

2015-16 (Stage 1) – South Australia

PROJECT AGREEMENT
FOR THE GREAT ARTESIAN BASIN SUSTAINABILITY
INITIATIVE (PHASE 4)

PART 1: PRELIMINARIES

1. This bilateral schedule to the Project Agreement on the Great Artesian Basin Sustainability Initiative (Phase 4) and should be read in conjunction with that Agreement. The Schedule has been developed in accordance with clause 13(a) of the Agreement to set out a list of projects and project milestones to be completed by 30 June 2016.

PART 2: FORMALITIES

2. The Parties to this Schedule are the Commonwealth of Australia, represented by the Parliamentary Secretary to the Minister for the Environment, and the State of South Australia, represented by the Minister for Sustainability, Environment and Conservation.
3. This Schedule will commence as soon as it is agreed between the Commonwealth and the South Australia, including agreement of the Project List set out in Table 3 of this Schedule, and expire on 30 June 2016 or on completion of the project whichever is earlier, including final performance reporting and processing of final payments against milestones.

PART 3: FINANCIAL ARRANGEMENTS

4. Having completed an assessment of the proposed projects in accordance with the Assessment Guidelines and Project Eligibility Criteria contained in Schedule A of the Agreement, the Commonwealth will provide a maximum financial contribution of \$2,344,918 to the State for projects listed at Table 3. All payments are exclusive of GST.
5. The agreed financial contribution to be provided by the Commonwealth, South Australia and individual landholders are outlined in Table 1.

Table 1. Estimated financial contributions

(\$)	2015-16	Total
Estimated total budget	4,689,836	4,689,836
State contribution	2,344,918	2,344,918
Third party contributions		
Commonwealth contribution	2,344,918	2,344,918

PART 4: PROJECT MILESTONES, REPORTING AND PAYMENTS

6. Table 2 summarises the milestones for the project, their relationship to the outputs, expected completion dates, relevant reporting dates and expected payments to be made. The Commonwealth will make payments subject to the State demonstrating that the relevant milestone has been met.

Table 2: Milestones, reporting and payment summary

Outputs	Milestones	Due date	Payment
2015-16	Completion of projects in Table 3 of this Schedule, demonstrated by the annual completion report	30-Apr-16	2,334,918

7. If a milestone is met in advance of the due date, where the State demonstrates that the milestone has been met, the Commonwealth may make the associated payment earlier than scheduled provided it falls within the same financial year as the original milestones date.
8. The State will provide annual completion reports in accordance with Table 2 during the operation of the Agreement. Each performance report is to contain a description of actual performance in the period to date against the project milestones.
9. In accordance with Clause 19 of the Agreement, the annual completion report must be provided in the form of any relevant template(s) provided by the Commonwealth.

PART 5: PROCESS USED TO PRIORITISE PROJECTS


10. Projects will be assessed and agreed in priority order in accordance with clauses A3 (d) and (e) of the Agreement.

PART 6: SIGN OFF

11. The Parties have confirmed their commitment to this agreement as follows:

Signature 
[By State Minister]

Date 28/1/16

Signature 
[By Commonwealth Minister]

Date 29-2-16

Table 3

Proposed project list

Projects were rated against the criteria set out under Clauses A10, A7, and A5(c), and prioritised for implementation. Locations of proposed projects are identified at Map 1 and 2; assessment criteria are provided in Table 4.

Priority rating	Project ID	Project Name	Project location (lat, long) and shown on attached map	Aquifer	Name of and proximity to (km) high value Basin dependent spring/s	Type of activity A10(a) to (f)	Activity description	Meter or bore pressure device (Y/N)	Estimated piping (km)	Estimated drain shut down (km)	Discharge prior (L/s)	Discharge after (L/s)	Proposed water saving (ML/year)			Completion date	Total estimated cost (\$)	Proposed GABS1 funding contribution (\$)		\$ of Cwith funding per ML/year saved	Risk assessment (low, medium, high)	Project delivery	
													Relating to control valve - as a result of changed management practices of the infrastructure	Relating to piping - resulting from reduced system losses or fixing bore drain infrastructure	Water savings reallocated to consumptive purposes			Water savings not reallocated to consumptive purposes	Water Resource Plan consumption allocation prior to water savings				Water Resource Plan consumption allocation after water savings
extreme	6641.6	Mulka Bore 6	Lat: 28.3563 Long: 138.6556	JK-a	n/a	A10(b)	Redrill and decommission uncontrolled rehabilitated ERP well	Y	0 (already piped)	0 (already shut down)	23	9	0	469	150	150	28/4/2016	\$1,980,835	\$990,418	\$990,418	\$2111	low	
extreme	6640-14	Georgia Bore	Lat: 28.854683 Long: 138.083302	JK1	n/a	A10(a, d)	Redrill and decommission uncontrolled well	Y	0 (already piped)	0 (already shut down)	70	9	0	1923	222	222	28/4/2016	\$2,529,000	\$1,264,500	\$1,264,500	\$675	low	
high	GABS14-SA.1	Bore assurance scheme	n/a	n/a	n/a	A10(c, e)	Preliminary work on bore assurance scheme	n/a (not available)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	28/4/2016	\$76,000	\$38,000	\$38,000	Unknown volume	low	
high	GABS14-SA.3	Monitoring	Artesian and non-artesian networks in SA	n/a	n/a	A10(e)	Processes for sustainable monitoring program after cessation of GABS1.4	Y	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	28/4/2016	\$104,000	\$52,000	\$52,000	n/a	low	

Table 4

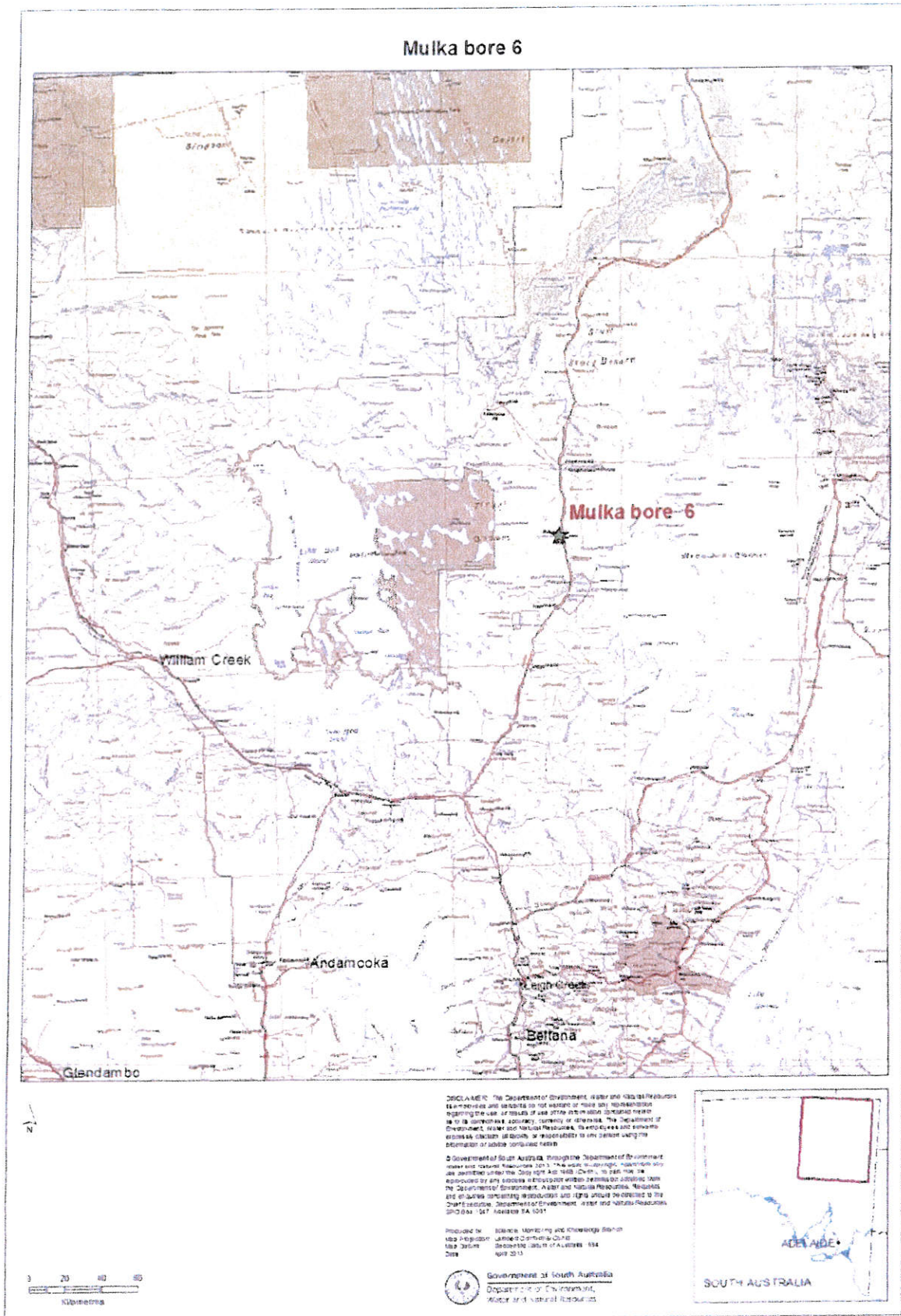
Assessment of projects

The assessment process for wells eligible for GABSI co-contribution in South Australia follows the principles outlined in the GABSI Phase 4 NPA section A10.

Well name	Eligibility criteria	Priority	Synopsis	Methodology	Risk analysis (based on ranking 1-5 low being 1)	Before mitigation	After mitigation
Mulka Bore 6	A10(b)	<p>Mulka Bore was drilled in 1907 as a travelling stock route (TSR) bore and is the only water supply well on the western side of Mulka station. The well was previously rehabilitated by the State Government in 1956 and 1986.</p> <p>DEWNR staff undertaking review of all GAB wells in 2014 noted that Mulka Bore had suffered an underground failure, evident by water welling up outside the casing string. The headworks have since snapped off and water is flowing uncontrolled at an estimated rate of 5-6L/s (150-180 ML/annum). Ponded water is attracting feral animals and high water temperature and pressure (86°C, 387kPa) present a significant WHS risk.</p> <p>Using the risk assessment criteria outlined in (Chapman 2015; Table 3) the failure was rated catastrophic and presents extreme risk.</p> <p>The original flow when Mulka bore was constructed in 1906 was 42l/s and prior to rehabilitation in 1984 was recorded at 50l/s. After rehabilitation of the bore in 1984 the flow was 23l/s. The last recorded flow when the well was fully controlled and piped was 9l/s, presently uncontrolled it would be expected that the flow to waste would be 23l/s. Given that the piping system will be replaced like for like (9l/s) the water savings would be approximately 14l/s. or 1.21 mgl/day.</p> <p>The type of failure meets GABSI 4 eligibility criterion A10(b) and the well was given priority rating 1 in Table 3 above.</p> <p>Risk assessment found at: https://www.waterconnect.sa.gov.au/Content/Publications/DEWNR/GAB-2014-Well-Condition-Review-summary.pdf</p>	<p>The well was last rehabilitated using small diameter FRP. While it is difficult to be absolutely certain of the cause of the failure, initial investigations indicate that the FRP relined in 1986 has failed allowing water to well up outside of the casing. Given the well age, construction and number of rehabilitations, the internal diameter of the well is insufficient to attempt rehabilitation and a redrill is the only viable alternative.</p> <p>The State notified the holder of the Mulka lease, Doce Pty Ltd, of the issue and requested that it be rectified.</p>	<p>The old well will be decommissioned and replaced by a new well.</p> <p>The drilling contractor understands the risk with the decommissioning process and will use the same methodology recommended to decommission Georgia Well.</p> <p>Drilling the new well is a straight forward process with little risk – a meter will be installed to monitor consumption.</p> <p>The drilling contractor provided Doce cost estimates which were forwarded to DEWNR.</p> <p>Doce Pty Ltd will manage the project and wear the financial risk</p>	<p>Methodology</p> <p>Logistics</p> <p>Cost</p> <p>Infrastructure importance</p> <p>Environmental harm</p> <p>Priority</p>	<p>4</p> <p>3</p> <p>5</p> <p>4</p> <p>5</p> <p>extreme</p>	<p>n/a</p> <p>n/a</p> <p>n/a</p> <p>4</p> <p>1</p> <p>low</p>
Georgia Bore	A10(b, d)	<p>Georgia Bore is part of the National GAB monitoring network and is located along the south eastern side of Lake Eyre. The well is instrumented and provides continuous data for monitoring potentiometric surface contours and for basin management.</p> <p>Georgia Bore is a moderately deep well in the order of 1000m. The bore suffered a catastrophic failure in December 2014, resulting in uncontrolled flow estimated at 70L/s (2207 ML/annum). Resultant high flows rapidly collapsed the ground around the headworks causing water to pool around the headworks and create a wetland along the former bore drain. High water temperature and pressure (76°C, 850kPa) present a significant WHS risk.</p> <p>No water saving has been previously claimed for this well in GABSI or other federally funded programs.</p> <p>The type of failure meets GABSI 4 eligibility criteria A10(a,d) and this well was given priority rating 1 in Table 3 above.</p>	<p>The well is at the end of its asset life being some 26 years old and the SA government asset life calculation for steel is 25 years.</p> <p>Geophysical logging established that the shoe of the casing had failed and that the well could not be rehabilitated.</p> <p>The State notified the holder of the Etadunna lease, BHP Billiton Pty Ltd, of the issue and requested that it be rectified.</p>	<p>The old well will be decommissioned, and replaced by a new well.</p> <p>Significant work including geophysical logging activities and logistical planning have been undertaken ensure that the decommissioning will successfully seal the well.</p> <p>The new well is a straight forward process with little risk –designed to reduce overall maximum flow from 70 L/s to 40 L/s as a risk mitigation strategy against future failure, and with casing material suited to antecedent conditions with nominal 50 year asset life.</p> <p>Funds provided by BHPB and monitoring instrumentation will be moved to the new Georgia Bore.</p>	<p>Methodology</p> <p>Logistics</p> <p>Cost</p> <p>Infrastructure importance</p> <p>Environmental harm (not being undertaken)</p> <p>Priority</p>	<p>4</p> <p>3</p> <p>5</p> <p>4</p> <p>5</p> <p>extreme</p>	<p>n/a</p> <p>n/a</p> <p>n/a</p> <p>4</p> <p>1</p> <p>low</p>

Well name	Eligibility criteria	Priority	Synopsis	Methodology	Risk analysis (based on ranking 1-5 low being 1)	Before mitigation	Alter mitigation
All	A10(c,e)	<p>The Well Condition Review also undertook a desktop study of casing asset age risk profile. The review identified an increase in median asset age and consequential associated risk, this was supported by field observations taken at the time of the well review.</p> <p>It has been shown over the course of GABS1 that the economic viability of pastoral community across the GAB when confronted by the replacement costs associated with water infrastructure is severely compromised. The mid-term review of GABS13 indicated that a bore assurance scheme would be an option to address this type of issue in the longer term.</p> <p>Discussions within DEWNR identified the importance of revisiting a bore assurance scheme from policy and implementation perspectives as a high priority to assist in mitigating the consequences associated with casing failure and uncontrolled flow.</p> <p>NR SAAL is undertaking preliminary work towards identifying options for a GAB bore assurance scheme and DEWNR will undertake a scoping study on the potential for the establishment of a bore assurance scheme to assist in mitigating the consequences associated with bore failure and uncontrolled flow.</p>	<p>Scoping study assessing the potential for the establishment of a bore assurance scheme to assist in mitigating the consequences associated with bore failure and uncontrolled flow.</p>	<p>Data from the well review and other sources will be consolidated.</p> <p>A scoping paper on the potential options and legal basis for implementation will be prepared.</p>	<p>Methodology</p> <p>Logistics</p> <p>Cost (assurance scheme)</p> <p>Infrastructure importance</p> <p>Environmental harm (not being undertaken)</p> <p>Priority</p>	<p>1</p> <p>1</p> <p>4</p> <p>4</p> <p>3</p> <p>high</p>	
Monitoring Bores	A10(e)	<p>The SA GAB Monitoring Network final report recommended continued monitoring of the artesian and non-artesian networks, however highlighted the difficulties and high cost in maintaining instrumented sites in remote areas of the GAB.</p> <p>Discussion within South Australia has also highlighted the importance of maintaining the monitoring network as a tool to also inform pastoralists on the environmental response to policy and resultant management strategies.</p> <p>Long term data flow will be instrumental in the overall management of the GAB and the development of cost efficient monitoring systems is required to assist with the collection and flow of information.</p> <p>DEWNR will investigate a lower cost option to gathering data in the GAB.</p>	<p>Synopsis of current monitoring activities determined potential efficiency dividends from planning and use of loggers with long battery life (to eliminate requirement for solar panels and other expensive and high maintenance equipment).</p>	<p>Funds will support R&D into a "tier 2" (lower cost) logger solution and implementation of the option to the network in 2016.</p>	<p>Methodology</p> <p>Logistics</p> <p>Cost (current maintenance)</p> <p>Infrastructure importance</p> <p>Environmental harm (not being undertaken)</p> <p>Priority</p>	<p>2</p> <p>3</p> <p>4</p> <p>1</p> <p>medium</p>	

Map 1 - Mulka Bore



Map 2 - Georgia Bore



Georgia bore

Georgia bore

William Creek

Andamooka

Leigh Creek

Bettana

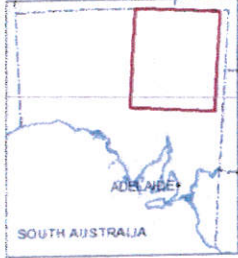
Glendambo

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Prepared by: **Geomatics**
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Government of South Australia
 Department of Environment, Water and Natural Resources



Map 3 - SA GAB Monitoring Network



GAB MONITORING NETWORK
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