

**Appendix A: Modification Notice - Regulation 22**

<b>Interest holder</b>	Tamboran B2 Pty Ltd	<b>EMP Title</b>	Beetaloo Sub-basin Velkerri 2019-2024 Drilling, Hydraulic fracturing and well testing EMP (ORI5-4)		<b>Unique EMP ID</b>	ORI5-4	<b>Mod #</b>	1	<b>Date</b>	30 August 2024
<b>Brief Description</b>	<p>The purpose of the regulation 22 is to clearly identify the groundwater bores originally proposed to be constructed under the <i>Beetaloo Basin Groundwater Monitoring Bore Installation Program - Velkerri 76 EMP (ORI2-1)</i> to be incorporated within the <i>Beetaloo Sub-basin Velkerri 2019-2024 Drilling, Hydraulic fracturing and well testing EMP (ORI5-4)</i>.</p> <p>These bores are located on the Velkerri 76 S2 well pad, with 2 already constructed and in use (e.g. RN041133 and RN041134) under the Velkerri 76 S2 DST EMP (ORI5-4):</p> <ul style="list-style-type: none"> <li>- Groundwater monitoring bore drilling, completion and equipping of the remaining two groundwater monitoring bores (this is in addition to the two contingent groundwater extraction bores proposed at the Velkerri 76 S2 well site – the ongoing use, management and monitoring of these bores is already covered by the Velkerri 76 S2 DST EMP)</li> <li>- Ongoing groundwater monitoring of the two control monitoring bores (CMBs) RN041133 and RN041134</li> <li>- Groundwater monitoring from new bores installed on Velkerri 76 S2 well site</li> <li>- Groundwater extraction and compliance from RN041134 under the water extraction licence # GRF 10285 and any new extraction bores</li> <li>- Decommissioning and rehabilitation at completion of activities on Velkerri 76 S2 well site.</li> </ul> <p>It is noted that the groundwater monitoring bore pads have been incorporated (subsumed) into the broader Velkerri 76 S2 well pad.</p>									
<b>Geospatial files included?</b>	Not specific to Waters Bores, but supplied KMZ									
<b>Does the proposed change result in a new, or increased, or potential or actual environmental impact or risk?</b>	<b>If an INCREASE in the existing potential or actual environmental risk, is it provided for in the EMP?</b>	<b>Does the proposed change require additional mitigation measures to be included?</b>	<b>Has additional stakeholder engagement been conducted?</b>	<b>Does it require additional environmental performance standards and measurement criteria?</b>	<b>Does it affect compliances with Sacred Site Authority Certificates?</b>	<b>Does it affect current rehabilitation, weed fire, wastewater, erosion and sediment control, spill or emergency response plans?</b>	<b>Will the environmental outcome continue to be achieved and will the impacts and risks be managed to ALARP and acceptable?</b>			
No. The Velkerri 76 S2 DST EMP (ORI5-4) includes provision for two groundwater bores to be located on the existing well site. A total of six (2 CMBs, 2 IMBs and 2 contingent extraction bores) are proposed.	No increased risks proposed. The existing Velkerri 76 S2 EMP provides for impacts and risks associated with groundwater bore pads and monitoring/production bores.	No. Existing mitigation measures are in place covering land clearing, erosion and sediment control. The groundwater monitoring bore pads are fully subsumed into the Velkerri 76 S2 well site.	Not applicable. Stakeholder engagement completed for all activities – Water Bore Drilling EMP, Civil EMP and DST EMP – that will be conducted on Velkerri 76 S2 well site.	No. The groundwater bore pads are already subsumed into the Velkerri 76 S2 well site. There is no additional environmental performance standards or measurement criteria that are not already captured by the Velkerri 76 S2 DST EMP (i.e. protection of soils, water, rehabilitation etc.)	No. Clearing of groundwater bore pads was covered by AAPA Certificate C2019/039. This AAPA certificate covered all activities for the Velkerri 76 S2 well site.	No. Groundwater bore pads are already subsumed into the broader Velkerri 76 S2 well site and as such captured in existing plans such as rehabilitation, weed, fire, wastewater, ESCP, spill response plan and emergency response plan.	Yes. The environmental outcomes pertaining to the protection of soils, surface water, groundwater, ecology and community are covered by the Velkerri 76 S2 DST EMP. The impacts and risks will continue to be managed to ALARP and acceptable.			
<b>Additional contextual information</b>	The purpose of this regulation 22 notification is to clearly identify the 4-groundwater extraction and monitoring bores approved under the <i>Beetaloo Basin Groundwater Monitoring Bore Installation Program - Velkerri 76 EMP (ORI2-1.1)</i> <sup>3</sup> are to be fully subsumed into the Velkerri 76 S2 DST EMP (ORI5-4).									

<sup>3</sup> NOTE: A regulation 14 notice has been submitted to DEPWS to close out the *Beetaloo Basin Groundwater Monitoring Bore Installation Program - Velkerri 76 EMP (ORI2-1.1)*. The construction, operation and management of 4 groundwater monitoring bores under ORI2-1.1 have been incorporated into this EMP (*Beetaloo Sub-basin Velkerri 2019-2024 Drilling, Hydraulic fracturing and well testing EMP (ORI5-4)*).

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Velkerri 2019-2024 Drilling, Hydraulic fracturing and well testing EMP (ORI5-4)	Unique EMP ID	ORI5-4	Mod #	1	Date	30 August 2024
<p>Two of the four groundwater extraction and monitoring bores (RN041133 and RN041134) have already been constructed on the Velkerri 76 S2 well pad and are in operation.</p> <p>The Velkerri 76 S2 DST EMP (ORI5-4) includes provision for the ongoing use, management and maintenance of existing approved groundwater extraction and monitoring bores approved under earlier EMPs, as well as provision for the installation of an additional two groundwater extraction and monitoring bores, making a total of 6 groundwater bores approved at this site.</p> <p>No specific update to the environmental risk assessment necessary, as activities already captured and do not materially change the risks or impacts.</p>									

<b>Interest holder</b>	Tamboran B2 Pty Ltd	<b>EMP Title</b>	Beetaloo Sub-basin Multi-well Drilling, Stimulation and Well Testing Program EMP	<b>Unique EMP ID</b>	ORI5-5	<b>Mod #</b>	1	<b>Date</b>	30 August 2024
<b>Current EMP text</b>					<b>Amended EMP text</b>				
<p><b>Executive Summary / 1.1 Background</b></p> <p>To meet this purpose, exploration activities in the 2019-2024 period will include:</p> <p>- Access to the pre-cleared areas covered under the previous Groundwater Monitoring bore and Civil Construction EMP's including:</p> <ul style="list-style-type: none"> <li>- Exploration well lease pad (4.5 ha) and wet weather laydown yard (1 ha) <ul style="list-style-type: none"> <li>o Camp lease pad (1.2 ha)</li> <li>o Stockpile storage area (0.2 ha)</li> <li>o Existing four (4) gravel pits</li> <li>o Existing access tracks to the Velkerri 76 S2 site and gravel pits</li> </ul> </li> <li>- Installation of an additional two groundwater extraction and monitoring bores</li> <li>- The drilling of the Velkerri 76 S2-1 exploration well <ul style="list-style-type: none"> <li>o Drilling of a vertical well section to 2000-3000m below ground level</li> <li>o Drilling of a horizontal well section up to 3000m in length</li> </ul> </li> <li>- Hydraulic fracture stimulation of a horizontal exploration well, with up to 20 stages completed</li> <li>- Exploration well completion and testing including: <ul style="list-style-type: none"> <li>o Completion of up to 12 months of well testing</li> <li>o Storage and treatment of up to 12 ML of flowback onsite</li> </ul> </li> <li>- Exploration well suspension and decommissioning of an exploration well</li> <li>- Construction and operation of a temporary camp</li> <li>- Helicopter operations</li> <li>- Asset maintenance and monitoring activities</li> <li>- Site decommissioning and rehabilitation</li> <li>- All activities ancillary of the above.</li> </ul> <p>No additional land clearing is proposed under this EMP.</p>					<p><b>Executive Summary / 1.1 Background</b></p> <p>To meet this purpose, exploration activities in the 2019-2024 period will include:</p> <p>- Access to the pre-cleared areas covered under the previous Groundwater Monitoring bore and Civil Construction EMP's including:</p> <ul style="list-style-type: none"> <li>- Exploration well lease pad (4.5 ha) and wet weather laydown yard (1 ha) <ul style="list-style-type: none"> <li>o Camp lease pad (1.2 ha)</li> <li>o Stockpile storage area (0.2 ha)</li> <li>o Existing <b>three (3) gravel pits (VGP1, VGP2 and VGP3)</b></li> <li>o Existing access tracks to the Velkerri 76 S2 site and gravel pits</li> </ul> </li> <li>- <b>Installation of the two impact monitoring bores (IMB) and an additional two groundwater extraction bores for additional water supply, and the ongoing groundwater monitoring of monitoring bores.</b></li> <li>- <b>Groundwater extraction and compliance of RN041133 and RN041134 under the water extraction licence # GRF 10285 and any new groundwater extraction bores.</b></li> <li>- The drilling of the Velkerri 76 S2-1 exploration well <ul style="list-style-type: none"> <li>o Drilling of a vertical well section to 2000-3000m below ground level</li> <li>o Drilling of a horizontal well section up to 3000m in length</li> </ul> </li> <li>- Hydraulic fracture stimulation of a horizontal exploration well, with up to 20 stages completed</li> <li>- Exploration well completion and testing including: <ul style="list-style-type: none"> <li>o Completion of up to 12 months of well testing</li> <li>o Storage and treatment of up to 12 ML of flowback onsite</li> </ul> </li> <li>- Exploration well suspension and decommissioning of an exploration well</li> <li>- Construction and operation of a temporary camp</li> <li>- Helicopter operations</li> <li>- Asset maintenance and monitoring activities</li> <li>- Site decommissioning and rehabilitation</li> <li>- All activities ancillary of the above.</li> </ul> <p>No additional land clearing is proposed under this EMP.</p>				
<p><b>1.3 Project Boundary</b></p> <p>The boundary of this EMP is defined as the area which may be affected by exploration activities. This includes:</p> <ul style="list-style-type: none"> <li>- Access tracks to and from the Velkerri 76 S2 lease from the Stuart Highway</li> <li>- Velkerri 76 S2 lease pad, helipad, camp pad and stockpile area</li> </ul> <p>Velkerri 76 S2-1 exploration well.</p>					<p><b>1.3 Project Boundary</b></p> <p>The boundary of this EMP is defined as the area which may be affected by exploration activities. This includes:</p> <ul style="list-style-type: none"> <li>- Access tracks to and from the Velkerri 76 S2 lease from the Stuart Highway</li> <li>- Velkerri 76 S2 well pad, <b>groundwater bore pads</b>, helipad, camp pad and stockpile area</li> </ul> <p>Velkerri 76 S2-1 exploration well.</p>				
<p><b>3.4 Groundwater water extraction bore installation</b></p> <p>An additional two contingent groundwater water extraction bore may be drilled on the existing lease pad prior to the commencement of stimulation activities. The extraction bores will only be required where the existing supply points (the Impact and control monitoring bores as described in section 3.16) are unable to supply the full drilling and stimulation campaign due to insufficient yield. These bores will target the Gum Ridge Formation and will be added to Origin's water Extraction licence GRF 10285.</p>					<p><b>3.4 Groundwater bore installation – extraction and monitoring bores</b></p> <p><b>Two impact monitoring bores (IMBs) will be installed on the Velkerri 76 S2 well pad to monitoring impacts from the drilling and stimulation activities. In addition, two contingent groundwater water extraction bore may be drilled on the existing Velkerri 76 S2 well site prior to the commencement of stimulation activities. The extraction bores will only be required where the existing supply points (the impact and control monitoring bores as described in section 3.16) are unable to supply the full drilling and stimulation campaign due to insufficient yield. These bores will target the Gum Ridge Formation and will be added to Tamboran's water Extraction licence GRF 10285.</b></p>				

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<b>Current EMP text</b>					<b>Amended EMP text</b>				
A bore construction permit will be obtained for each bore and any groundwater take will be licenced in accordance with the NT Water Act 1992. On completing the construction of each water bore, the relevant statement of bore and gamma log will be provided to DENR. ...					A bore construction permit will be obtained for each bore and any groundwater take will be licenced in accordance with the NT Water Act 1992. On completing the construction of each water bore, the relevant statement of bore and gamma log will be provided to <b>DEPWS</b> .				