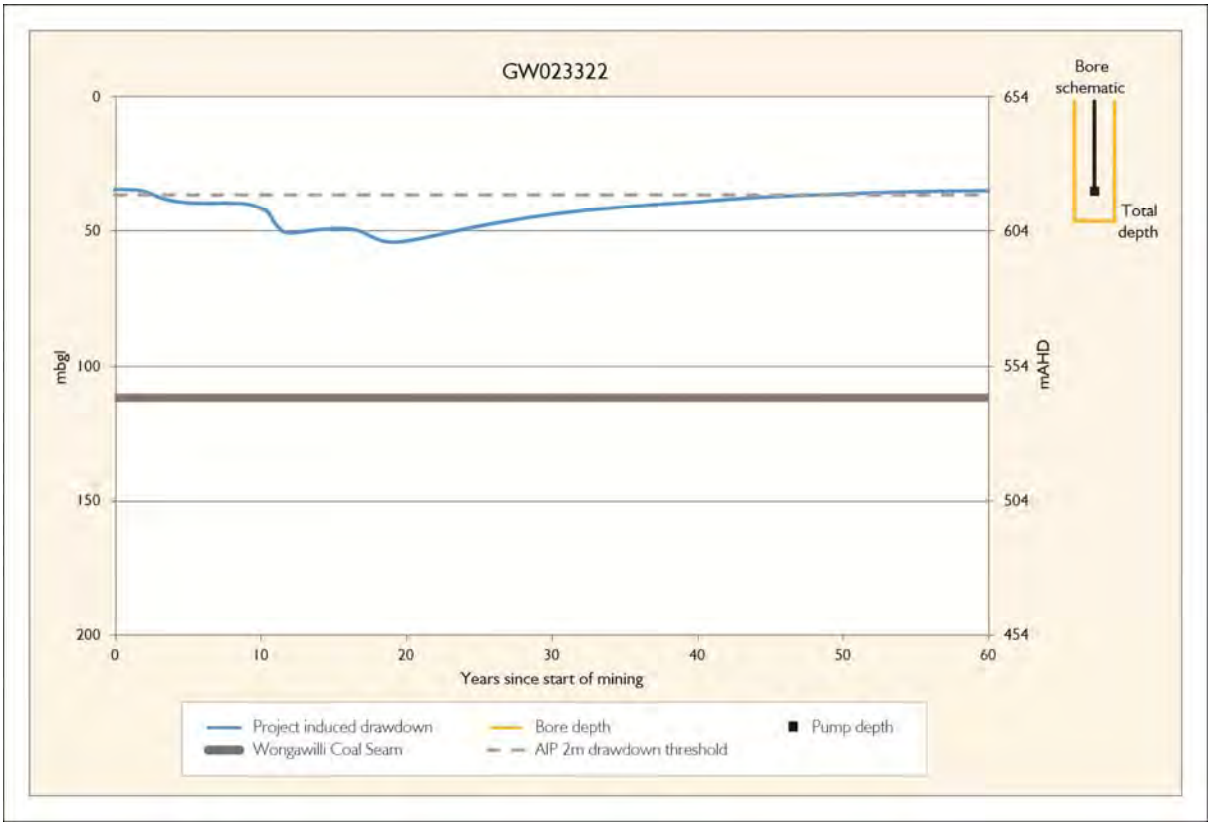

GW026136
Bore schematic
Total depth
0
50
100
150
200
mbgl
663
613
563
513
463
mAHD
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth

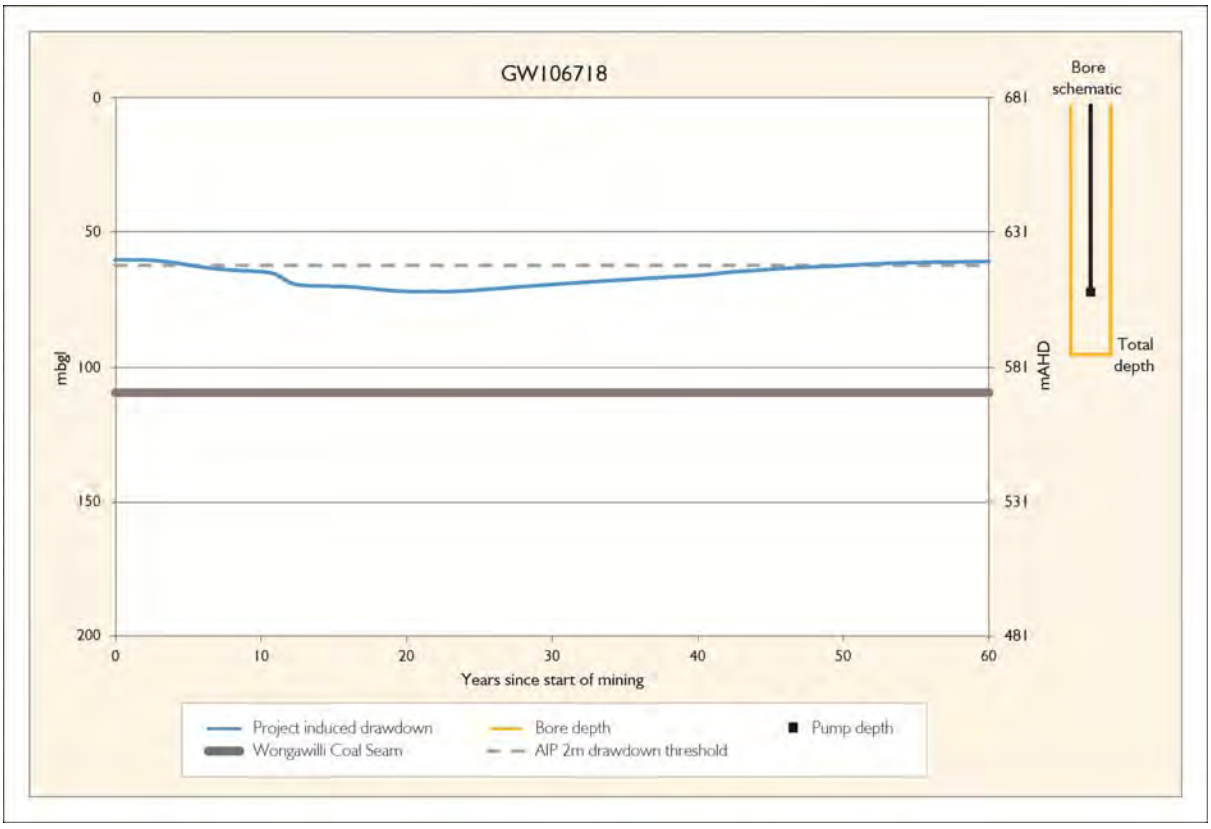
Stage 1 make good bores

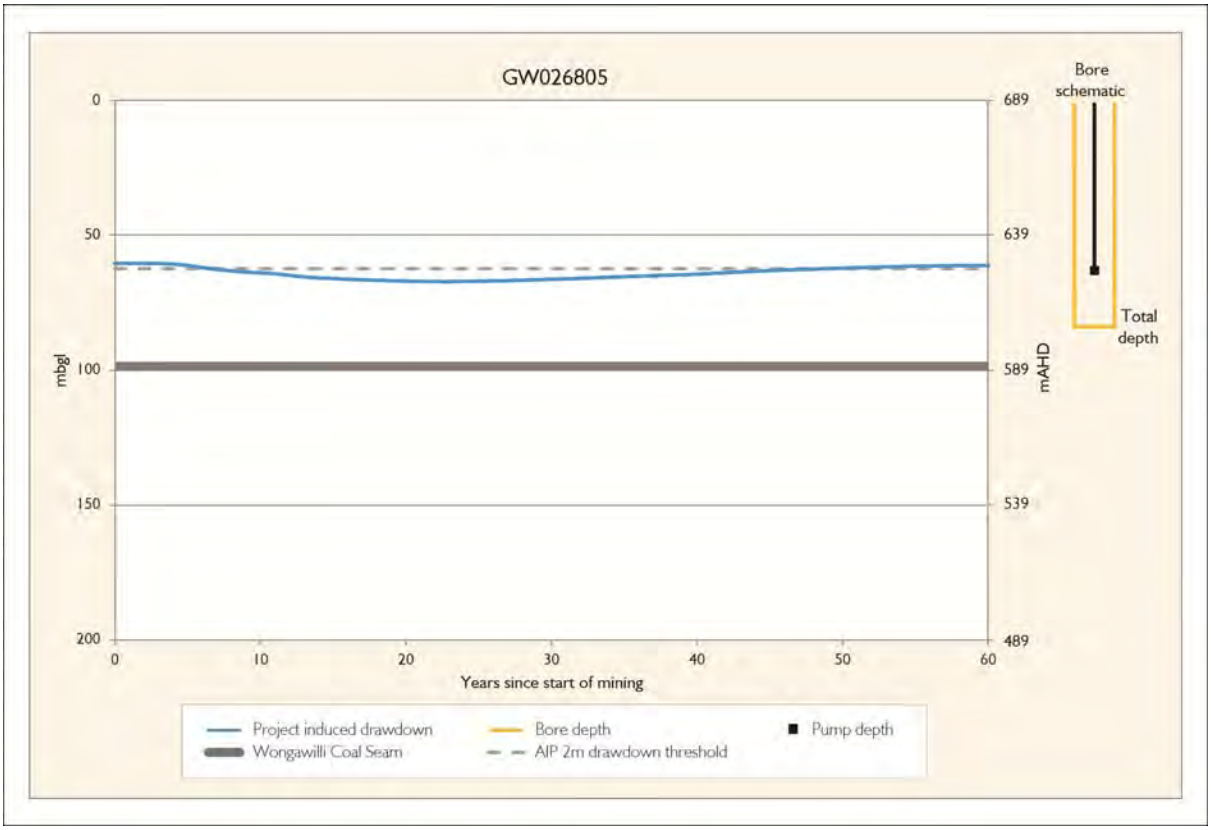
Bore ID	**GW023322**	**GW106718**	**GW026805** [2]
Coordinates	E 248882 / N 6173630	E 247480 / N 6173463	E 246680 / N 6173940
Water Access Licence (WAL) purpose	Irrigation, domestic, stock	Irrigation, domestic, stock	Irrigation, domestic, stock
Approval Number	10CA112104	10CA112104	10CA112104
Bore depth (m)	45	93	83
Bore target	WG - Upper HSST	Upper - Middle HSST	WG - Middle HSST
Maximum project only drawdown (m)	19.7	11.8	6.8
Time to project only 2 m drawdown (year)	2.5	5*	6.5*
Time to project only 2 m recovery (year)	55.5	61.5	57.5
Duration of project only 2 m drawdown (years)	53	56.5	51
Available head above pump pre mining (m)[1]	-0.7	9.5	1.5
Available head above pump at maximum drawdown (m)[1]	-20.4	-2.2	-5.3
Change in available head (%)	2817	123	448
Intersect mine working?	No	No	No
Preliminary make good option?	Replacement bore	Deepen Pump	Replacement bore



Predicted drawdown in bores



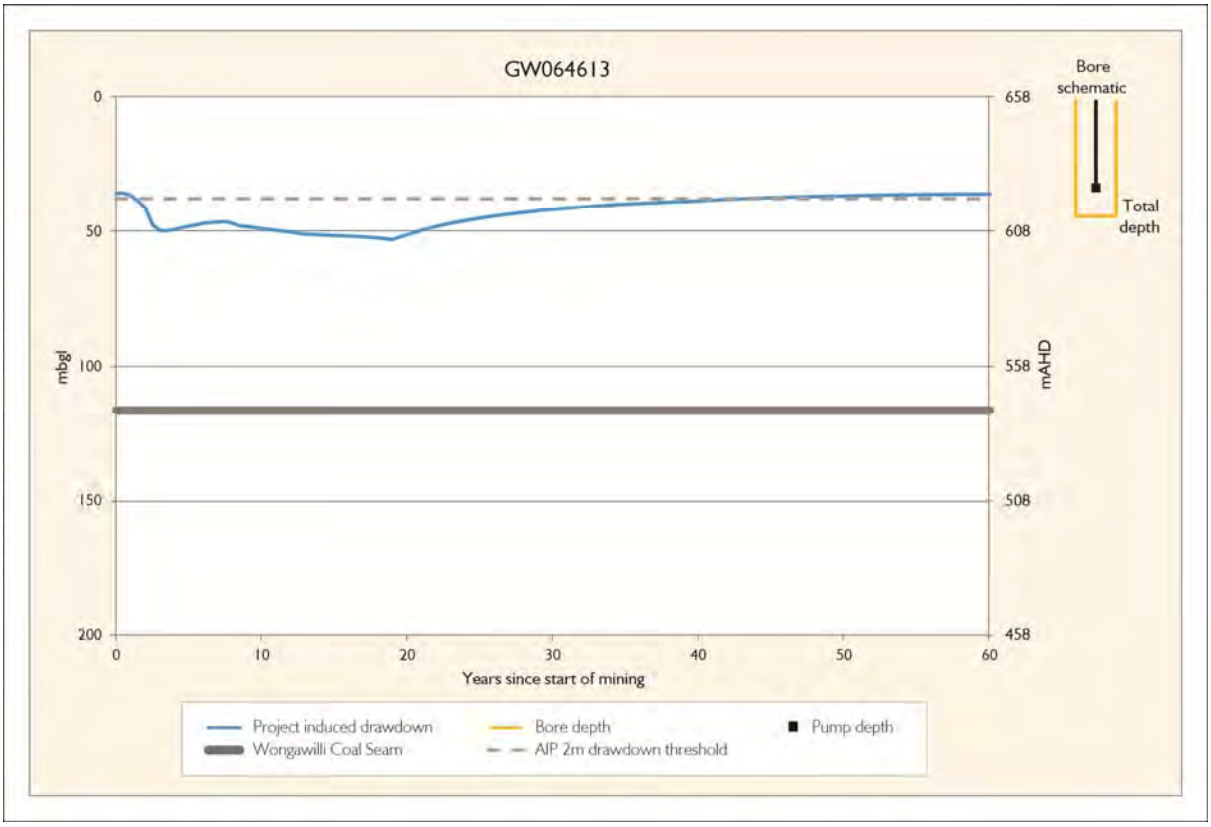



GW026805
Bore schematic
Total depth
mbgl
mAHD
0
50
100
150
200
689
639
589
539
489
0
10
20
30
40
50
60
Years since start of mining
Project induced drawdown
Wongawilli Coal Seam
Bore depth
AIP 2m drawdown threshold
Pump depth

Stage 1 make good bores

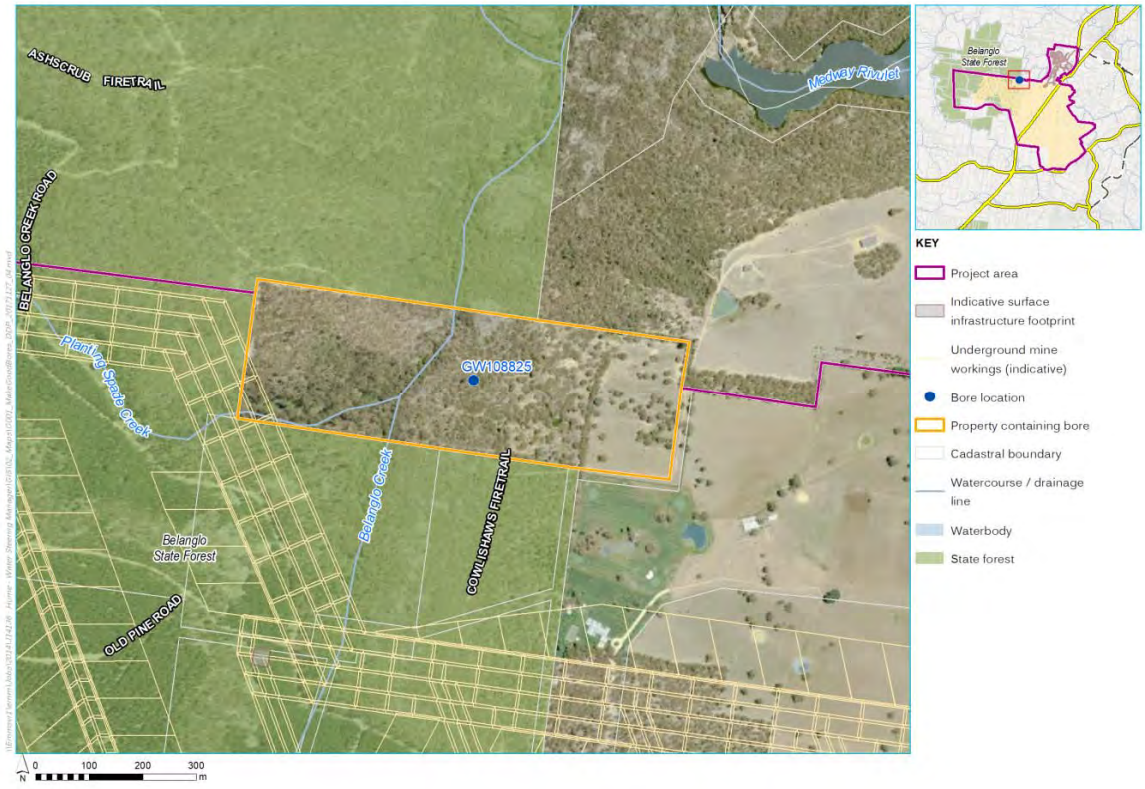
Bore ID	**GW064613**
Coordinates	E 249108 / N 6175671
Water Access Licence (WAL) purpose	Domestic
Approval Number	10WA109971
Bore depth (m)	43
Bore target	Upper – Middle HSST
Maximum project only drawdown (m)	17.2
Time to project only 2 m drawdown (year)	1
Time to project only 2 m recovery (year)	46.5
Duration of project only 2 m drawdown (years)	45.5
Available head above pump pre mining (m)[1]	-3.5
Available head above pump at maximum drawdown (m)[1]	-20.71
Intersect mine working?	No
Preliminary make good option?	Replacement Bore

Predicted drawdown in bores

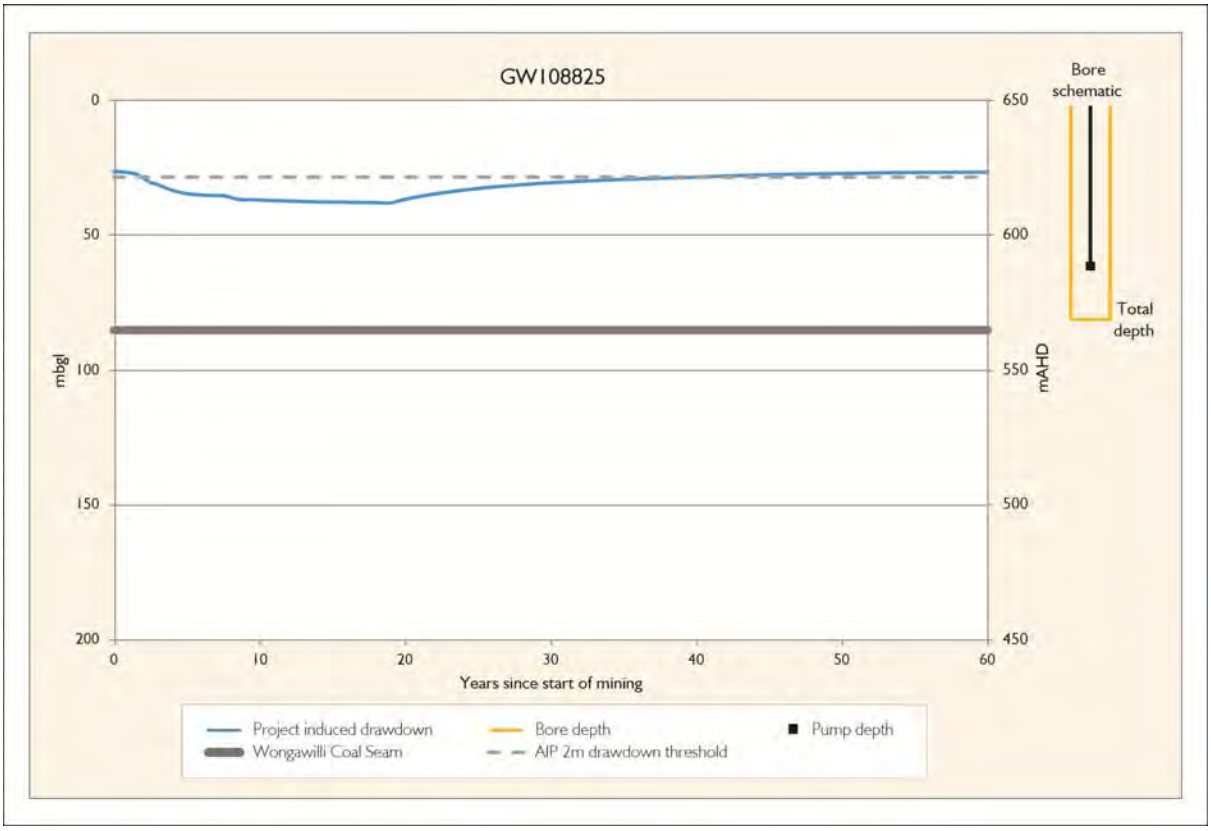


Stage 1 make good bores

Bore ID	**GW108825**
Coordinates	E 248345 / N 6176790
Water Access Licence (WAL) purpose	Stock, domestic
Approval Number	10WA111231
Bore depth (m)	79
Bore target	WG – Upper HSST
Maximum project only drawdown (m)	11.7
Time to project only 2 m drawdown (year)	1.5
Time to project only 2 m recovery (year)	40.5
Duration of project only 2 m drawdown (years)	39
Available head above pump pre mining (m)[1]	33
Available head above pump at maximum drawdown (m)[1]	21.3
Intersect mine working?	No
Preliminary make good option?	Deepen Pump

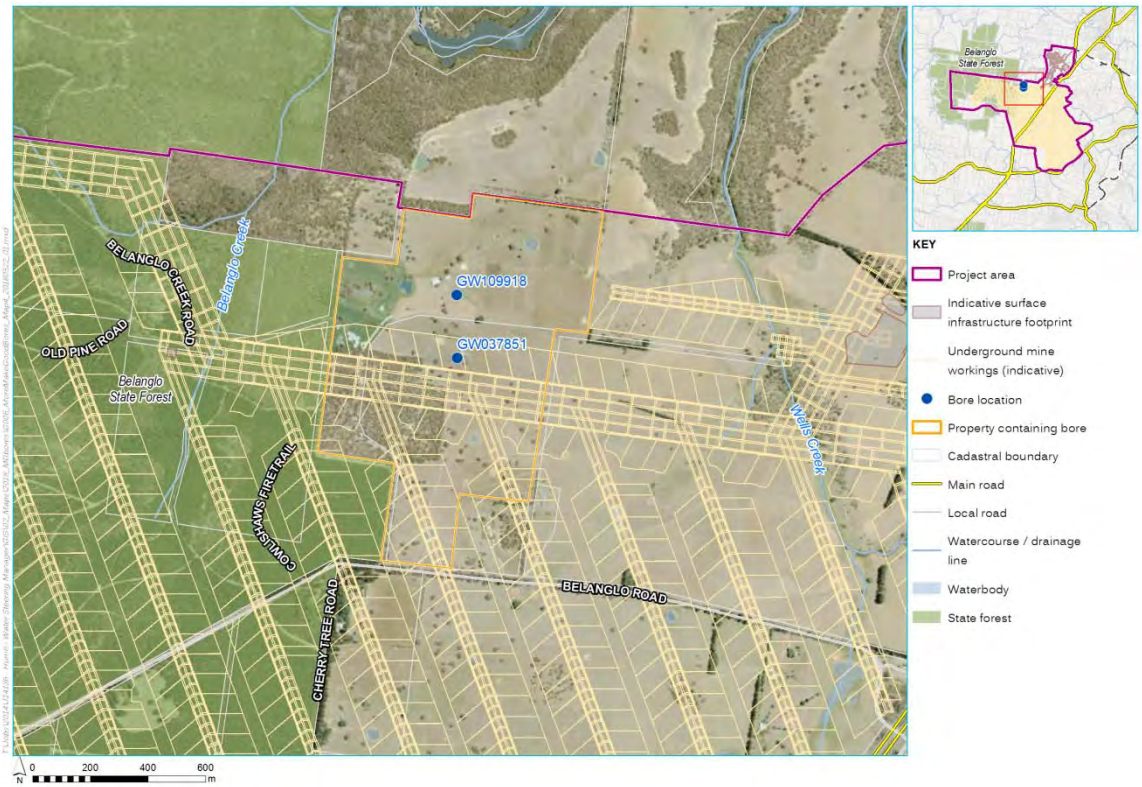


Predicted drawdown in bores

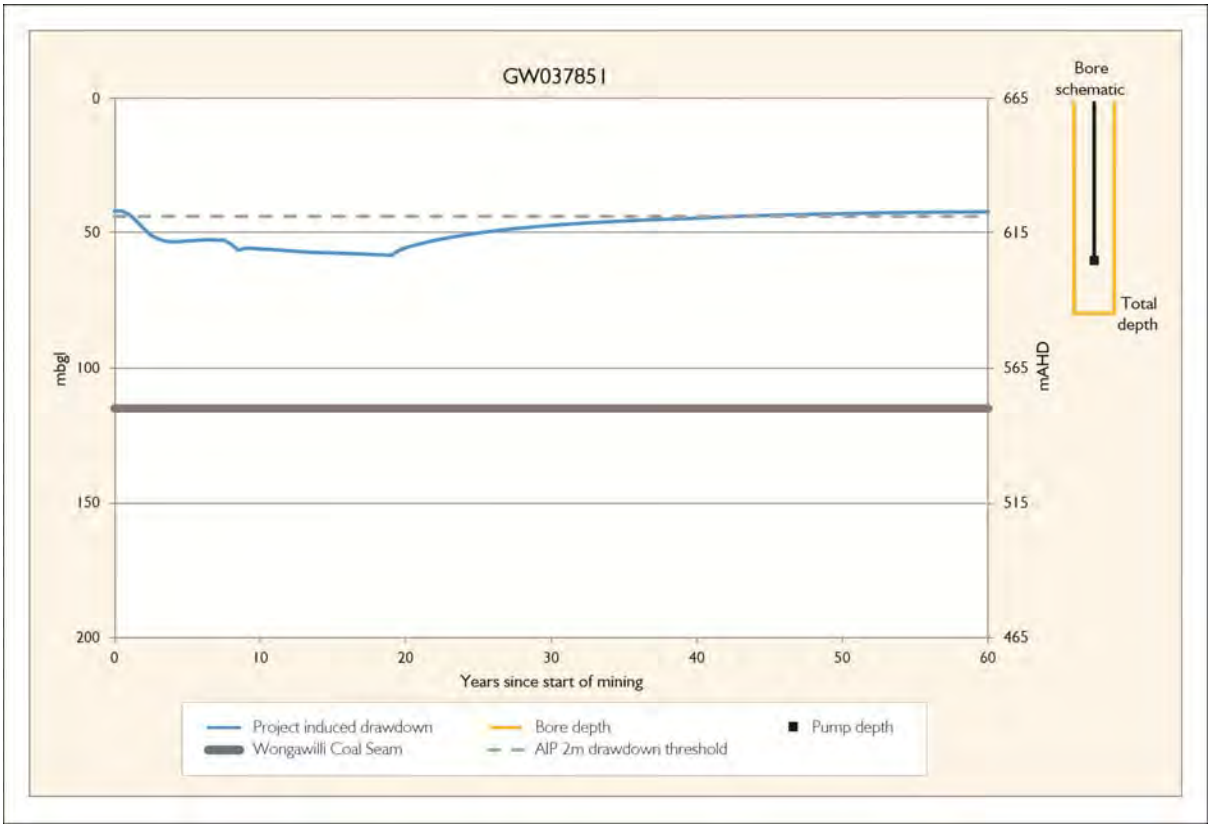


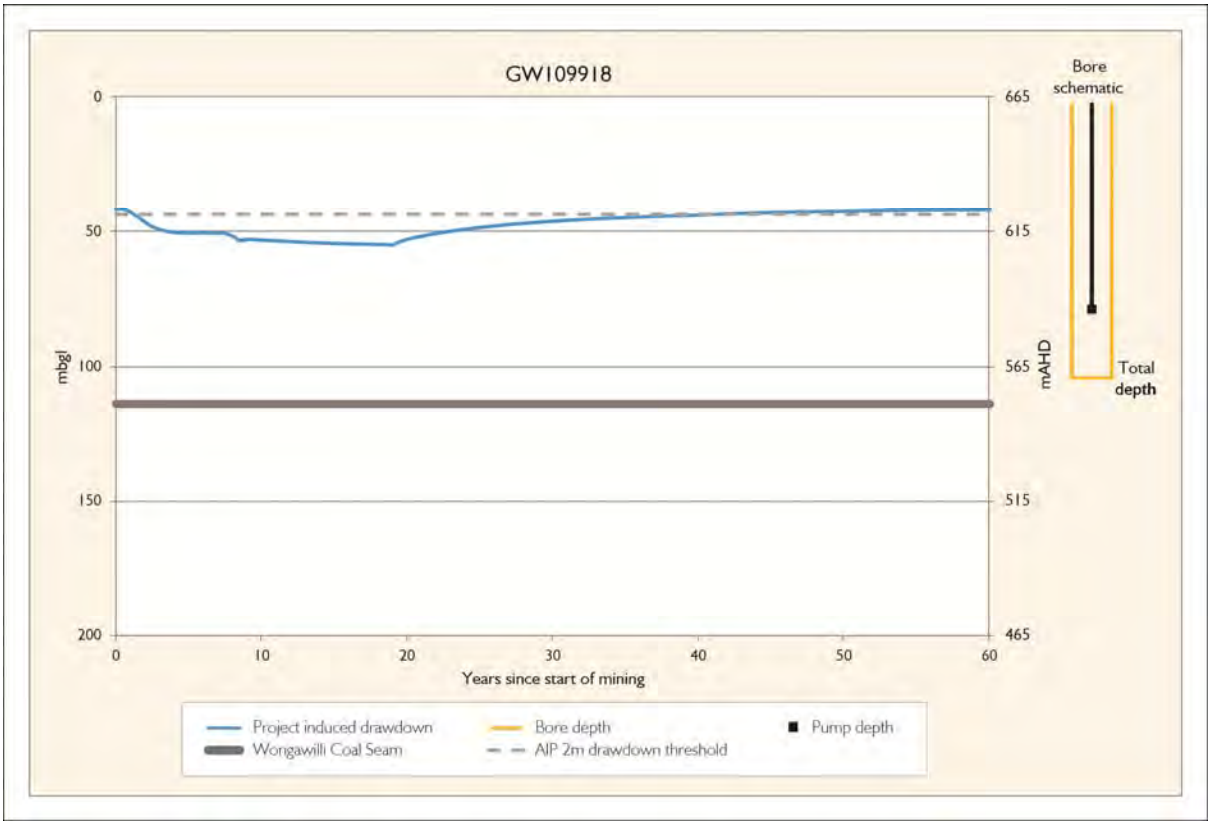
Stage 1 make good bores

Bore ID	GW037851	GW109918
Coordinates	E 248939 /N 6176253	E 248938 / N 6176472
Water Access Licence (WAL) purpose	Stock, irrigation, domestic	Stock, domestic
Approval Number	10CA111646	10WA111493
Bore depth (m)	79	102
Bore target	Upper HSST	Upper HSST
Maximum project only drawdown (m)	16.5	13.5
Time to project only 2 m drawdown (year)	1	1
Time to project only 2 m recovery (year)	45.5	42.5
Duration of project only 2 m drawdown (years)	44.5	41.5
Available head above pump pre mining (m)[1]	17.1	34.9
Available head above pump at maximum drawdown (m)[1]	0.62	21.4
Intersect mine working?	No	No
Preliminary make good option?	Deepen pump	Deepen pump



Predicted drawdown in bores

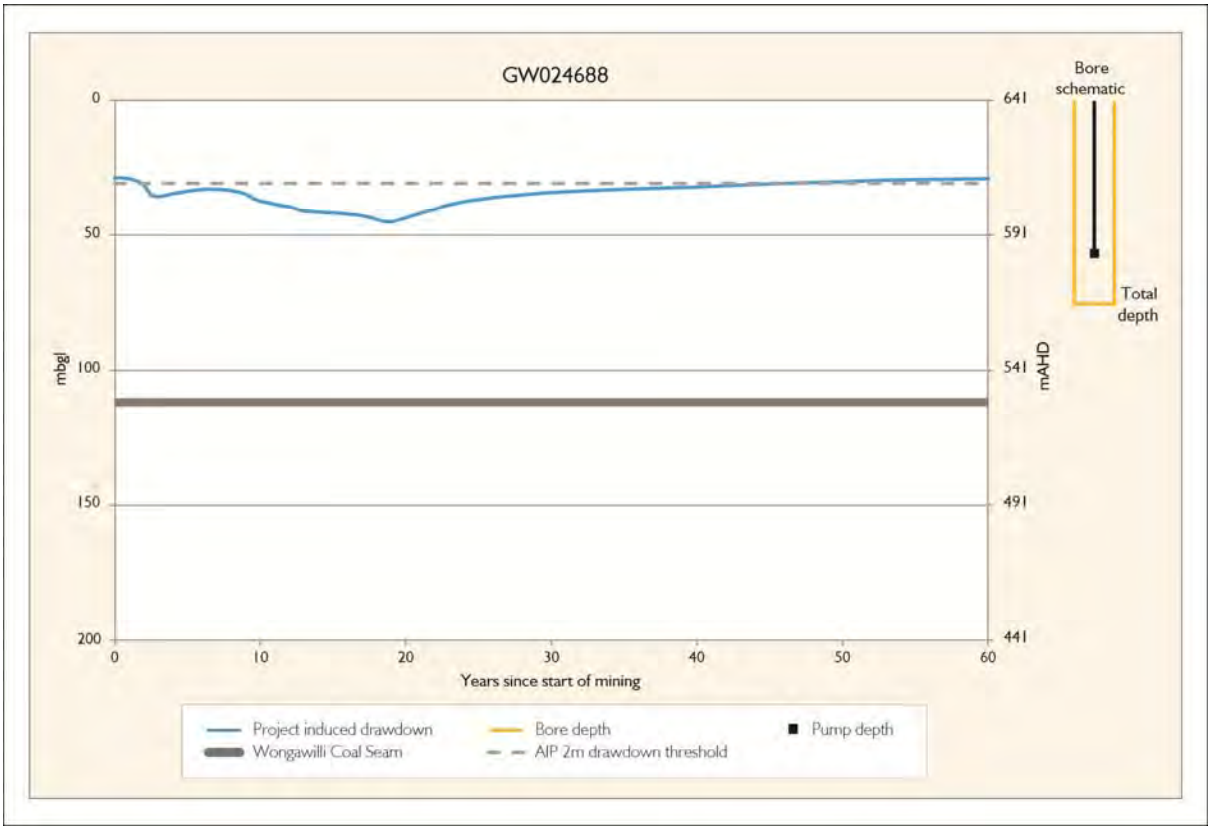




Stage 1 make good bores

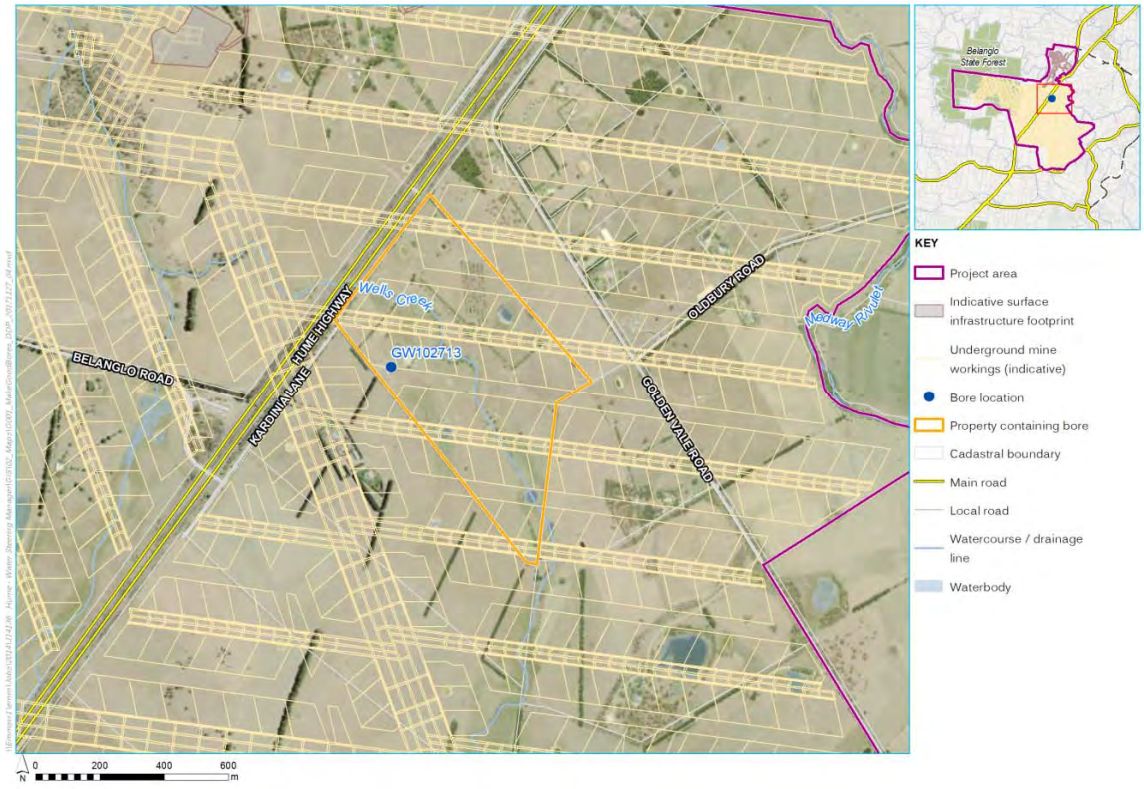
Bore ID	**GW024688**
Coordinates	E249722 / N 6174670
Water Access Licence (WAL) purpose	Irrigation, stock
Approval Number	10CA112278
Bore depth (m)	75.2
Bore target	Upper HSST
Maximum project only drawdown (m)	16.5
Time to project only 2 m drawdown (year)	1.5
Time to project only 2 m recovery (year)	52.5
Duration of project only 2 m drawdown (years)	51
Available head above pump pre mining (m)[1]	27
Available head above pump at maximum drawdown (m)[1]	10.55
Intersect mine working?	No
Preliminary make good option?	Deepen pump

Predicted drawdown in bores

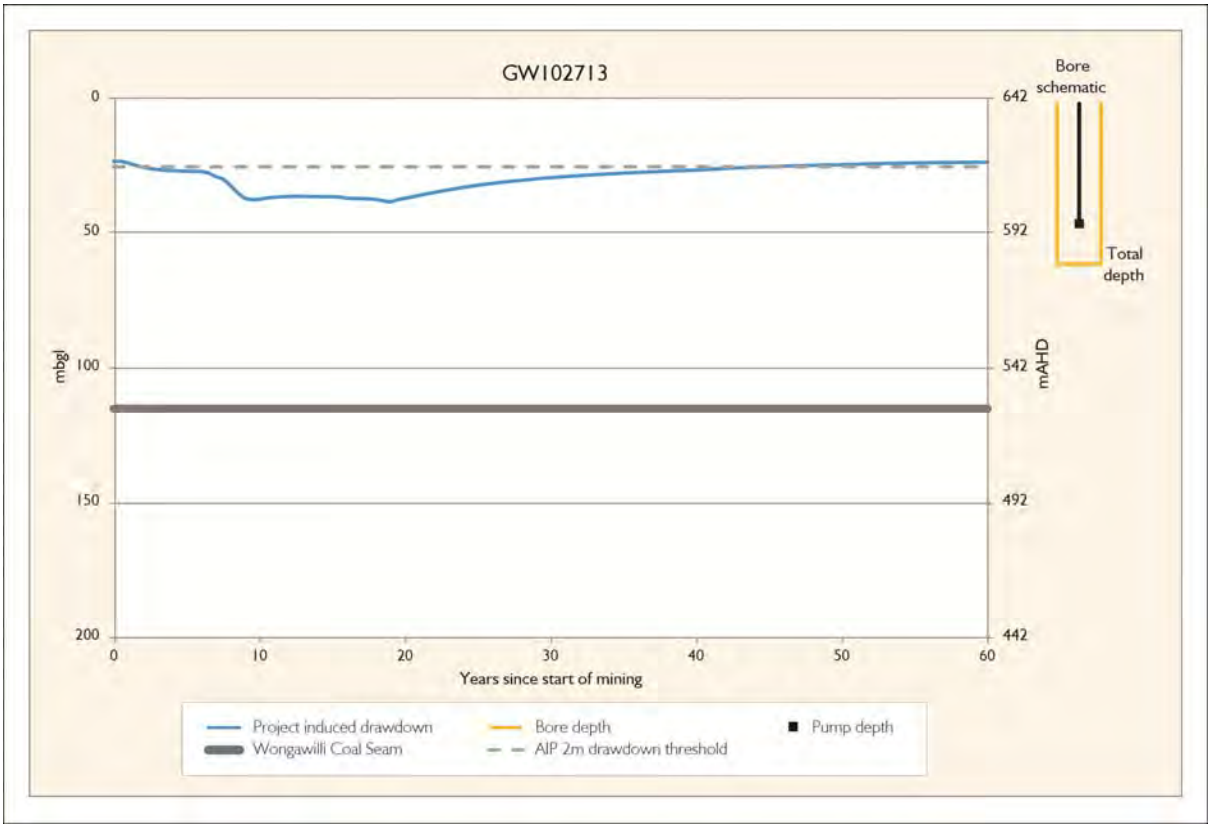


Stage 1 make good bores

Bore ID	**GW102713**
Coordinates	E 251032 / N 6175292
Water Access Licence (WAL) purpose	Domestic, stock
Approval Number	10WA110594
Bore depth (m)	60
Bore target	Upper HSST
Maximum project only drawdown (m)	15.1
Time to project only 2 m drawdown (year)	1.5
Time to project only 2 m recovery (year)	49.5
Duration of project only 2 m drawdown (years)	48
Available head above pump pre mining (m)[1]	20.9
Available head above pump at maximum drawdown (m)[1]	5.86
Intersect mine working?	No
Preliminary make good option?	Deepen Pump

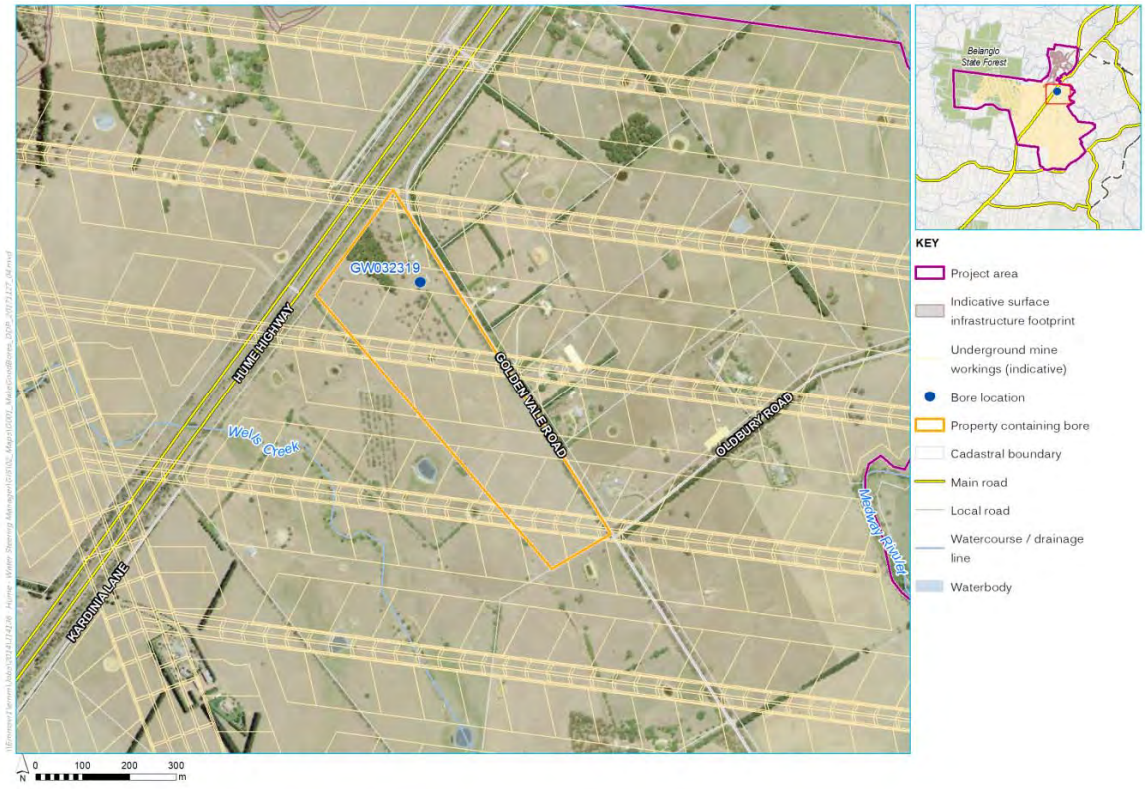


Predicted drawdown in bores

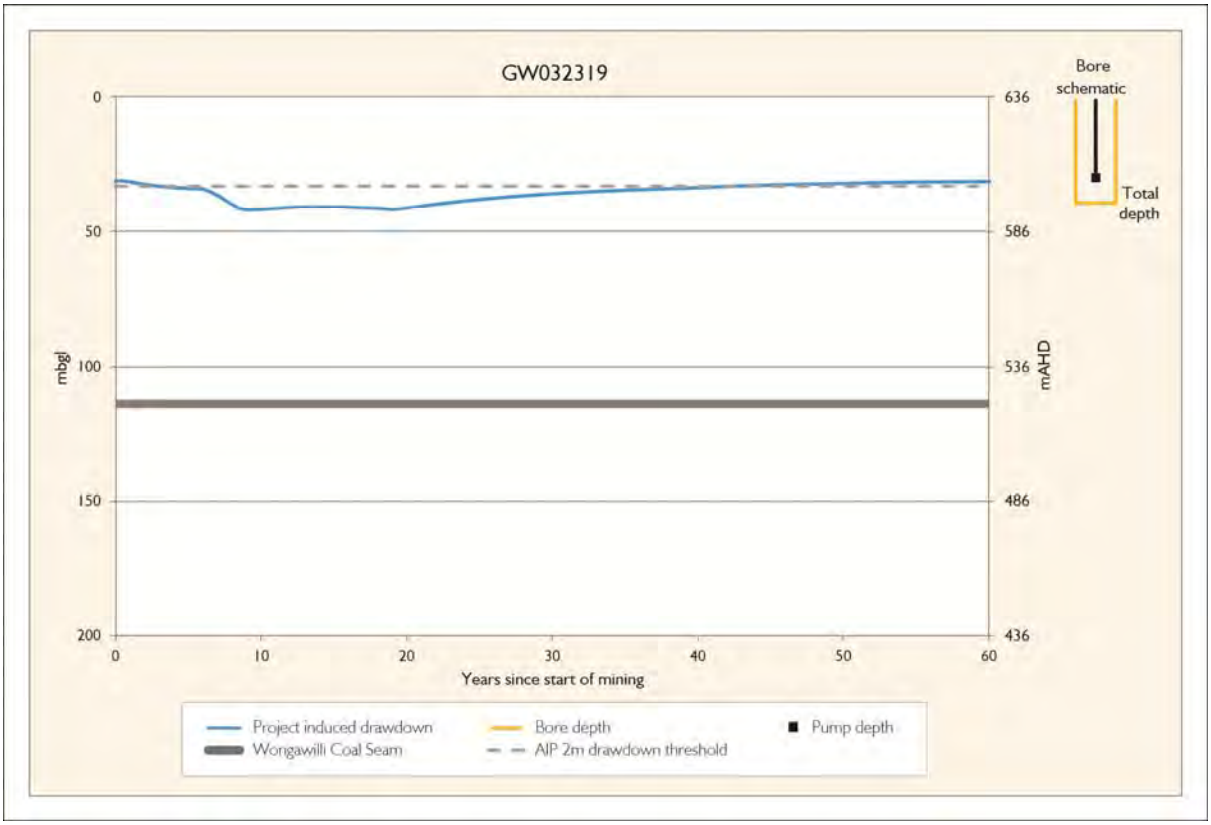


Stage 1 make good bores

Bore ID	**GW032319**
Coordinates	E 251374 / N 6175856
Water Access Licence (WAL) purpose	Domestic Stock
Approval Number	10WA109709
Bore depth (m)	38.1
Bore target	WG - Upper HSST
Maximum project only drawdown (m)	10.9
Time to project only 2 m drawdown (year)	2.5
Time to project only 2 m recovery (year)	44.5
Duration of project only 2 m drawdown (years)	42
Available head above pump pre mining (m)[1]	-2.1
Available head above pump at maximum drawdown (m)[1]	-13.05
Intersect mine working?	No
Preliminary make good option?	Replacement Bore

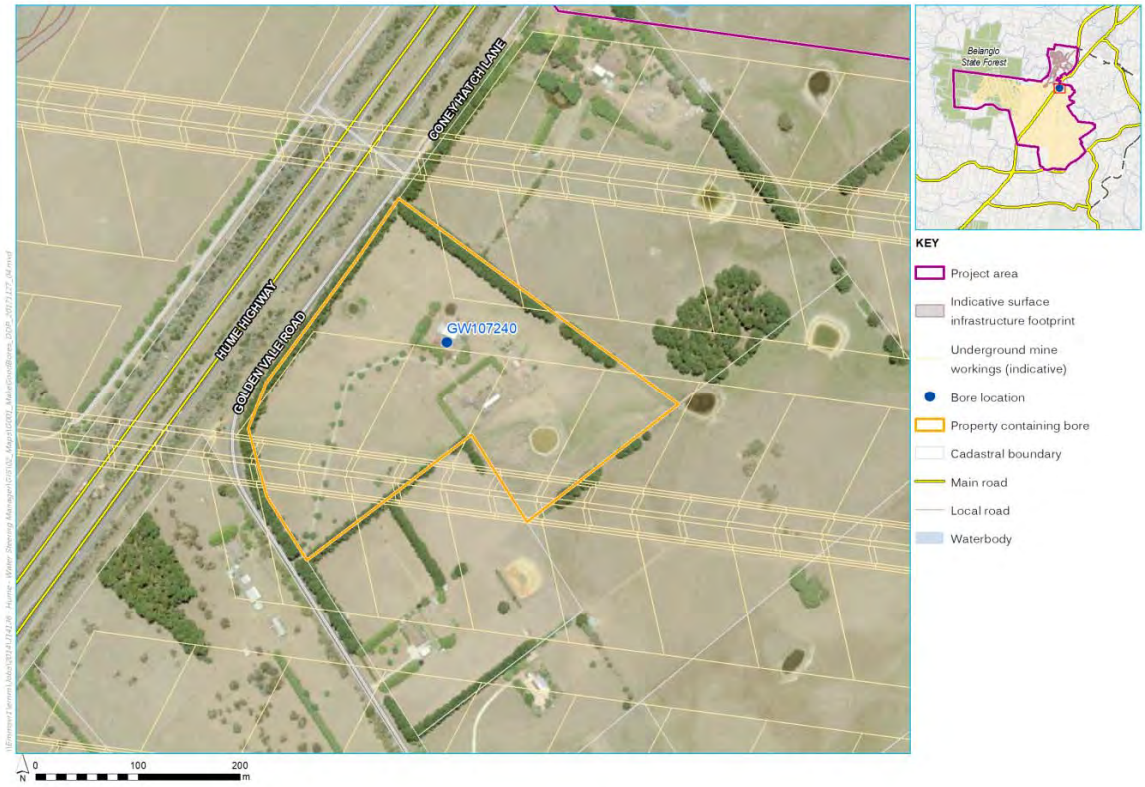


Predicted drawdown in bores

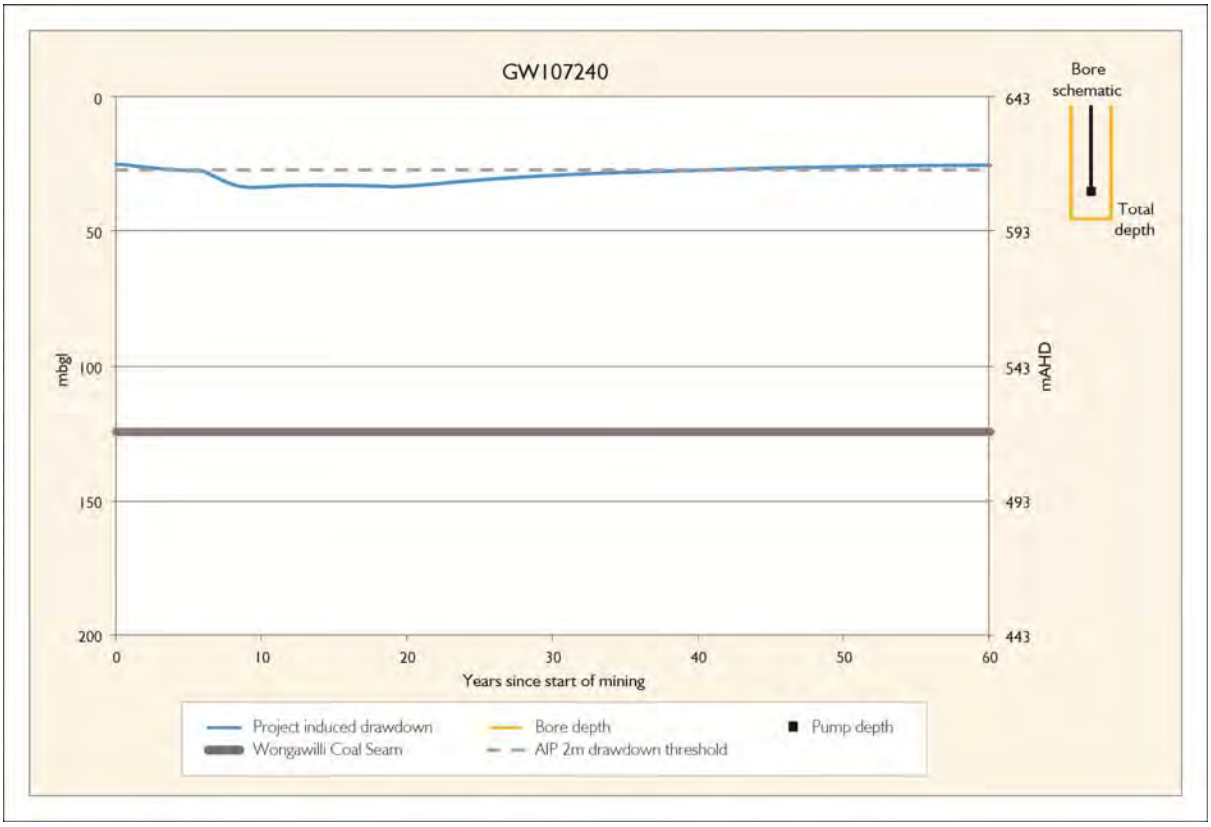


Stage 1 make good bores

Bore ID	**GW107240**
Coordinates	E 251555 / N 6176142
Water Access Licence (WAL) purpose	Domestic, stock
Approval Number	10WA111236
Bore depth (m)	42
Bore target	Upper - Middle HSST
Maximum project only drawdown (m)	8.5
Time to project only 2 m drawdown (year)	4
Time to project only 2 m recovery (year)	41.5
Duration of project only 2 m drawdown (years)	37.5
Available head above pump pre mining (m)[1]	7.4
Available head above pump at maximum drawdown (m)[1]	-1.1
Intersect mine working?	No
Preliminary make good option?	Replacement Bore



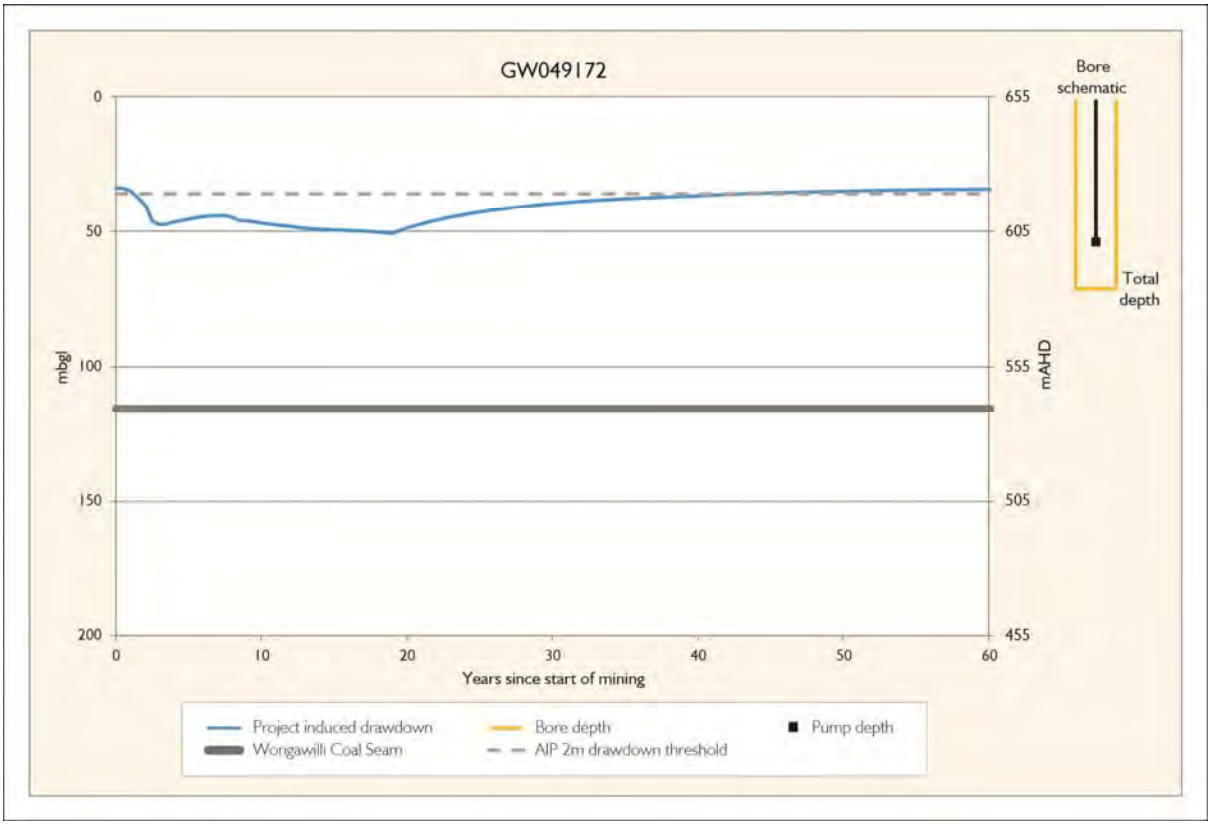
Predicted drawdown in bores



Stage 1 make good bores

Bore ID	**GW049172**
Coordinates	E 249209 / N 6175705
Water Access Licence (WAL) purpose	Domestic, stock
Approval Number	10WA111236
Bore depth (m)	70.1
Bore target	Upper HSST
Maximum project only drawdown (m)	16.9
Time to project only 2 m drawdown (year)	1
Time to project only 2 m recovery (year)	46.5
Duration of project only 2 m drawdown (years)	45.5
Available head above pump pre mining (m)[1]	18.8
Available head above pump at maximum drawdown (m)[1]	1.9
Intersect mine working?	No
Preliminary make good option?	Deepen Pump

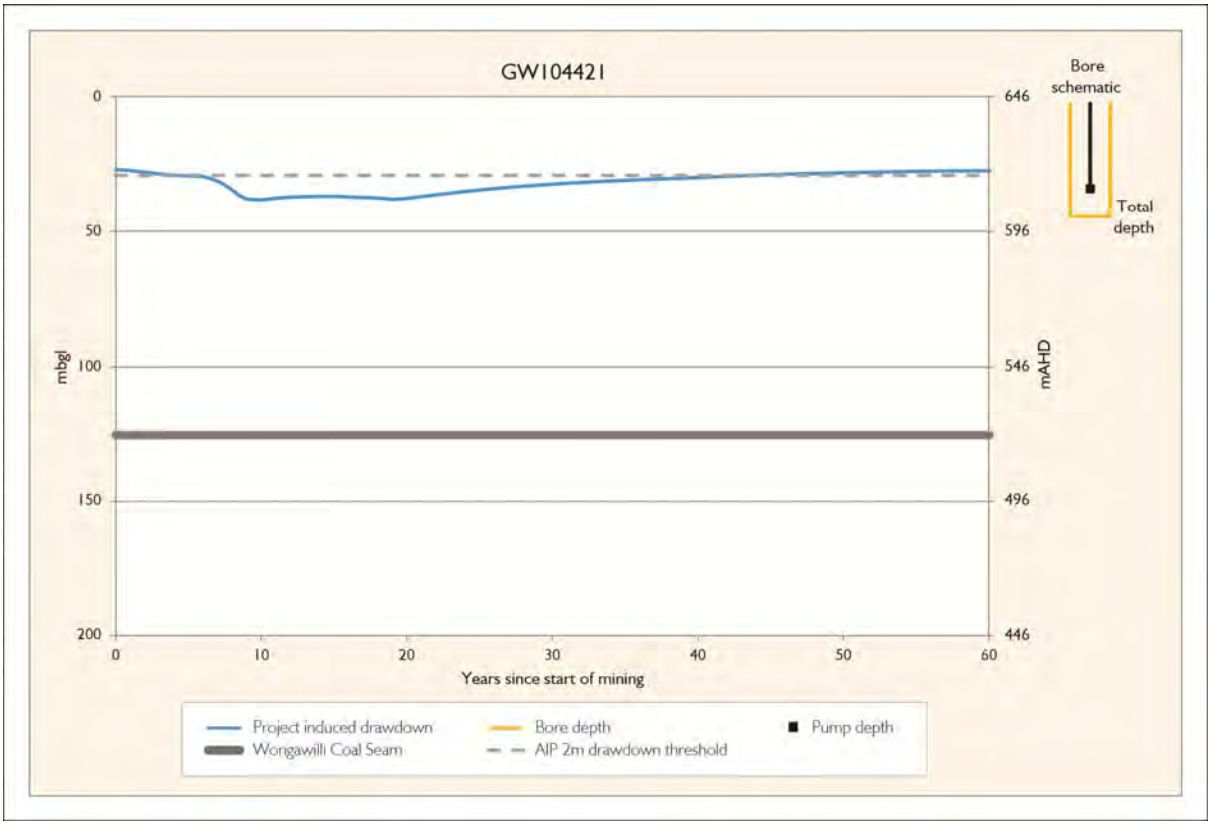
Predicted drawdown in bores



Stage 1 make good bores

Bore ID	**GW104421**
Coordinates	E 251708 / N 6175634
Water Access Licence (WAL) purpose	Domestic, stock
Approval Number	10WA110780
Bore depth (m)	42
Bore target	WG - Upper HSST
Maximum project only drawdown (m)	11.2
Time to project only 2 m drawdown (year)	4
Time to project only 2 m recovery (year)	47.5
Duration of project only 2 m drawdown (years)	43.5
Available head above pump pre mining (m)[1]	4.5
Available head above pump at maximum drawdown (m)[1]	-6.7
Intersect mine working?	No
Preliminary make good option?	Replacement bore

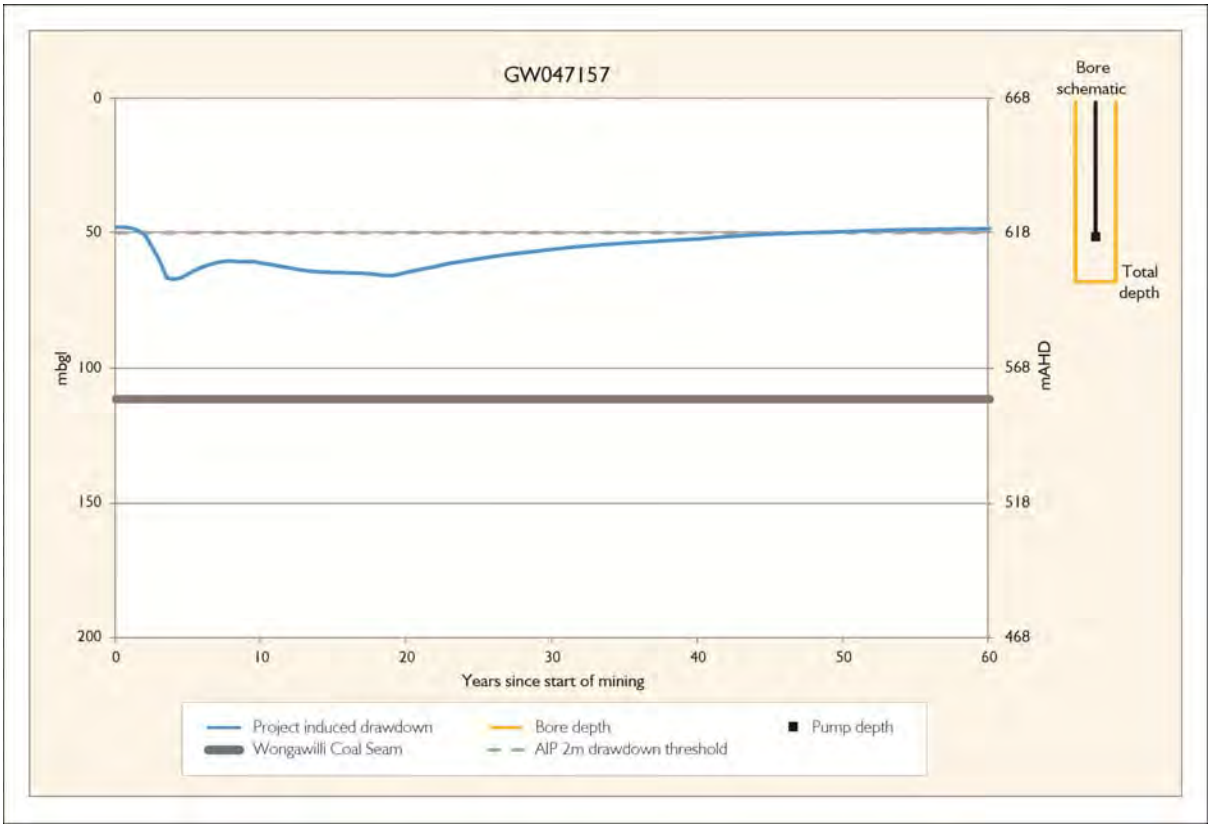
Predicted drawdown in bores



Stage 1 make good bores

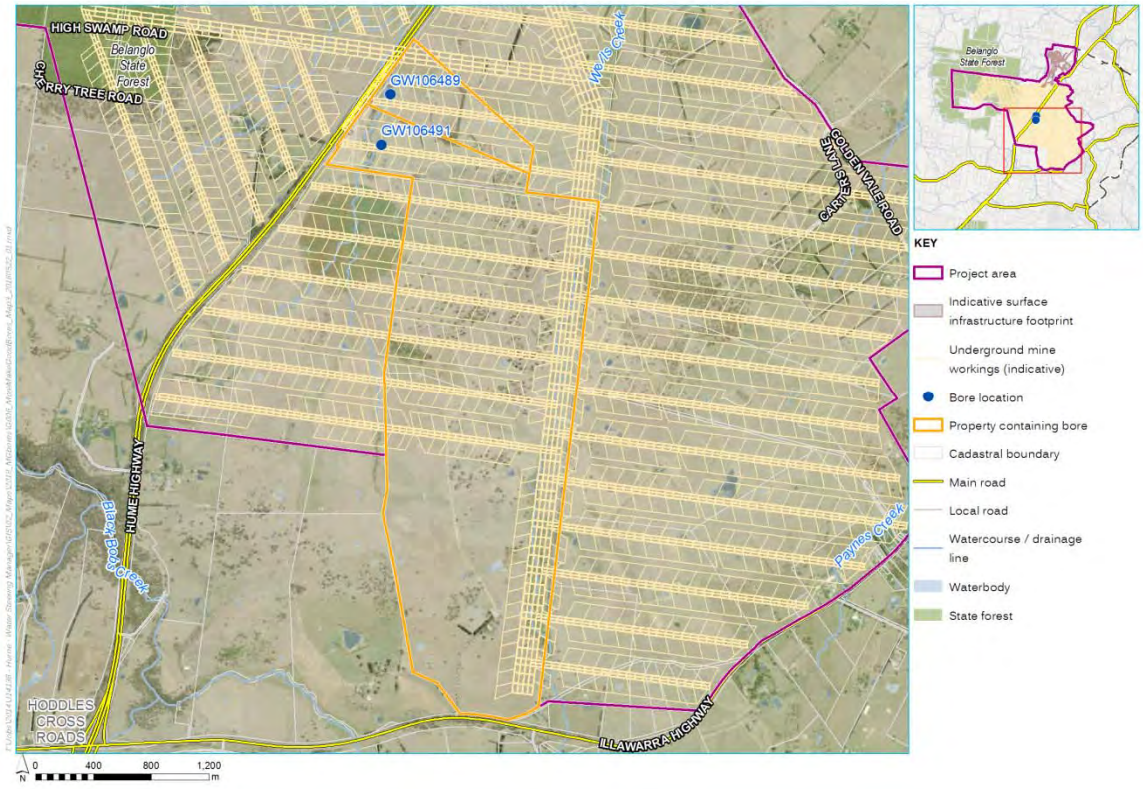
Bore ID	**GW047157**
Coordinates	E 248506 / N 6175285
Water Access Licence (WAL) purpose	Stock, irrigation, domestic
Approval Number	10CA111662
Bore depth (m)	67.1
Bore target	Upper – Middle HSST
Maximum project only drawdown (m)	19.2
Time to project only 2 m drawdown (year)	1.5
Time to project only 2 m recovery (year)	55.5
Duration of project only 2 m drawdown (years)	54
Available head above pump pre mining (m)[1]	2.2
Available head above pump at maximum drawdown (m)[1]	-17
Intersect mine working?	No
Preliminary make good option?	Replacement Bore

Predicted drawdown in bores

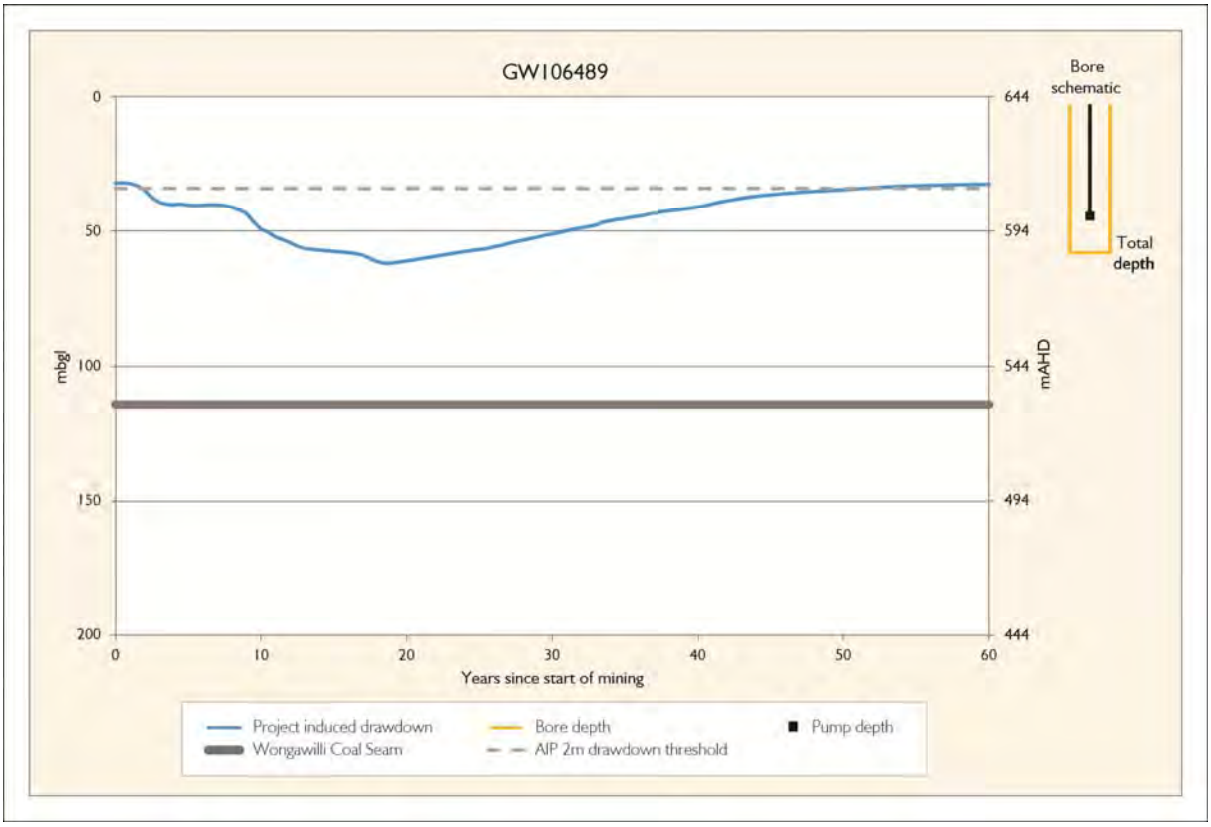


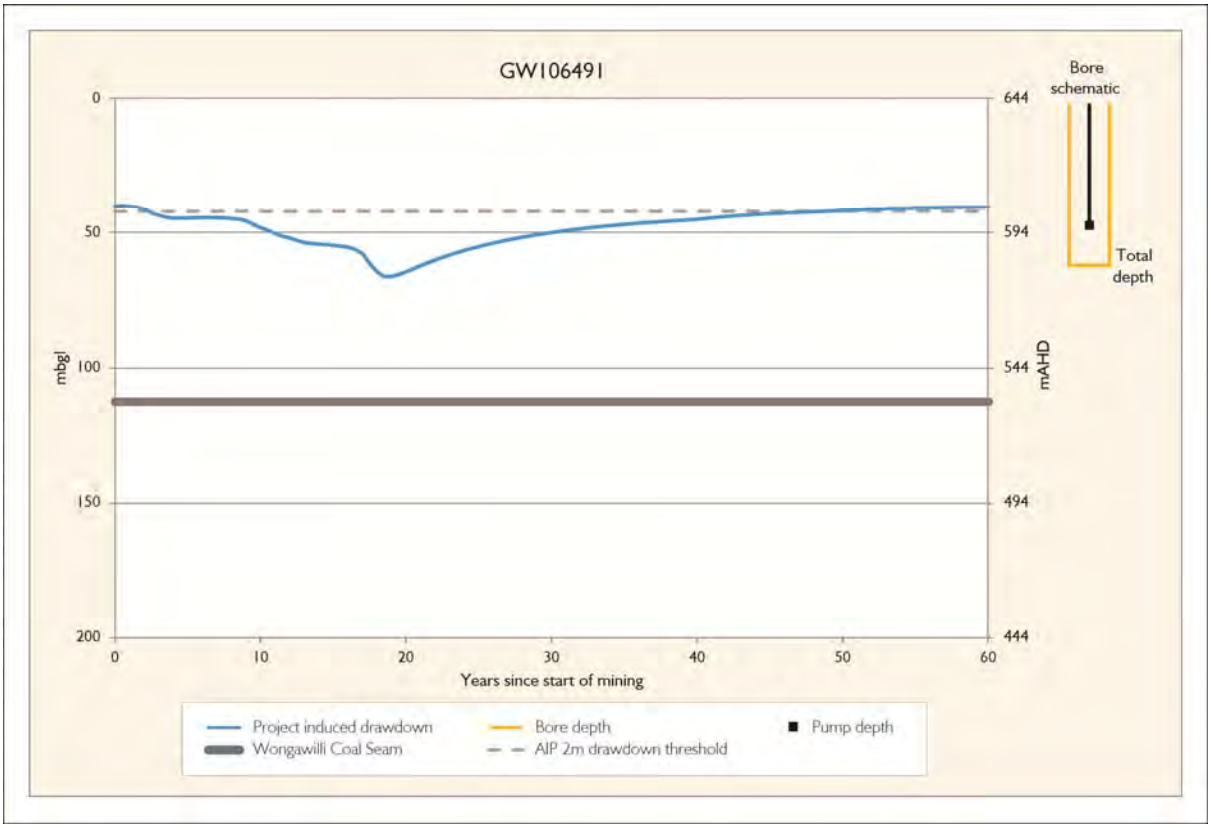
Stage 1 make good bores

Bore ID	**GW106489**	**GW106491**
Coordinates	E 249862/ N 6173914	E 249802 / N 6173568
Water Access Licence (WAL) purpose	Irrigation	Irrigation
Approval Number	10CA112146	10CA112150
Bore depth (m)	55	60
Bore target	Upper - Middle HSST	Upper - Middle HSST
Maximum project only drawdown (m)	29.9	26.2
Time to project only 2 m drawdown (year)	1.5	2.0
Time to project only 2 m recovery (year)	65.5	57.5
Duration of project only 2 m drawdown (years)	64	55.5
Available head above pump pre mining (m)[1]	9.3	4.8
Available head above pump at maximum drawdown (m)[1]	-20.7	-21.4
Intersect mine working?	No	No
Preliminary make good option?	Replacement bore	Replacement bore



Predicted drawdown in bores





Notes:

1. Estimated static water level based on groundwater. Will be confirmed during the field assessment to assign an appropriate make good provision.
2. Impacts predicted in Stage 2; however, as bore is located on same property as a Stage 1 bore, it will be assessed prior to the start of mining.
3. Formations:
    - ICM: Illawarra Coal Measures
    - HSST: Hawkesbury Sandstone
    - RB: Roberson Basalt
    - AS: Ashfield Shale

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