Appendix A: Modification Notice - Regulation 22

Interest holder	Tamboran B2 Pty Ltd		aloo Sub-basin Multi-well Drilling, s ration Permit (EP) 98 & 76 Enviror	Stimulation and Well Testing Progra Iment Management Plan	m Unique EMP ID	ORI10-3	Mod #	6	Date	25 September 2024		
Brief Description	Stimulation and Well Testing horizontal section drilling, H	g Program Exploration Perm IFS and well testing deferred	Exploration Permit (EP) 98 & 76 EMP (ORI10-3). The regulated activities under the Velkerri 76 S2 DST EMP				2-1 to 2025/26. To reduce administration burden under multiple EMPs for the same well site, this modification					
Geospatial files included?	Yes											
Does the proposed change result	If an INCREASE in the	Does the proposed chang	e Has additional stakeholder	Does it require additional	Does it affect c	ompliances	Does it a	affect curren	t rehabilitation,	Will the environmental outcome continue		
in a new, or increased, or	existing potential or	require additional	engagement been	environmental performance	with Sacred Sit	e Authority			ter, erosion and	to be achieved, and will the impacts and		
potential or actual environmental	actual environmental risk,	mitigation measures to be	e conducted?	standards and measurement	Certificates?				oill or emergency	risks be managed to ALARP and		
impact or risk?	is it provided for in the	included?		criteria?			response	e plans?		acceptable?		
No.	EMP? Yes.	No.	Not applicable.	No.	No.		No			Yes.		
The Velkerri 76 S2 DST EMP (ORI5- 4) covered all impacts and risks associated with the vertical and horizontal drilling, as well as HFS and well testing. These activities were approved by the Minister on 23 December 2019 having determined that the environmental impacts and risks were reduced to a level that is ALARP and acceptable. The Beetaloo Multi-well EMP (ORI10-3) includes provision for drilling, HFS and well testing for Velkerri 76 S2-2H and Velkerri 76 S2-3H and well testing of Velkerri 76 S2-1. The management of risks	The Beetaloo Multi-well EMP (ORI10-3) currently includes assessment of environmental risk for drilling, HFS and well testing activities. The incorporation of the Velkerri 76 S2-1 regulated activities - horizontal drilling and HFS activities and associated activities that were deferred into ORI10-3 does not change how the activity will be managed. ORI10-3 provides for assessment of the	Existing mitigation measures are in place for all drilling, HFS and well testing, along with the supporting activities such as water bores, gravel pits and the future rehabilitation. Activities described in the Velkerri 76 S2 DST EMP (ORI5-4) are to be fully subsumed into the Beetaloo Multi-well EMP (ORI10-3).	aware that activities on Velkerri 76 S2 are still	The environmental performance standards and measurement criteria are sufficiently captured by the Beetaloo Multi-well EMP (ORI10-3) (i.e. protection of soils, water, rehabilitation, etc.)	Amendment to Certificate C202 C2022/02 are in Note C2020/00 to the original A C2019/039 for S2 site. All activities are AAPA certificate	20/003 and ot required. 3 is a variation AAPA Certificate the Velkerri 76 e within the	mainten tracks is broader with the Velkerri are capt rehabilit part of t	No. Construction, use, management and maintenance of gravel pits and access tracks is already incorporated into the broader regulated activities associated with the planned petroleum wells on Velkerri 76 S2 well site. These activities are captured in existing plans such as rehabilitation, weed, fire, ESCP, that are part of the Beetaloo Multi-well EMP (ORI10-3).		Construction, use, management and maintenance of gravel pits and access tracks is already incorporated into the broader regulated activities associated with the planned petroleum wells on Velkerri 76 S2 well site. These activities are captured in existing plans such as rehabilitation, weed, fire, ESCP, that are part of the Beetaloo Multi-well EMP		The environmental outcomes pertaining to the protection of soils, surface water, groundwater, ecology and community are covered by the Beetaloo Multi-well EMP (ORI10-3). The impacts and risks will continue to be managed to ALARP and acceptable.
and impacts are consistent across both EMPs.	accumulation of all activities on Velkerri 76 S2 well site.											
Additional contextual information	The purpose of this regulation 22 notification is to clearly identify the regulated activities associated with Velkerri 76 S2-1 horizontal drilling, stimulation and testing, and associated activities are fully subsumed into the <i>Beetaloo Sub-basin Multi-well Drilling, Stimulation and Well Testing Program Exploration Permit (EP) 98 & 76 EMP (ORI10-3)</i> . No specific update to the environmental risk assessment necessary, as activities already captured and do not materially change the risks or impacts. This regulation 22 notification enables the regulation 14 notice to close out the <i>Beetaloo Basin Drilling, Stimulation and Well Testing Program Velkerri 76 S2 EP76 EMP (ORI5-4.1)</i> . This notice will be provided to DEPWS. t is noted that the Beetaloo Multi-well PMP (ORI10-3) has five previous regulation 22 notifications as follows: ORI10-3.1 Water bore location change ORI10-3.2 Change to HF fluids ORI10-3.3 Change to completion fluids ORI10-3.4 Bore infrastructure and EMP edits ORI10-3.5 Velkerri 76 S2 well site civil – gravel pits, access tracks and associated activities. Famboran B2 Pty Ltd is now the operator. As such any mention of Origin in the Beetaloo Multi-well EMP (ORI10-3) is replaced with Tamboran.											



Interest holder	Tamboran B2 Pty Ltd	EMP	Beetaloo Sub-basin Multi-well Drilling, Stimu Exploration Permit (EP) 98 & 76 Environmen		Unique	ORI10-3	Mod #	6	Date	25 September 2024	
		Title			EMP ID						
	Current EMF	Ptext		Amended EMP text							
Executive Summary (ES)				Executive Summary (ES)							
basin. This Environment Management P for the drilling, hydraulic fracture stimu existing Amungee NW and Velkerri 76 S each.	lan (EMP) forms the basis of Origin's ulation (HFS) and well testing of fou 2 sites (Figure 1). This will increase t	s application to the N ur additional explorat the number of E&A w	(EP) 98 and EP76, located in the Beetaloo Sub- orthern Territory (NT) Minister for Environment tion and appraisal (E&A) wells: two each at the rells at Amungee NW and Velkerri 76 S2 to three	 basin. This Environment Management Plan (EMP) forms the basis of Tamboran's application to the Northern Territory (NT) Minis Environment for the drilling, hydraulic fracture stimulation (HFS) and well testing of five exploration and appraisal (E&A) wells: two at the Amungee NW well site and three at the Velkerri 76 S2 well site (Figure 1). This increases the number of E&A wells at Amungee NW and 76 S2 to three wells at each well site. 							
76 S2 Civil Construction EMP (NT-2050 Beetaloo Basin Drilling, Stimulation and	-15-MP-03) and contains the Velker Well Testing Program Velkerri 76 S2	which was drilled in 2021 under the approved	76 S2 Civil Construction EMP (NT-20	050-15-MP-03) imulation and W	and contains /ell Testing Pr	the Velkerri togram Velker	76 S2-1 E8 ri 76 S2 EN	A well which IP (NT-2050-2	u was vertically drilled in 2021 under the US-MP-032). Following this the Velkerri 76		
The four proposed additional E&A wells			The four proposed additional E&A w	vells and the def	erred E&A we	ell covered un	der this EM	P are:			
	ee NW-3H at the Amungee NW loca		Amungee NW-2H and Amu								
	i 76 S2-3H at the Velkerri 76 S2 locat		 Velkerri 76 S2-1H, Velkerri 	0	U			ocation.			
and well testing of the four E&A wells a	t the existing sites is considered an i	76 S2 wells are wet gas. The drilling, stimulation ifirming the technical and commercial feasibility the environmental footprint of any potential	n All wells target the Velkerri shale resource, though the Amungee NW is dry shale and the Velkerri 76 S2 wells are wet gas. The drilling,						firming the technical and commercial		
ES, Description of the activity				ES, Description of the activity							
Table 1: Description of the proposed ex	xploration and appraisal activities for	or the Amungee NW	and Velkerri 76 S2 sites	Table 1: Description of the proposed	d exploration a	nd appraisal a	activities for t	he Amunge	e NW and Ve	elkerri 76 S2 sites	
Activity	Description			Activity	Descriptio	n					
Amungee NW scope				Amungee NW scope							
No change				No change							
Velkerri 76 S2 scope				Velkerri 76 S2 scope							
Site set-up and mobilisation to support the Velkerri 76 S2-2H and Velkerri 76 S2-3H exploration well		80 km is an existing p	Velkerri 76 S2 site and gravel pits from the astoral track constructed by the pastoralist	Site set-up and mobilisation to support Velkerri 76 S2-1H, Velkerri 76 S2-2H and Velkerri 76 S2-3H exploration wells	i s	Stuart Highwa	-	km is an exi		ri 76 S2 site and gravel pits from the track constructed by the pastoralist	
	Use of the existing Velke landing pad	erri 76 S2 well pad, ca	mp pad, stockpile storage and helicopter	exploration weil <mark>s</mark>		Jse of the exi anding pad	sting Velkerri	76 S2 well	oad, camp pa	d, stockpile storage and helicopter	
	Use of existing drilling su	ump to manage up to	9 3,000 m ³		• (Jse of existing	g drilling sump	o to manag	e up to 3,000	m ³	
	Use of existing sediment	t basin and site bund	for wastewater management and storage		• (Jse of existing	g sediment ba	sin and site	e bund for wa	stewater management and storage	
			np located on the camp pad (~70-person the well pad (~8-person capacity)							ted on the camp pad (~70-person ell pad (~8-person capacity)	
	Set-up of chemical and r	material storage area	s		• 9	Set-up of cher	mical and mat	erial storag	e areas		
 Set-up of drilling rig, including blow-out preventors, fluid systems and associated equipment such as pipe racks, power generation, offices, ablution blocks and cementing units 										fluid systems and associated fices, ablution blocks and cementing	
 Set-up of HFS equipment, completions rig and equipment, well testing equipment, and other associated equipment at Velkerri 76 S2 							equipment, c ted equipmen			oment, well testing equipment, and	
Approximately 44 traffic movements per day during site demobilisation					• /	Approximatel	y 44 traffic mo	ovements p	er day during	site demobilisation	
E&A activities at the Velkerri 76 S2 site including drilling, HFS and well testing of Velkerri 76 S2-2H and Velkerri 76 S2- 3H	 Operation of the two ter Transportation, handling 	E&A activities at the Velkerri 76 S2 site including drilling, HFS and well testing of <mark>Velkerri 76 S2-1H,</mark> Velker 76 S2-2H and Velkerri 76 S2- 3H			the two tempo n, handling ar			cals, fuels and wastes			

ri 76 S2-3H horizontal E&A drilling oved Well Operations iquifers -3H 52-2H and Velkerri 76 S2-3H se requirements and as per US				
drilling oved Well Operations iquifers -3H 52-2H and Velkerri 76 S2-3H se requirements and as per US				
equifers -3H 52-2H and Velkerri 76 S2-3H ce requirements and as per US				
52-2H and Velkerri 76 S2-3H e requirements and as per US				
e requirements and as per US				
%				
ver generation and use				
s) on <mark>Velkerri 76 S2-1H,</mark> ith approved WOMP				
S2-1H, Velkerri 76 S2-2H and ne Code of Practice				
ng groundwater extraction				
ls, leak detection and all othe				
6, located in the Beetaloo Su ern Territory (NT) Minister f re proposed to be drilled on th of E&A wells on eacch well sit				
portant step in confirming t with recent data acquired fro Velkerri 76 S2 is located in t f wet gas.				
d Well Testing Program Velke aulic fracturing and well testi				
mission the proposed E&A we				
1.2 Project Boundary				
well site and <mark>Velkerri 76 S2 w</mark> get the Velkerri shale resourd				
ne C ing is, li is, lis				

1.2 Project Boundary	1.2 Project Boundary
Tamboran proposes to drill, stimulate and test up to two additional petroleum E&A wells on both the Amungee NW and Velkerri 76 S2 sites	Tamboran proposes to drill, stimulate and test up to two addtiional petroleum E&A wells on the Amungee NW well si
within EP 98 and EP 76 (total of four new wells). These wells will target the Velkerri shale resource. The boundary of this EMP is defined as the	sites within EP 98 and EP 76 (total of four new wells and one re-entry well). The three wells on each well site target the
area which may be affected by E&A activities. This includes:	The boundary of this EMP is defined as the area which may be affected by E&A activities, including:
 existing access tracks to the Velkerri 76 S2 site and Amungee NW site 	• use and maintenance of existing access tracks to the Velkerri 76 S2 well site and Amungee NW well site

existing access tracks to the Velkerri 76 S2 site and Amungee NW site

Interest holder	Tambora	n B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Mu Exploration Permit (EP)	-		ng Program Unique EMP ID	ORI10-3	Mod #	6	Date	25 September 202	4
		Current EMF	' text					Am	ended EMP t	text	<u> </u>		
 existi VGP3 existi prope breal prope prope prope nW2 prope of the prope 	osed access track (1.1 km) to the ing Amungee NW and Velkerri 76 3), water bores, laydown yard, he ing Velkerri 76 S2 chemical storag osed expansion of the existing An k osed construction of a helipad ar osed installation of groundwater 2 location (2.0 ha) osed drilling, stimulation, well te e Amungee NW and Velkerri 76 S osed well testing on the existing ions of the infrastructure and ass	5 S2 well pad, camp pad elipad and stockpile stor ge areas, well pad bund mungee NW lease pad a nd laydown yard at Amu extraction/ monitoring sting and suspension ar 52 sites Amungee NW-1H and V	, and associated infrastr age areas) , sediment basin, wastev and camp pad, including ingee NW bores, including 2 grour d abandonment of an a elkerri 76 S2-1 wells.	water tanks and drilling the installation of a new ndwater monitoring bor dditional two petroleum	sump v fence line and fire es at the Amungee n E&A wells at each	 exist vGP3 exist prop brea prop prop additiat th grou drilliat Ve prop Amu asset site o 	posed construction and operation posed installation of the two im tional water supply/ monitoring the Amungee NW2 location (2.0 andwater extraction and compli- ing two additional petroleum E8 elkerri 76 S2 well site (three petro posed drilling, stimulation, well ungee NW and Velkerri 76 S2 sit t maintenance and monitoring decommissioning and rehabilite	76 S2 well pad, nelipad and stor age areas, well Amungee NW v on of a helipad a pact monitoring on the existing ance under the A wells at Amu roleum E&A we sesting and susp es activities	camp pad, ar ckpile storage pad bund, se vell pad and c and laydown y bores (IMB) g Velkerri 76 S water extract ingee NW we ells per site)	e areas) diment basin, camp pad, incl yard at Amung and an additio 52 well site (up tion licence #) Il site and two	wastewate uding the in gee NW and onal two gr o to 6 in tot GRF 10285 o additional	er tanks and drilling s nstallation of a new f d operation at Velker oundwater extraction al) and 2 groundwater and one re-entry per	ump ence line and fire ri 76 S2 n bores for er monitoring bor troleum E&A wel
Exploration	ed exploration sites and infra	structure covered un	der this EMP	Approx. Easting	Approx.	The proposed locat	ctivities ancillary of the above. ions of the infrastructure and a ed exploration sites and inf			r this EMP	in Table 6	and Figure 5 to Figure	Approx.
Permit Velkerri 76 S2					Northing	Permit Velkerri 76 S2							Northing
EP 76	Existing approved Velkerri 76 S2 well pad	Amungee Mungee	53	435557	8137497	EP 76	Existing approved Velkerri 70 S2 well pad	Amungee	Mungee		53	435557	8137497
EP76	Existing approved Velkerri 76 S2-1 E&A well	Amungee Mungee	53	435578	8136331	EP76	Existing approved Velkerri 7 S2-1 <mark>H</mark> E&A well	Amungee	Mungee		53	435578	8136331
EP 76	Proposed Velkerri 76 S2-2H E&A well	Amungee Mungee	53	435578	8136346	EP 76	Proposed Velkerri 76 S2-2H E&A well	Amungee	Mungee		53	435578	8136346
EP 76	Proposed Velkerri 76 S2-3H E&A well	Amungee Mungee	53	435578	8136362	EP 76	Proposed Velkerri 76 S2-3H E&A well	Amungee	Mungee		53	435578	8136362
EP 76	Existing Velkerri 76 S2 main camp	Amungee Mungee	53	435632	8136163	EP 76	Existing Velkerri 76 S2 main camp	Amungee	Mungee		53	435632	8136163
EP 76	Gravel Pit - VGP1	Amungee Mungee	53	398121	8136033	EP 76	Gravel Pit - VGP1	Amungee	Mungee		53	398121	8136033
EP 76	Gravel Pit – VGP2	Amungee Mungee	53	432833	8135243	EP 76	Gravel Pit – VGP2	Amungee	Mungee		53	432833	8135243
EP 76	Gravel Pit – VGP3	Amungee Mungee	53	398121	8136033	EP 76	Gravel Pit – VGP3	Amungee	Mungee		53	398121	8136033
EP 76/117	Existing access tracks (tracks to gravel pits, well site and 80 km existing pastoral track –	Amungee Mungee		Refer Figure 5 and I		EP 76/117	Existing access tracks (tracks to gravel pits, well site and 8 km existing pastoral track –		Mungee			Refer Figure 5 and I	

	Tambora	III BZ PLY LLU	EMP Title		-	illing, Stimulation and Well Testing Program Unique ORI10-3 Mod # 6 Date 25 September 2024 Invironment Management Plan EMP ID						- 7	
		Current EMP	ext					Ame	nded EMP te	ext			
 exi VG exi pro bre pro pro pro of t pro 	pposed access track (1.1 km) to the sting Amungee NW and Velkerri 76 iP3), water bores, laydown yard, he isting Velkerri 76 S2 chemical stora oposed expansion of the existing A eak oposed construction of a helipad an oposed installation of groundwater V2 location (2.0 ha) oposed drilling, stimulation, well te the Amungee NW and Velkerri 76 oposed well testing on the existing ations of the infrastructure and ass	sump v fence line and fire es at the Amungee n E&A wells at each	 existi VGP3 existi propibreal propi propi addit at the grout drillin at Ve propi Amuti asset site c all ac 	m access track to the Amungee I ing Amungee NW and Velkerri 76 3), water bores, laydown yard, he ing Velkerri 76 S2 chemical stora toosed expansion of the existing A k bosed construction and operation toosed installation of the two impa- tional water supply/ monitoring of the Amungee NW2 location (2.0 ha ndwater extraction and compliar ng two additional petroleum E&/ elkerri 76 S2 well site (three petro bosed drilling, stimulation, well te ingee NW and Velkerri 76 S2 sites t maintenance and monitoring ac decommissioning and rehabilitati ctivities ancillary of the above.	5 S2 well pad, ca elipad and stock ge areas, well p mungee NW we of a helipad an act monitoring b on the existing N on t	amp pad, and spile storage lad bund, sed ell pad and ca d laydown ya pores (IMB) a Velkerri 76 S2 vater extracti lagee NW well s per site) ension and ab	areas) diment basin, amp pad, incl ard at Amung and an additio 2 well site (up on licence # I site and two pandonment	, wastewate luding the ii gee NW <mark>and onal two gr p to 6 in tot GRF 10285 o additional of <mark>up to th</mark>i</mark>	er tanks and drilling s nstallation of a new f d operation at Velker roundwater extraction tal) and 2 groundwat l and one re-entry pe ree petroleum E&A w	sump fence line and fire ri 76 S2 n bores for er monitoring bo troleum E&A wel			
								.		•			
Exploration	ated exploration sites and infra			Approx. Easting	Approx.	Table 6: Associate	ed exploration sites and infra	structure cov		this EMP	Zone*	Approx. Easting	Approx.
able 6: Associa Exploration Permit Velkerri 76 S2	ated exploration sites and infra	structure covered und	er this EMP Zone [*]	Approx. Easting	Approx. Northing	Table 6: Associate	ed exploration sites and infra			this EMP	Zone*	Approx. Easting	Approx. Northing
xploration Permit	-					Table 6: Associate Exploration Permit	-	structure cov	ered under	this EMP	Zone*	Approx. Easting 435557	
ermit Vermit Velkerri 76 S2	Infrastructure name Existing approved Velkerri 76	Station	Zone ^a	435557	Northing	Table 6: Associate Exploration Permit Velkerri 76 S2	Infrastructure name Existing approved Velkerri 76	structure cove	ered under	this EMP			Northing
Exploration Permit /elkerri 76 S2 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76	Station Amungee Mungee	Zone ^a 53	435557 435578	Northing 8137497	Table 6: Associate Exploration Permit Velkerri 76 S2 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76	Station Amungee M	ered under	this EMP	53	435557	Northing 8137497
ermit /elkerri 76 S2 EP 76 EP76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1 E&A well Proposed Velkerri 76 S2-2H	Station Amungee Mungee Amungee Mungee	Zone ³ 53 53	435557 435578 435578	Northing 8137497 8136331	Exploration Permit Velkerri 76 S2 EP 76 EP76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1H E&A well Proposed Velkerri 76 S2-2H	Station Amungee M Amungee M	ered under lungee lungee	this EMP	53	435557 435578	Northing 8137497 8136331
xploration vermit /elkerri 76 S2 EP 76 EP76 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1 E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H	Station Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee	Zone* 53 53 53	435557 435578 435578 435578 435578	Northing 8137497 8136331 8136346	Exploration Permit Velkerri 76 S2 EP 76 EP 76 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1H E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H	Station Station Amungee M Amungee M Amungee M	ered under	this EMP	53 53 53	435557 435578 435578	Northing 8137497 8136331 8136346
xploration ermit elkerri 76 S2 EP 76 EP 76 EP 76 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1 E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H E&A well Existing Velkerri 76 S2 main	Station Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee	Zone* 53 53 53 53 53	435557 435578 435578 435578 435578 435578 435578	Northing 8137497 8136331 8136346 8136362	Exploration Permit Velkerri 76 S2 EP 76 EP 76 EP 76 EP 76 EP 76 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1H E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H E&A well Proposed Velkerri 76 S2-3H E&A well	Station Station Amungee M Amungee M Amungee M Amungee M	ered under	this EMP	53 53 53 53	435557 435578 435578 435578 435578	Northing 8137497 8136331 8136346 8136362
xploration ermit /elkerri 76 S2 EP 76 EP 76 EP 76 EP 76 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1 E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H E&A well Existing Velkerri 76 S2 main camp	Station Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee	Zone* 53 53 53 53 53 53 53	435557 435578 435578 435578 435578 435578 435632 398121	Northing 8137497 8136331 8136346 8136362 8136163	Table 6: Associate Exploration Permit Velkerri 76 S2 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1H E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H E&A well Existing Velkerri 76 S2 main camp	Station Station Amungee M Amungee M Amungee M Amungee M	ered under	this EMP	53 53 53 53 53 53	435557 435578 435578 435578 435578 435632	Northing 8137497 8136331 8136331 8136346 8136362 8136163 8136033
xploration ermit /elkerri 76 S2 EP 76 EP 76 EP 76 EP 76 EP 76 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1 E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H E&A well Existing Velkerri 76 S2-3H Existing Velkerri 76 S2 Gravel Pit - VGP1	Station Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee Amungee Mungee	Zone* 53 53 53 53 53 53 53 53	435557 435578 435578 435578 435578 435578 435632 398121 432833	Northing 8137497 8136331 81363346 8136362 8136163 8136033	Exploration Permit Velkerri 76 S2 EP 76 EP 76	Infrastructure name Existing approved Velkerri 76 S2 well pad Existing approved Velkerri 76 S2-1H E&A well Proposed Velkerri 76 S2-2H E&A well Proposed Velkerri 76 S2-3H E&A well Existing Velkerri 76 S2 main camp Gravel Pit - VGP1	Station Station Amungee M Amungee M Amungee M Amungee M Amungee M	ered under	this EMP	53 53 53 53 53 53 53	435557 435578 435578 435578 435578 435632 398121	Northing 8137497 8136331 8136346 8136362 8136163

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Multi-well Drilling, Stimu Exploration Permit (EP) 98 & 76 Environmen		Unique EMP ID	ORI10-3	Mod #	6	Date	25 September 2024
	Current EM					Am	nended EMP	text		
1.3 Project proponent				1.3 Project proponent						
The proponent for the project is Or origin nt beetaloo@originenergy.		erator. Origin repres	sentatives can be contacted at	The proponent for the project is Tamboran B2 Pty Ltd as the Operator. Tambornan representatives can be contacted at <u>tamboran.contact@tamboran.com</u> .						atives can be contacted at
1.4 Multi-well lease pads				1.4 Multi-well pads						
Beetaloo Sub-basin E&A project to pro- additional wells on the existing lease p surface information used to understa	vide a proof-of-concept for a multi- ad at Velkerri 76 S2 and on the ext and the potential productivity of bads is likely to significantly reduc	well pad use within the tended lease pad at A the reservoir and mir	under this EMP are a natural evolution in the e Velkerri shale resource. The installation of the mungee NW will obtain critical subsurface and nimise the environmental impact of a future footprint of any potential development and	 E&A project to provide a proof-of-concept for a multi-well pad use within the Velkerri shale resource. The installation of the additional we the existing well pad at Velkerri 76 S2 and on the extended lease pad at Amungee NW will obtain critical subsurface and surface information to understand the potential productivity of the reservoir and minimise the environmental impact of a future development. The use of multi-well pad at Velkerri and surface information are understand the potential productivity of the reservoir and minimise the environmental impact of a future development. The use of multi-well pad at Velkerri and surface information are understand the potential productivity of the reservoir and minimise the environmental impact of a future development. 					The installation of the additional wells on I subsurface and surface information use uture development. The use of multi-we	
3. Description of regulated activity			3. Description of regulated activity							
		maintain and decommission the four proposed marised in Table 8 are proposed to be executed							ain and decommission the four propose ed in Table 8 are proposed to be execute	
Table 8: Description of the proposed e	xploration and appraisal activities	for the Amungee NW	and Velkerri 76 S2 sites	Table 8: Description of the proposed	exploration a	nd appraisal a	ctivities for t	he Amunge	e NW and V	elkerri 76 S2 sites
Activity	Description		Activity	Description						
Amungee NW scope				Amungee NW scope						
No change				No change						
Velkerri 76 S2 scope				Velkerri 76 S2 scope	-					
Site set-up and mobilisation to support the Velkerri 76 S2-2H and Velkerri 76 S2-3H exploration well	 Stuart Highway (noting that Tamboran current) Use of the existing Velk landing pad Use of existing drilling s Use of existing sedimer Set-up of two temporar capacity) and a drilling in Set-up of chemical and Set-up of drilling rig, indequipment such as pipe units Set-up of HFS equipment other associated equipment 	80 km is an existing pa ly maintain) serri 76 S2 well pad, can sump to manage up to nt basin and site bund f ry camps – a main cam mini-camp located on material storage areas cluding blow-out preve e racks, power generat nt, completions rig and ment at Velkerri 76 S2	for wastewater management and storage up located on the camp pad (~70-person the well pad (~8-person capacity) s entors, fluid systems and associated ion, offices, ablution blocks and cementing d equipment, well testing equipment, and	Site set-up and mobilisation to support Velkerri 76 S2-1H, Velkerri 76 S2-2H and Velkerri 76 S2-3H exploration wells		Stuart Highwa that Tamboran Use of the exist landing pad Use of existing Use of existing Set-up of two capacity) and Set-up of cher Set-up of drilli equipment sur units Set-up of HFS other associat	y (noting 80 l n currently m sting Velkerri g drilling sum g sediment ba temporary ca a drilling min nical and mat ng rig, includ ch as pipe rac equipment, c ed equipmer	km is an exis aintain) 76 S2 well p p to manage asin and site amps – a mai i-camp locat terial storage ing blow-out cks, power ge completions it at Velkerri	ting pastora ad, camp pa e up to 3,000 bund for wa in camp loca ed on the wa e areas t preventors eneration, o rig and equip 76 S2	ri 76 S2 site and gravel pits from the track constructed by the pastoralist d, stockpile storage and helicopter m ³ stewater management and storage ted on the camp pad (~70-person ell pad (~8-person capacity) fluid systems and associated fices, ablution blocks and cementing oment, well testing equipment, and
 E&A activities at the Velkerri 76 S2 site including drilling, HFS and well testing of Velkerri 76 S2-2H and Velkerri 76 S2-3H Operation of the two temporary camps Transportation, handling and storage of bulk chemicals, fuels and wastes Drilling of the Velkerri 76 S2-2H and Velkerri 76 S2-3H horizontal E&A wells, inclu collection of reservoir quality data during drilling Well design in accordance with the Code of Practice and approved Well Operation Management Plan (WOMP) including isolation of freshwater aquifers HFS of Velkerri 76 S2-2H and Velkerri 76 S2-3H 				E&A activities at the Velkerri 76 S2 site including drilling, HFS and well testing of Velkerri 76 S2-1H, Velkerr 76 S2-2H and Velkerri 76 S2- 3H	ri • 1	Drilling of the wells, includin Well design in Management	n, handling au Velkerri 76 S. g the collecti accordance v Plan (WOMP	nd storage of 2-1H, Velker on of reserve with the Cod) including is	ri 76 S2-2H a oir quality da le of Practice solation of fr	cals, fuels and wastes nd Velkerri 76 S2-3H horizontal E&A Ita during drilling and approved Well Operations eshwater aquifers

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Multi-well Drilling, Stimu Exploration Permit (EP) 98 & 76 Environmen		Unique EMP ID	ORI10-3	Mod #	6	Date	25 September 2024	
	Current EMF	' text		Amended EMP text							
	 Use of existing surface fa Well testing of the Velke Storage of condensate Gas and condensate flar US EPA 40 CFR 63.11, wi Trucking of condensate (Beneficial use of apprais Maintenance and monit Velkerri 76 S2-3H wells i Build up testing, suspense E&A wells (if required) ir Groundwater extraction licence (WEL GRF 10285) 	acilities rri 76 S2-1 vertical well ing in accordance with 6 th a flare tip combustio where beneficial usage al gas and condensate f pring works (including w n accordance with appr sion and decommission accordance with the C of approximately 110 M	Code of Practice requirements and as per n efficiency of 98% is authorised) for on-site power generation and use well work overs) on Velkerri 76 S2-2H and oved WOMP ing Velkerri 76 S2-2H and Velkerri 76 S2-3H code of Practice ML under existing groundwater extraction ormwater, soils, leak detection and all			E&A wells Use of existing Storage of con Gas and conde EPA 40 CFR 63 Trucking of co Beneficial use Maintenance a Velkerri 76 S2- Build up testin Velkerri 76 S2- Groundwater icence (WEL C	g surface facili idensate ensate flaring .11, with a fla ndensate (wh of appraisal g and monitorir -2H and Velke og, suspension -3H E&A wells extraction of GRF 10285) tivities (includ	ities in accordan are tip comb here benefici gas and cond erri 76 S2-3H h and decom s (if required approximate ding ground	ce with Code ustion efficie ial usage is au lensate for or cluding well v I wells in acco missioning <mark>V</mark> I) in accordar ely 110 ML un water, stormy		

Table 13: Velkerri 76 S2 site activity summary table

Table 13: Velkerri 76 S2 site activity summary table

able 13. Veiken 70 32 site activity									
Component	Existing Velkerri 76 S2 site	EMP scope	Total site activity summary	Component	Existing Velkerri 76 S2 site	EMP scope	Total site activity summary		
General				General					
Number of E&A wells	One appraisal well: Velkerri 76 S2-1H spudded 12 August 2021	Two additional E&A wells: Velkerri 76 S2-2H, Velkerri 76 S2-3H	3 E&A wells (One vertical and two horizontal wells)	Number of E&A wells	One appraisal well: Velkerri 76 S2-1 spudded 12 August 2021	Two additional E&A wells: Velkerri 76 S2-2H, Velkerri 76 S2- 3H and horizontal section of	3 E&A wells		
Number of stimulations	Velkerri 76 S2-1 suspended, vertical stimulation delayed	Stimulation of Velkerri 76 S2-2H, Velkerri 76 S2-3H	3 stimulations		Velkerri 76 S2-1 suspended,	Velkerri 76 S2-1H			
Number of water extraction/monitoring bores	Two existing bores: RN041133 (monitoring), RN041134 (production / monitoring) and 2 additional proposed	0	4	Number of stimulations	stimulation delayed until drilling of horizontal section of well and incorporated under ORI10-3 EMP	Stimulation of Velkerri 76 S2-1, Velkerri 76 S2-2H and Velkerri 76 S2-3H	3 stimulations		
Number of gravel pits approved under EMP	3	3	3		Two existing bores: RN041133 (monitoring), RN041134				
Operational workforce	~20 people during operations	70 people during drilling and stimulation activities 2-4 people during well testing	<70 people	Number of water extraction/monitoring bores	(production / monitoring), 2 additional bores and 2 contingent groundwater	0	6		
Main camp capacity	N/A camp decommissioned	70-person	70-person	11	extraction and monitoring bores.				
Drilling mini-camp	N/A camp decommissioned	8-person	8-person	Number of gravel pits approved	2	2	2		
Stages per well	20	20	N/A	under EMP	3	3	3		
Proppant use	1500t	180t -250t of proppant per stage per well	10,500 to 14,000t	Operational workforce	70 people during drilling and stimulation activities	70 people during drilling and stimulation activities	<70 people		
Water use and stormwater mana	gement				2-4 people during well testing	2-4 people during well testing			
	-			Main camp capacity	70-person	70-person	70-person		
Groundwater extraction licence	All take covered under existing W		110 M	Drilling mini-camp	<mark>8-person</mark>	8-person	8-person		
Estimated groundwater usage	N/A Eviating and incont basin	110 ML	110 ML	Stages per well	<mark>20</mark>	20	N/A		
Stormwater retention basin Wastewater management	Existing sediment basin	Existing sediment basin	Existing sediment basin	Proppant use	<mark>1,500t</mark>	180t -250t of proppant per stage per well	10,500 to 14,000t		
Flowback/wastewater volume generated on-site	1.8 ML ²	24 ML (12 ML/well)	24 ML (12 ML/well)	Water use and stormwater manage	gement All take covered under existing W	EL GRE 10285			

² Assumes a vertical 4 stage HFS

Interest holder	Tamboran B2 Pty Ltd	EMP Title		Sub-basin Multi-well Drilling, Stim on Permit (EP) 98 & 76 Environmer		Unique EMP ID	ORI10-3	Mod #	6	Date	25 September 2024
	Curren	t EMP text					Ar	nended EMP	text		
		Wet season: 26.5 ML (5 x	x 5.3ML		Estimated groundwater usage	38 ML		110	ML/well site	2	220 ML
		tanks)		Wet season: 26.5 ML	Stormwater retention basin	Existing sediment basin			ting sedimer		Existing sediment basin
Enclosed wastewater tank	N/A				Wastewater management						•
capacity		Dry season: 10.6 ML (2 x 5.3 ML tanks)		Dry season: 10.6 ML	Flowback/wastewater volume generated on-site	12 ML		24 N	/IL (12 ML/w	vell)	36 ML (12 ML/well)
		Wet season: 6.5 ML (5 x 5.3ML tanks)	,	Wet season: 6.5 ML	generated on-site					5 ML (5 x 5.3M	
Open treatment tank capacity	3.2 ML (1 x 3.2 ML tanks)	(0			Enclosed wastewater tank			tank	(S)		Wet season: 29.7 ML
(including freeboard)		Dry season: 34.4 ML (8 x tanks)	k 5.3ML	Dry season: 34.4 ML	capacity	2 x 3.2 ML:		-	season: 10.6 5.3 ML tanks		Dry season: 13.8 ML
Bunded tank pad containment capacity	10 ML	10 ML	10 ML					Wet	season: 6.5	ML	Wet season: 9.7 ML
Maximum flowback wastewater on-site	1.8 ^{Error!} Bookmark not defined.	14.91ML	14.91ML 14.91ML		Open treatment tank capacity (including freeboard)	<mark>2 x 3.2 ML</mark>		x c)	5.3ML tanks	2)	VVEL SEASUIT. 3.7 IVIL
Flowback/wastewater volume (final predicted for treatment	0.2ML	1ML	:	1ML				Dry : tank		1 ML (8 x 5.3ML	Dry season: 37.6 ML
and off-site disposal)	~3,000 m ³			3,000 m ³	Bunded tank pad containment capacity	10 ML		10 N	ΛL		10 ML
Sump capacity Total volume of drilling mud and cuttings generated	N/A	Use existing sump ~1,500m ³		~1,500 m ³	Maximum flowback wastewater on-site	5.12 ML		14.9	1ML		20.31 ML
Total volume of waste drilling and completion fluid per well	N/A	2 ML per well		4 ML	Flowback/wastewater volume (final predicted for treatment	0.5ML		1ML			1.5ML
Transfer pumps	6 x 6 inch: up to 23 ML/day	6 x 6 inch: up to 23 ML/d	day	6 x 6 inch: up to 23 ML/day	and off-site disposal)						-
Greenhouse gases and emissions					Sump capacity	<mark>∼3,000 m³</mark>		Use	existing sum	וף	3,000 m ³
Flares	Vertical and horizontal flare	Horizontal flare	•	Vertical and horizontal flare	Total volume of drilling mud and cuttings generated	<mark>1,500 m³</mark>		~1,5	00 m ³		~3,000 m ³
tCO ₂ -e emissions	N/A	70,229 to 130,852 tCO ₂ -6		70,229 to 130,852 tCO ₂ -e	Total volume of waste drilling and completion fluid per well	N/A		2 M	L per well		4 ML
	N/A	(Maximum 180 day well	test)	(Maximum 180 day well test)	Transfer pumps	6 x 6 inch: up	to 23 ML/day	6 x 6	inch: up to	23 ML/day	6 x 6 inch: up to 23 ML/day
		(Maximum 200 day weil)			Greenhouse gases and emissions						
					Flares	Vertical and I	norizontal flar	e Hori	zontal flare		Vertical and horizontal flare
					tCO ₂ -e emissions	<mark>32,169 to 76,</mark>	<mark>442 tCO₂-e</mark>	<mark>74,1</mark>	<mark>42 to 134,76</mark>	<mark>65 tCO₂-e</mark>	74,142 to 134,765 tCO ₂ -e
								(Ma	ximum 180 (day well test)	(Maximum 180 day well test)
3.2.3 Existing Velkerri 76 S2-1 explo	oration well				3.2.3 Existing Velkerri 76 S2-1 explo	oration well					
The existing Velkerri 76 S2-1 E&A w well was drilled into the Kalala mem					-	•		-		•	6 October 2021. The Velkerri 76 S2 we Ibgl). The well is currently suspended <mark>,</mark>
suspended, with a vertical HFS prop											2 <mark>026</mark> . A copy of the Velkerri 76 S2 well
					The continuation of the drilling of th	ne Velkerri 76 Si	2-1 exploratio	n well include	e <mark>s:</mark>		
					 Drilling of a horizontal we 	Il section up to	3,000 m in len	gth			
					 Hydraulic fracture stimula 			on well, with u	up to 20 stag	ges completed	
					Exploration well completion	_					
					 Completion of up to 12 months of well testing Storage and treatment of up to 12 ML of flowback onsite. 						
					 Storage and treat 	atment of up to	12 ML of flow	back onsite.			

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Multi-well Drilling, Stimu Exploration Permit (EP) 98 & 76 Environment		Unique EMP ID	ORI10-3	Mod #	6
	Current E	MP text				A	nended EM	IP text
Figure 12: Velkerri 76 52-1 we	View View Typical Stock Bore Statistical Contractions Typical Stock Bore Statistical Contractions Typical Stock Bore Statistical Contractions Statistical Contractions Statistical Contractions Marine Statistical Contractions Statistical	erri alon		-1600 metres	Protective Sta	Separation Disease rel Casing	pical Stock Bore	Undifference Anthony La Gum Ridg Antrim Pia Antrim Pia Ulla 55R Moroak 5 Wyworri
3.3 Groundwater bore install	ation			3.3 Groundwater bore installation				
existing control bores). Up to 3 1 new control monitoring bor the Velkerri 76 S2 site prior to testing EMP. The Amungee NW bores will b NW2 monitoring bore will be	3 additional groundwater monitoring/produce located at the Amungee NW2 site (refer the stimulation of the vertical well in 2022 ope installed on the proposed activity area (e	ither on the lease p the location of a fu	/ (three existing bores) and Velkerri 76 S2 sites (two be installed under this EMP at Amungee NW site and I groundwater monitoring bores will be installed on approved Velkerri 76 S2 drilling, stimulation and well bad, camp pad or laydown area). The new Amungee iture exploration site. The bores will target the Gum	Groundwater monitoring / extractions existing bores). Up to 3 additional groundwater more bore located at the Amungee NW2 pad, camp pad or laydown area). T future exploration site. The bores we Up to 4 additional groundwater more total of 6 monitoring/production be further 2 monitoring bores are to be addition, two contingent groundwas stimulation activities. The extractions unable to supply the full drilling and added to Tamboran's water Extract	nitoring/produ site (refer Tabl he new Amung rill target the G onitoring/prod ores on site, in e installed on t ter water extra n bores will or d stimulation c	ction bores are e 6). The Amur gee NW2 monit ium Ridge Forn uction bores w ncluding one c the Velkerri 76 action bore may ly be required ampaign due to	to be installe gee NW bor coring bore w nation, as th ill be installe ontor! bore S2 well pad y be drilled of where the e	ed under res will be will be in the Anthor ed on the and one to moni on the ex existing s

5	Date	25 September 2024
ng Bore onitoring Bore Undifferentiate Cretaceout I Lagon Formatio m Ridge Formatio	0	
rencloted Cretacrou J Lapon Formation Ridge Formation Platoau Volcanics Kyalia Formation ak Sandstone ak Sandstone Anuingee Member Member	/	
ungee NW	<mark>/ (three exis</mark>	ting bores) and Velkerri 76 S2 sites (two
l be install installed	ed on the pr in a lightly v	ee NW site and 1 new control monitoring oposed activity area (either on the lease egetated area which is the location of a is absent at the Amungee NW site.
ne impact onitoring in existing Vo g supply p	bore install npacts from elkerri 76 S2 oints (the in	I site prior to the stimulation, making a ed under the previous EMP (ORI5-4). A the drilling and stimulation activities. In well site prior to the commencement of npact and control monitoring bores) are et the Gum Ridge Formation and will be

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Multi-well Drilling, Stimu Exploration Permit (EP) 98 & 76 Environmen				Unique EMP ID	ORI10-3	Mod #
	Current	EMP text					1	Ame	nded EMP text
3.4 Civil construction activities There is no additional ground disturbanc	e or vegetation clearing propo	sed at Velkerri 76 S2 under	this EMP.		a based on the Velkerri 76 access trac	or vegetation clear	a) maintenance	(10.9 ha)	52 will not exce
3.8.1 Well design Indicative well sections for the proposed shown in Figure 16 and Figure 17.	wells at Amungee NW and Ve	lkerri 76 S2 are shown in Fig	gure 15 with a series of well schematics	 Indicat		ons for the <mark>2 addit</mark> es of well schemat			
3.12 Water supply and use					Vater supply a		CS SHOWH IN FI	gure 16 and Fi	gure 17.
The extraction of water for all activities a			extraction Licence (WEL) number GRF10285. Ar all its proposed exploration until December	The ex This ap	traction of wa	ter for all activities for an extraction o s 31 July 2034).			
to the WEL. It is estimated that 110ML of water per s S2 sites to support the proposed E&A act are estimates and subject to operational consists of the following breakdown per • 5ML per E&A well for drill • 40ML per well for stimular • 5ML for camp activities per	ingee NW. Any new bores con ite (220Ml total) will be extract ivities over two years. A water changes. The anticipated brea activity: ng (total 20ML) ion (total 160 ML) r site (total 10ML)	nstructed to support explora ted from the Gum Ridge For r balance for the activity is p akdown of groundwater take	ation activities will be registered and added rmation at the Amungee NW and Velkerri 76 provided in Table 19, noting that all estimates	It is est well sit estima	timated that 1 tes to support ates are estima ies consists of 5ML p 40ML 5ML f	10ML of water per the proposed E&A ates and subject to the following brea per E&A well for dr per well for stimu for camp activities civil construction,	activities over operational ch kdown per acti Iling (total 20N ation (total 16 per site (total 1	two years. A anges. The an vity: //L) 0 ML) 0ML)	water balance [,] ticipated break
3.18 Greenhouse gas emissions Table 25: Greenhouse gas summary for	he proposed activities on Vel	kerri 76 S2			Greenhouse ga 25: Greenhous	as emissions se gas summary fo	r the proposed	l activities on	Velkerri 76 S2
Activity Anticipated volume		istimate methodology and a	assumptions	Activ	/ity	Anticipated volume	90-days well test (tCO ₂ -e)	180-days	Estimate me
Velkerri 76 S2		Diesel estimated using foreca	asted usage estimates multiplied by NGERS	Velke	erri 76 S2				Diesel estim
Diesel Combustion - transport 118KL of diesel per well	e e fu 640 640 F	mission factor from NGER D missions of carbon dioxide, uels other than petroleum-b —emissions of carbon dioxi	Determination: Division 2.4.2 Method 1 methane and nitrous oxide from liquid based oils or greases, section 2.41 Method ide, methane and nitrous oxide and Part 3— Is and certain petroleum-based products for tem 40: ctor (GJ/kill) 38.6 CO2-e/ GJ of diesel D2-e/ GJ of diesel	Diese Com trans	bustion -	118KL of diesel p well	er <mark>960</mark>	<mark>960</mark>	emission fac emissions of other than p emissions of combustion- stationary en • En • CC • CH • N2

6	Date	25 September 2024
t		
eed the clea	aring limits s	et by the previous EMP (ORI10-3.5) of
itional well	s and 1 re-e	ntry well at Velkerri 76 S2 are shown in
		on Licence (WEL) number GRF10285. s <mark>proposed petroleum activities for the</mark>
for the acti	vity is provid	on at Amungee NW and Velkerri 76 S2 ded in Table 19, noting that all take for the proposed exploration
n, water cu	rtain and ge	neral activities per site (total 30ML)
ethodology	and assum	ptions
ctor from N f carbon did petroleum- f carbon did mergy purp mergy Conte D2 Factor 6 H4 Factor 0	GER Determ oxide, metha based oils or oxide, metha els and certa oses item 40 ent Factor (G 9.9 kgCO2-e .1 kgO2-e/ G	J/kill) 38.6 / GJ of diesel

Interest holder	Ider Tamboran B2 Pty Ltd EMP Beetaloo Sub-basin Multi-well Drilling, Stin Title Exploration Permit (EP) 98 & 76 Environment				ng Program	Unique EMP ID	ORI10-3	Mod #	6	Date	25 September 2024					
Current EMP text						Amended EMP text										
Diesel combustion – horizontal drilling	mbustion – 11,200KL of diesel per well per day 4,188 4,188 4,188 emissions of carbon dioxide, methane and nitrous oxide and Part 3— Fuel				Diesel combustion – horizontal drilling	11,200KL of dies per well per day	6 7 8 7	6,282	emissio emissio other th emissio combus stationa	Diesel estimated using forecasted drilling estimates multiplied by emission factor from NGER Determination: Division 2.4.2 Method emissions of carbon dioxide, methane and nitrous oxide from liqu other than petroleum-based oils or greases, section 2.41 Method emissions of carbon dioxide, methane and nitrous oxide and Part combustion—liquid fuels and certain petroleum-based products stationary energy purposes item 40: • Energy Content Factor (GJ/kill) 38.6 • CO2 Factor 69.9 kgCO2-e/ GJ of diesel • CH4 Factor 0.1 kgO2-e/ GJ of diesel • N2O Factor 0.2 kgCO2-e/ GJ of diesel • Diesel consumption estimated from historical data, assuming 270						
Diesel Combustion camps (drilling and stimulation)	0.5 KL per day	CH4 Factor 0.1 kgO2-e/ GJ of diesel N2O Factor 0.2 kgCO2-e/ GJ of diesel Diesel consumption estimated from historical data, assuming 270 days per CY and multiplied by NGERS emission factor from NGER Determination:					366	 per CY and multiplied by NGERS emission factor from NGER Determination: Division 2.4.2 Method 1 emissions of carbon dioxide, methane and nitrous oxide from liquid fuels other than petroleum-based oils or greases, section 2.41 Method 1—emissions of carbon dioxide, methan and nitrous oxide and Part 3—Fuel combustion— liquid fuels and o petroleum-based products for stationary energy purposes item 40 Energy Content Factor (GJ/kill) 38.6 CO2 Factor 69.9 kgCO2-e/ GJ of diesel CH4 Factor 0.1 kgO2-e/ GJ of diesel N2O Factor 0.2 kgCO2-e/ GJ of diesel 								
				 CO2 Factor 69.9 CH4 Factor 0.1 	Factor (GJ/kill) 38.6 9 kgCO2-e/ GJ of diesel kgO2-e/ GJ of diesel kgCO2-e/ GJ of diesel	Fugitive methane emissions – drill cuttings	0.906t of metha per well	ne <mark>38</mark>	<mark>38</mark>	Estimate by engineer based on gas saturation and core volume mu by NGERS Global Warming Potential (GWP) of 28 tCO2e/tCH4.						
Fugitive methane emissions – drill cuttings	0.906t of methane per well	25	25		ed on gas saturation and core volume multiplied g Potential (GWP) of 28 tCO2e/tCH4.	Fugitive emissions – completion (venting)	51.8t of methan per completion	e <mark>4,352</mark>	<mark>4,352</mark>	Table 5- the Oil a complet	2 completion days anticipated per well. Table 5-23 Compendium of Greenhouse Gas Emissions Methodologies the Oil and Gas Industry; American Petroleum Institute (API), 2009 NG completion factor of 25.9 tonnes of methane per day multiple by NG Global Warming Potential (GWP) of 25tCO ₂ e/tCH4					
Fugitive emissions – completion (venting)	51.8t of methane per completion	2901	2901	Table 5-23 Compendium for the Oil and Gas Indu NGERS completion factor NGERS Global Warming P	of Greenhouse Gas Emissions Methodologies stry; American Petroleum Institute (API), 2009 of 25.9 tonnes of methane per day multiple by otential (GWP) of 25tCO ₂ e/tCH4	Fugitive Emission	11.25ML of		104 104					L/ well was y of 30%). ns multiplie emission fa	tewater (assund the d by Table States actors – Com	umes 25 stages, 1.5ML per stage and a 5-10 produced saltwater tank methane apendium of Greenhouse Gas Emissions
Fugitive Emission wastewater	11.25ML of flowback per well	69	69	recovery of 30%). Emissions multiplied by flashing emission factors Methodologies for the	er (assumes 25 stages, 1.5ML per stage and a Table 5-10 produced saltwater tank methane – Compendium of Greenhouse Gas Emissions Oil and Gas Industry; American Petroleum	wastewater storage	flowback per we			Methodologies for the Oil and Gas Industry; American Petroleum I (API), 2009 emission factor of 0.11tCH4/ML (assuming 2% salinity separator pressure) multiplied by NGERS Global Warming Potentia of 28tCO2e/tCH4. Assumes 50% of injected flowback is returned to the surface.						
storage	0.3TJ per day of			salinity, 250 psi separator Potential (GWP) of 28tCO Assumes 50% of injected	hission factor of 0.11tCH4/ML (assuming 2% pressure) multiplied by NGERS Global Warming 2e/tCH4. flowback is returned to the surface. precasted P50 success case production rates	Well testing flared natural	•		,258 120,515	multipli explorat Method	ed by NGE tion and de 1—oil or ga	ER Determine evelopment (as exploration	ed P50 success case production rates ation: Subdivision 3.3.2.2—Oil or gas emissions that are flared) section 3.44 and development item 1: / t unprocessed gas			
Well testing	natural gas per vertical E&A well (5.27t CH4 per day)	60.250	120 515	multiplied by NGER De exploration and develop Method 1—oil or gas exp	termination: Subdivision 3.3.2.2—Oil or gas ment (emissions that are flared) section 3.44 loration and development item 1: tCO2-e/t unprocessed gas	gas emissions	5 TJ per day of natural gas per horizontal E&A well (175.57t CH per day)	60,258		•	CH4 Facto	or 0.933 tCO2	-e/ t unprocessed gas -e/ t unprocessed gas -e/ t unprocessed gas			
flared natural gas emissions	5 TJ per day of natural gas per horizontal E&A well (175.57t CH4 per day)	60,258	120,515	CH4 Factor 0.93 N2O Factor 0.02	3 tCO2-e/ t unprocessed gas 26 tCO2-e/ t unprocessed gas	Well testing stationary sources	500L per day	366	732	per CY a Determ Division nitrous	nd multiplie ination: 2.4.2 Meth oxide from l	ed by NGERS od 1 emissior iquid fuels ot	om historical data, assuming 270 days emission factor from NGER ns of carbon dioxide, methane and her than petroleum-based oils or			
Well testing stationary sources	500L per day	366	732	-	nated from historical data, assuming 270 days NGERS emission factor from NGER	(diesel combustion)				and nitr	ous oxide ai um-based pi	nd Part 3—Fu	-emissions of carbon dioxide, methane el combustion— liquid fuels and certain ationary energy purposes item 40: (GL/kill) 38.6			

(diesel combustion)		Curre	nitrous oxide from liquid fu greases, section 2.41 Metho	nissions of carbon dioxide, methane and										
			nitrous oxide from liquid fu greases, section 2.41 Metho	-			Amended EMP text							
				els other than petroleum-based oils or od 1—emissions of carbon dioxide, methane	CH4 Factor 0.1 kgO2-e/						GJ of diesel			
			certain petroleum-based pu 40: Energy Content Fi CO2 Factor 69.9 k CH4 Factor 0.1 kg N20 Factor 0.2 kg Diesel consumption estima per CY and multiplied by NO Determination: Division 2.4.2 Method 1 em	gCO2-e/ GJ of diesel ted from historical data, assuming 270 days GERS emission factor from NGER hissions of carbon dioxide, methane and	Well stimulation – stationary sources		1,416	1,416	per CY an Determin Division 2 nitrous o greases, s and nitro petroleur •	nd multiplied nation: 2.4.2 Methoc xide from liq section 2.41 ous oxide and m-based pro Energy Cont CO2 Factor CH4 Factor	by NGERS e 1 emission uid fuels otl Method 1— Part 3—Fu ducts for sta tent Factor (69.9 kgCO2- 0.1 kgO2-e/			
Well stimulation				els other than petroleum-based oils or od 1—emissions of carbon dioxide, methane	TOTAL		74,142	134,765	•	N20 Factor	0.2 kgCO2-6	e/ GJ of diesel		
- stationary sources TOTAL	1,416 70,229	1,416 130,852	certain petroleum-based pr 40: • Energy Content F • CO2 Factor 69.9 k • CH4 Factor 0.1 kg	3—Fuel combustion— liquid fuels and roducts for stationary energy purposes item actor (GJ/kill) 38.6 (gCO2-e/ GJ of diesel (gCO2-e/ GJ of diesel gCO2-e/ GJ of diesel										
7.5 Rehabilitation Plan		,		I	7.5 Rehabilitation Pl	lan								
Once a determination has been made to decommission an asset, a site-specific rehabilitation strategy will be developed for each disturbed area in consultation with DEPWS. A specific strategy for each area is required to ensure the operational history of the site is considered during rehabilitation planning (such as spills etc.). As per the Code of Practice, rehabilitation will commence within 12 months of determining an asset is no longer required.						in consultation with DEPWS. A specific strategy for each area is required to ensure the operational history of the site is considered durin rehabilitation planning (such as spills etc.). As per the Code of Practice, rehabilitation will commence within 12 months of determining an asset no longer required.								
Each petroleum well will be plugged and decommissioned in accordance with the Petroleum Codes of Practice. All tanks, surface infrastructure and wastes will be removed from site and disposed of in accordance with the Waste Management and Pollution Control Act 1998. All remaining assets with a residual beneficial use (such as water bores, laydown yards, gates, fences, fresh water tanks etc.) will be offered for					and wastes will be removed from site and disposed of in accordance with the Waste Management and Pollution Control Act 1998. All remaining assets with a residual beneficial use (such as water bores, laydown yards, gates, fences, fresh water tanks etc.) will be offered for									
ranster to the pastoralist, subject to E Drigin will:	EPWS approval	and complian	ce with the Code of Practice.	Prior to considering the transfer of ownership,	Tamboran will:	oralist, subject to DE	PWS approva	l and compli	ance with the	e Code of Pra	actice. Prior	to considering the transfer of ownership		
 undertake an assessment of the current status of the asset and whether it can be beneficially used by the local pastoralist. Where a beneficial use is anticipated, identify works required to be undertaken to ready the asset for transfer (i.e. any repairs, site remediation, equipment removal etc.) obtain written agreement from the pastoralist to take ownership of the asset and document any stipulated liabilities. 						 undertake an assessment of the status of the asset and whether it can be beneficially used by the local pastoralist. Where a beneficial use is anticipated, identify works required to be undertaken to ready the asset for transfer (i.e. any repairs, site remediation, equipment removal etc.) obtain written agreement from the pastoralist to take ownership of the asset and document any stipulated liabilities. 								
Where an asset cannot be beneficially utilised, the site will be rehabilitated to the pre-existing condition using assisted natural regeneration. This will include:						Where an asset cannot be beneficially utilised, the site will be rehabilitated to the pre-existing condition using assisted natural regeneration. This will include:								
 Removal of all surface facilities Removal of all weeds and contaminated materials/wastes Re-spreading of stockpiled topsoil Backfilling of all open sumps Reshaping the site to as close to natural form as possible Ripping or scarifying any compacted surface Spreading of stockpiled vegetation to aid in surface water flow control Spreading seed of suitable local native species which has been determined through analogue sites representative surrounding vegetation communities Any native seed supply and rehabilitation services will be sourced using Indigenous suppliers (where available). Yearly monitoring of the rehabilitation success requirements to assess the rehabilitation status of a site and determine where 						 Removal of all surface facilities Removal of all weeds and contaminated materials/wastes Re-spreading of stockpiled topsoil Backfilling of all open sumps Reshaping the site to as close to natural form as possible Ripping or scarifying any compacted surface Spreading of stockpiled vegetation to aid in surface water flow control Spreading seed of suitable local native species which has been determined through analogue sites representative surrounding vegetation communities Any native seed supply and rehabilitation services will be sourced using Indigenous suppliers (where available). Yearly monitoring of the rehabilitation success requirements to assess the rehabilitation status of a site and determine where 						(where available).		

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Multi-well Drilling, Stimu Exploration Permit (EP) 98 & 76 Environment	Unique EMP ID	ORI10-3	Mod #	e	
	Current EMP	' text				Am	ended EMP to	xt
	Stimulation and Well Testing Prop		II be conducted in accordance with this EMP, -MP-032) and the Beetaloo Basin Velkerri 76	The rehabilitation plan for Amungee I	NW and Velkerr	i 76 S2 is prov	ided in Apper	di

All other appendices are consistent with the Beetaloo Multi-well EMP (ORI10-3), including the Appendix H ESCP and Appendix O Rehabilitation Plan recently updated as part of ORI10-3.5 regulation 22.

6	Date	25 September 2024
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