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MITSUI E&P
Australia

WAITSIA STAGE 1 EXPANSION PROJECT: WAITSIA GAS EXPORT PIPELINE CONSTRUCTION ENVIRONMENT PLAN SUMMARY

REVISION DETAILS				
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17/10/2019	0	Issued for DMIRS Assessment	MC/AF	HF/AM
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TERMS, ABBREVIATIONS AND DEFINITIONS

Term or abbreviation	Definition
ALARP	As low as reasonably practicable
AWE	AWE Perth Pty Ltd
CO ₂	Carbon dioxide
DBNGP	Dampier Bunbury Natural Gas Pipeline
DMIRS	(WA) Department of Mines, Industry Regulation and Safety
EP	Environment Plan
GDE	Groundwater Dependent Ecosystem
HSE	Health, safety and environment
HSEMS	Health, Safety and Environment Management System
km	Kilometre
MEPAU	Mitsui E&P Australia
NDT	Non-destructive testing
PGP	Parmelia Gas/ Pipeline
PP(E)R	(WA) Petroleum Pipelines (Environment) Regulations 2012
Q1, Q2, Q3	Quarter 1, Quarter 2, Quarter 3
ROW	Right of Way
TJ/day	Terajoules per day
WA	Western Australia
Waitsia Stage 1	Waitsia Gas Project Stage 1
WGEP	Waitsia Gas Export Pipeline
WS1E	Waitsia Stage 1 Expansion (Project)
XPF	Xyris Production Facility
YMAC	Yamatji Marlpa Aboriginal Corporation

1.0 INTRODUCTION

1.1 Background

AWE Perth Pty Ltd (AWE) is the project proponent for the Waitsia Stage 1 Expansion (WS1E) Project. AWE and Mitsui E&P Australia Pty Ltd are wholly owned subsidiaries of Mitsui & Co. Ltd., and combined they form the unified brand Mitsui E&P Australia (MEPAU).

MEPAU is the Operator of the Waitsia gas field within the onshore North Perth Basin located within the Shire of Irwin, approximately 20 km southeast of Dongara and approximately 350 km north of Perth. The Waitsia gas field occurs within the Geraldton Sandplains bioregion of Western Australia (WA) in predominantly cleared agricultural land.

The Waitsia gas field is the largest conventional onshore Australian gas discovery in over 40 years. The Waitsia Gas Project Stage 1 (Waitsia Stage 1) was commissioned in 2016 and has achieved an output of approximately 10 TJ/day. Waitsia Stage 1 comprised gas flows from the Waitsia-01 and Senecio-03 wells to the Xyris Production Facility (XPF), delivering gas to consumers through the Parmelia Gas Pipeline (PGP).

The Waitsia Stage 1 Expansion (WS1E) Project will increase the capacity of the XPF to deliver up to 30 TJ/day and re-direct export gas from the Parmelia Gas Pipeline (PGP) to the Dampier to Bunbury Natural Gas Pipeline (DBNGP), enabling MEPAU (as the Operator) to continue producing from two existing wellheads, Senecio-03 and Waitsia-01, as well as allow other Waitsia wells (i.e. Waitsia-02) to be tied-in to the XPF.

The WS1E Project comprises upgrades to existing equipment and installation of new infrastructure including:

- Upgrade and install new infrastructure within the XPF to increase production capacity to 30 TJ/day,
- Connecting a previously drilled well (the Waitsia-02 appraisal well) to the XPF to commence extended production testing,
- Evaporation pond construction, and
- Construction of the Waitsia Gas Export Pipeline (WGEP) and compound to connect the XPF to the DBNGP.

These activities are located entirely within Pipeline Licence PL 124 and Petroleum Title – Production Licence L1 (Figure 1-1). The scope of this Environment Plan (EP) covers the construction of the WGEP (and associated activities), located within Pipeline Licence PL 124, with a separate EP covering the remaining WS1E Project activities scope.

Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary

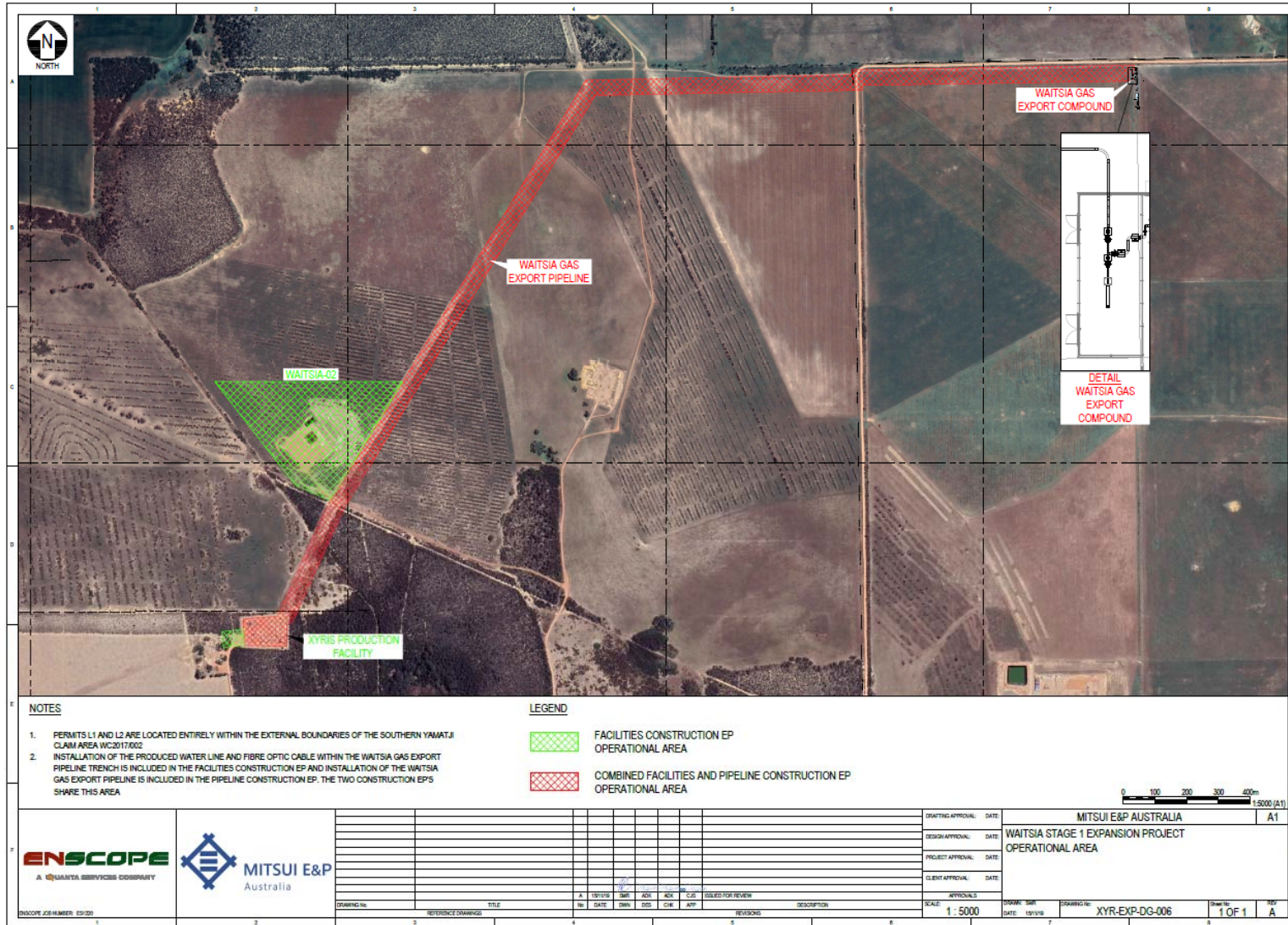


Figure 1-1: Location of WS1E Operational Area

1.2 Purpose

The EP and this EP Summary have been prepared to meet the requirements of the:

- *Petroleum Pipelines (Environment) Regulations 2012.*

Guidance on the EP development was provided by the Department of Mines, Industry Regulation and Safety (DMIRS) 'Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia' and the 'Guidance Note – Environmental Performance Objectives, Environmental Performance Standards and Measurement Criteria for Petroleum Environment Plans'.

1.3 Nominated Contact Details

In accordance with the PP(E)R, contact details for notification of MEPAU as the Operator are included in Table 1-1.

Table 1-1: Nominated Contact Details

Contact Details	
Name	Steve McCracken – AWE Perth Pty Ltd
Address	Level 11 Exchange Tower, 2 The Esplanade, Perth WA 6000
Telephone number	08 6364 4777
Email address	enquiry@mepau.com.au

2.0 DESCRIPTION OF THE ACTIVITY

This EP includes all activities associated with the construction of the WGEP, which will connect the XPF to the DBNGP via the new Waitsia Gas Export compound.

2.1 Timeframe and Schedule

MEPAU plan to commence the activities covered in the EP in Q1 2020. Based upon estimated work schedules, this work is planned to be completed in Q2/Q3 2020.

All activities covered in this EP will be undertaken during daylight hours.

Night time work will be limited to low noise generating activities that are best carried out when there is minimum personnel present at the worksite (for safety and interface considerations for simultaneous works which require personnel exclusion zones). These tasks are sporadic in nature and linked to completion of other activities, thus will occur, as required, over the course of the construction period.

2.2 Activity Description

The activities covered by the EP associated with the WS1E Project include:

- Civil works,
- Pipeline construction and installation,
- Construction of a fenced compound (Waitsia Gas Export compound), and
- Hydrotesting.

Table 2-1 provides a summary of the types of activities that will be undertaken under the EP.

Table 2-1: EP Activities Summary

Activity	Summary
Civil works	<ul style="list-style-type: none"> • The WGEP alignment will be surveyed and the limits of the pipeline Right of Way (ROW) and any foreign services clearly delineated, • Vegetation clearing, subsoil and topsoil stripping, and stockpiling within the ROW, • Trenching along entire pipeline alignment with spoil material stockpiled within ROW, • Bedding, padding or additional reinforcement will be undertaken where required, and • Following installation of the WGEP , the trench will be backfilled, compacted and the topsoil reinstated.
Pipeline construction and installation	<ul style="list-style-type: none"> • Stringing of pipe sections along the ROW alignment, • Joining (welding) of pipe sections, • Joint/weld testing (i.e. non-destructive testing [NDT]), • Pipeline coating, • Grit blasting, and • Placement of pipe into the excavated trench.
Construction of a fenced compound	<ul style="list-style-type: none"> • Civil earthworks and above ground electrical and instrumentation works,

Activity	Summary
	<ul style="list-style-type: none"> • Installation of cattle fencing, • Below ground/above ground transition of pipeline from AGIG to the compound, • All above ground concrete, structural and piping, and • All electrical and instrumentation works.
Hydrotesting	<ul style="list-style-type: none"> • Hydrostatic testing of the WGEP will be undertaken using potable town scheme water sourced from the Dongara stand pipe., with the waste hydrotest water discharged to grade.
Site Re-instatement	<ul style="list-style-type: none"> • Following completion of construction activities, the site will be rehabilitated and restored as far as practicable to its original condition (in consultation with various landowners).

2.2.1 Operational Area

The WS1E Operational Area (Operational Area) is defined in (Figure 1-1). The Operational Area has been defined as the indicative area in which WS1E activities will be undertaken. The pipeline route is surrounded by agricultural farmland (see (Figure 3-2)).

The coordinates for the Operational Area are provided in Table 2-2.

Table 2-2: Operational Area Coordinates (GDA94, MGA Zone 50)

Easting (m)	Northing (m)
314601.459	6756468.064
314670.399	6756476.229
314668.799	6756509.074
314777.514	6756516.533
314785.058	6756533.153
314897.834	6756781.606
314916.622	6756822.998
314934.974	6756863.429
314942.467	6756880.118
314834.699	6756928.482
314579.808	6757256.678
315171.612	6757256.678
315748.007	6758203.881
316588.113	6758221.415
316587.875	6758236.576
316617.871	6758237.052
317433.647	6758250.013
317473.647	6758250.649
317474.24	6758200.653

Easting (m)	Northing (m)
317434.241	6758200.017
316618.657	6758187.059
316618.893	6758172.047
316588.899	6758171.421
315776.609	6758154.467
314988.442	6756859.486
314980.591	6756842.957
314951.277	6756778.377
314932.49	6756736.985
314840.082	6756533.403
314823.867	6756497.68
314807.016	6756489.724
314806.272	6756422.395
314738.616	6756422.147
314672.887	6756426.391
314607.386	6756418.55

3.0 DESCRIPTION OF THE ENVIRONMENT

A summary of the environment within proximity of the proposed activities is included in Table 3-1, with sensitivities shown in Figure 3-1 and Figure 3-2.

Table 3-1: Summary of the Existing Environment within the Operational Area

Feature	Summary
Climate	Windy region with hot dry summers and mild wet winters.
Soil	Geotechnical and soil assessment conducted within proximity of the Operational Area verified that the soils area comprised almost entirely of quartz sand.
Surface Water	Surface waters adjacent to the activities includes Ejarno Spring.
Groundwater	Depth to groundwater is in the order of 8.4 m. Ejarno Spring is a surface expression of groundwater.
Acid Sulphate Soils	Located within an area where acid sulphate soils are not known to occur.
Conservation Areas	None within the Operational Area (Figure 3-1).
Environmentally Sensitive Areas (ESAs)	None within the Operational Area (Figure 3-1).
Groundwater Dependent Ecosystems	None within the Operational Area. Ejarno Spring (adjacent to the Operational Area) is a GDE (Figure 3-1).
Vegetation Communities and Flora	Vegetation communities are well represented; two priority listed flora species present.
Weeds	Surveys recorded the presence of 21 species of introduced flora within the vicinity of the Operational Area.
Dieback	Not known to occur and unlikely to occur due to calcareous soils.
Fauna	Naturebase records indicate 73 vertebrate fauna species potentially occur in proximity of the Operational Area, however, none of these were considered as conservation significant.
Aboriginal Heritage	No registered heritage sites and no new sites expected based upon recent site assessment surveys.
European Heritage	None within the Operational Area.
Socio-economic Environment	Socio-economic environment predominantly consists of agriculture and the petroleum industry (Figure 3-2).

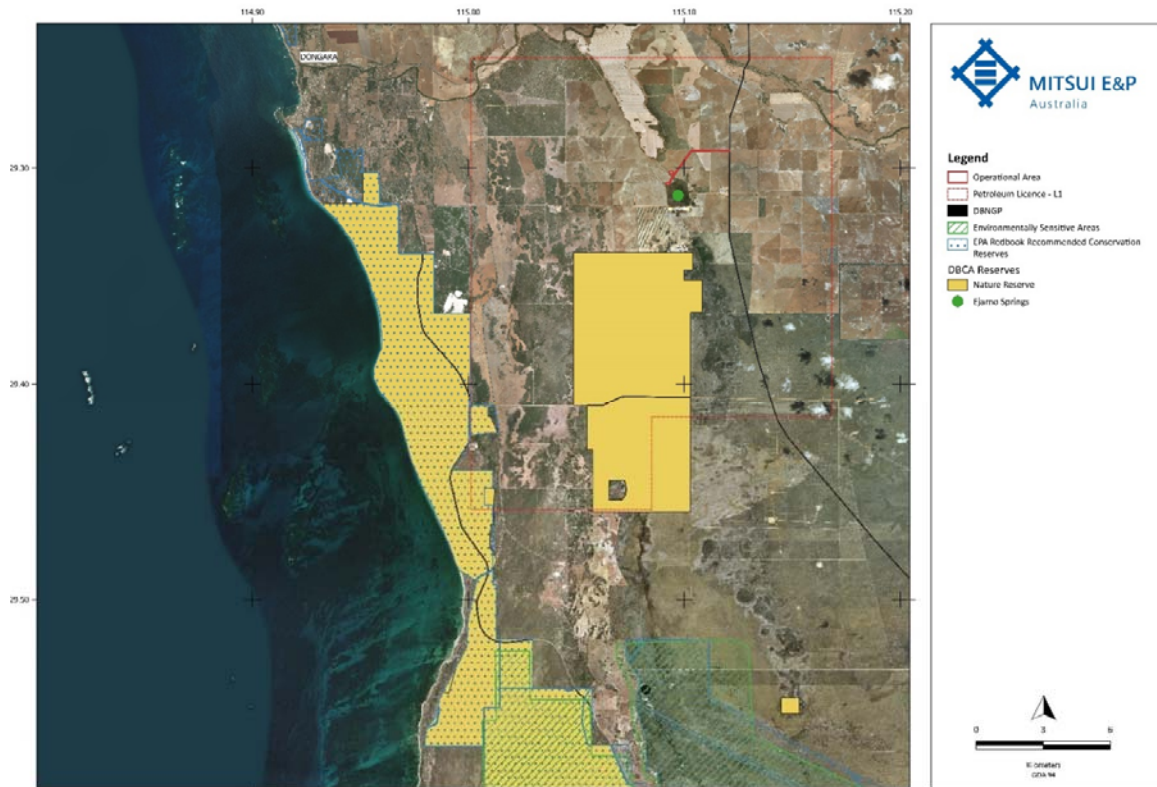


Figure 3-1: Conservation Significant Areas

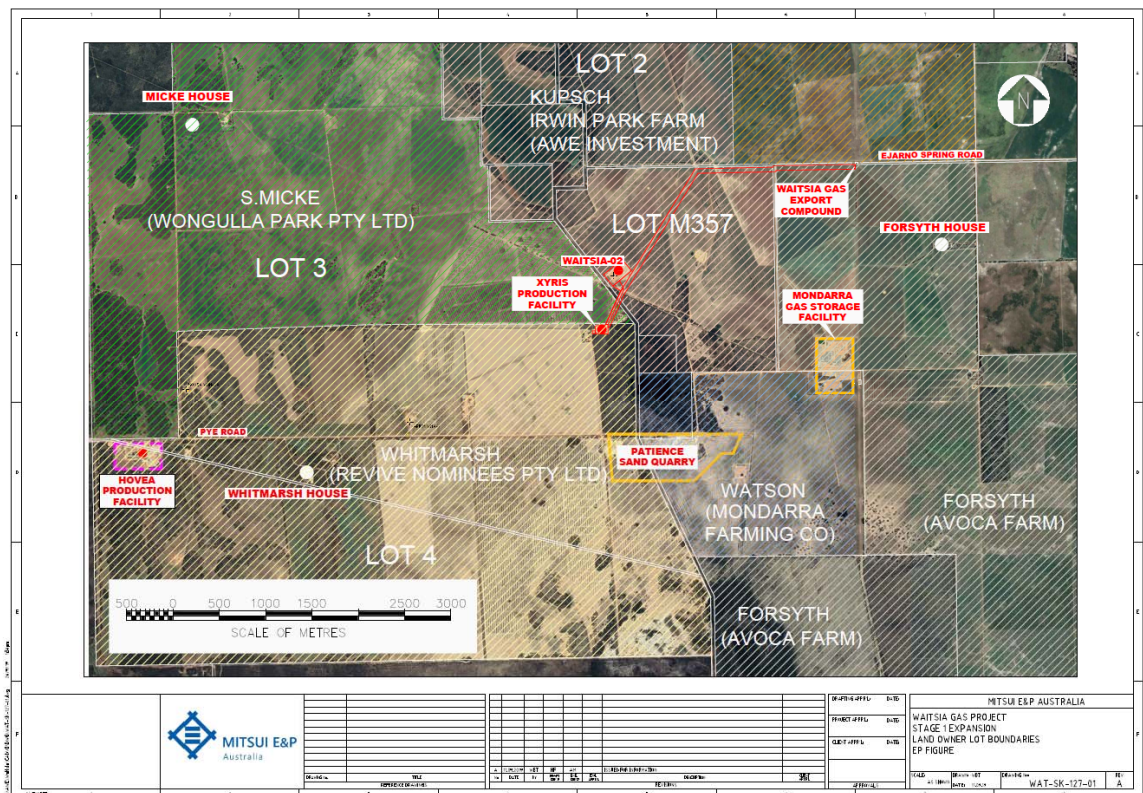


Figure 3-2: Land-use adjacent to the Operational Area

4.0 ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT

Risk assessments have been undertaken for the WS1E Project and included Project Management, Engineering and HSE Representatives. Aspects and their associated hazards and management and mitigation measures are summarised in Table 4-1.

Table 4-1: Risk Assessment Outcome Summary

Aspect	Hazard	Management and Mitigation Measures
Ground and Vegetation Disturbance	<ul style="list-style-type: none"> • Spread of non-indigenous species (weeds, pathogens etc.) • Introduction of new weed of national significance or dieback • Dust generation causing impacts to local landowners • Damage to heritage sites / artefacts • Unplanned disturbance to vegetation and fauna habitat • Damage to soil profile (including compaction from stockpiling equipment and use of heavy machinery) • Erosion of stockpiled soil (surface water run-off and wind) - Loss of topsoil 	<ul style="list-style-type: none"> • Equipment Acceptance Inspection • Weed Hygiene Inspection • Restricted site access • Reduced speed limits • Native Vegetation Clearing Plan • Area Work Clearance Forms • Excavation Authorisation Certificate • Permit to Work • Soil Management requirements • Photographic monitoring conducted pre and post-construction • Construction fill verified as having low weed / dieback risk • Complaints management system • Heritage artefact identification requirements
Fire	<ul style="list-style-type: none"> • Habitat and vegetation loss, fauna injury/fatality, or contamination (e.g. in the event petroleum facilities are damaged) 	<ul style="list-style-type: none"> • Area Work Clearance Forms • Permit to Work • Hot-works guards • Additional fire-fighting equipment • Electrical equipment testing and tagging • Department of Fire and Emergency Services exemptions • MEPAU's Perth Basin Operations Emergency Response Plan • Subscription to local fire notification service
Air Emissions	<ul style="list-style-type: none"> • Disturbance to sensitive fauna or impacts to local landowners 	<ul style="list-style-type: none"> • Emissions are monitored and reported

Aspect	Hazard	Management and Mitigation Measures
		<ul style="list-style-type: none"> • National Pollutant Inventory reporting • National Greenhouse and Energy Reporting • Complaints Management System
Noise and Vibration Emissions	<ul style="list-style-type: none"> • Disturbance to sensitive fauna or impacts to local landowners 	<ul style="list-style-type: none"> • Complaints Management System • Restricted operational hours
Physical Interaction with Fauna	<ul style="list-style-type: none"> • Death or injury to fauna (from entrapment) • Death or injury to fauna (from vehicle strike) 	<ul style="list-style-type: none"> • Area Work Clearance Forms • Excavation Authorisation Certificate • Fauna Management requirements • Pipes to be capped • Reduced speed limits
Physical Presence – Community Disruption	<ul style="list-style-type: none"> • Community disruption due to increased traffic / disruption 	<ul style="list-style-type: none"> • Shire approvals • Ongoing consultation • Complaints Management System
Planned Discharge – Hydrotest Fluid	<ul style="list-style-type: none"> • Erosion from surface run-off causing adverse effects on native vegetation 	<ul style="list-style-type: none"> • Hydrostatic Test Procedure • Swabbing of the pipeline prior to hydrotesting • Planned discharges are monitored and reported
Accidental Release – General Waste	<ul style="list-style-type: none"> • Environmental pollution and fauna injury or death (from ingestion) 	<ul style="list-style-type: none"> • Waste Management Plan • Environmental Protection (Abrasive Blasting) Regulations 1998
Accidental Release – Hydrocarbon/Chemical Handling, Storage and Use	<ul style="list-style-type: none"> • Contamination of soil / groundwater (from a large spill event) • Contamination of soil / groundwater (from a small spill event) 	<ul style="list-style-type: none"> • Travel Management Plan • Daily equipment inspection • On-site vehicle / equipment refuelling requirements • Secondary containment requirements for storing hydrocarbons, chemical and hazardous liquid materials • No bulk storage of hydrocarbons or hazardous materials within the ROW • Perth Basin Surveillance Sampling Program

Aspect	Hazard	Management and Mitigation Measures
		<ul style="list-style-type: none">• WS1E Project WGEP Construction Oil Spill Contingency Plan• MEPAU's Perth Basin Operations Emergency Response Plan

5.0 IMPLEMENTATION STRATEGY

To meet the requirements of Regulation 15(1) of the PP(E)R, the EP describes the systems, practices, and procedures used to ensure that the environmental impacts and risks of the activities are continuously reduced to As low as reasonably practicable (ALARP), and the environmental performance objectives and standards detailed in the EP are achieved.

5.1 Management System Overview

5.1.1 Documentation Hierarchy

MEPAU’s Health, Safety and Environment Management System (HSEMS) is hierarchal in nature, with the key levels of documentation shown below in Figure 5-1.



Figure 5-1: HSEMS Documentation Hierarchy

The HSEMS establishes clear guidelines for personnel involved in this activity to achieve and maintain the standards set out in the EP.

5.1.2 Corporate HSE Elements

The 15 HSE Elements are listed in Table 5-1, and those that are relevant to the manner in which the EP is implemented are identified.

Table 5-1: HSE Elements

HSE Element Number	Element Name	Relevant to support environmental management of this Activity
1	Leadership and Responsibility	<input checked="" type="checkbox"/>
2	Hazard Identification and Risk Management	<input checked="" type="checkbox"/>
3	Compliance	<input checked="" type="checkbox"/>
4	Workforce Training and Competency	<input checked="" type="checkbox"/>
5	Workforce Involvement and Stakeholder Engagement	<input checked="" type="checkbox"/>
6	Design, Construction, Commissioning and Decommissioning	<input type="checkbox"/>
7	Operations Management	<input type="checkbox"/>
8	Asset Integrity Management	<input type="checkbox"/>
9	Management of Contractors and Materials	<input checked="" type="checkbox"/>
10	Occupational Health and Wellbeing	<input type="checkbox"/>
11	Management of Change	<input checked="" type="checkbox"/>
12	Incident Reporting and Investigation	<input checked="" type="checkbox"/>
13	Emergency Preparedness and Response	<input checked="" type="checkbox"/>
14	Information Management and Document Control	<input checked="" type="checkbox"/>
15	Audit, Assessment and Review	<input checked="" type="checkbox"/>

5.2 Environment Plan Review

Regulation 18 of the PP(E)R requires that MEPAU submit a proposed revision of the accepted EP:

- Before the commencement of a new activity, or any significant modification, change of a new stage of an existing activity; and
- Before, or as soon as practicable after, the occurrence of any significant new environmental impact or risk, or significant increase in an existing environmental impact or risk which occurred or is to occur.

Additionally, Regulation 20 of PP(E)R requires that MEPAU submit a proposed revision of this EP five years from the date when the EP is accepted by the Minister, however noting the scope of the EP, it is expected to be closed prior to requiring a 5-year review.

6.0 CONSULTATION

MEPAU are committed to stakeholder engagement and their commitment is documented in their Stakeholder Engagement Plan [CP-PM-039] which includes:

- Identification and analysis of stakeholder groups,
- Adopted method of communication with each stakeholder group,
- Determination of the type of information that is required to be communicated and when,
- Confirmation of the MEPAU resource that is responsible for implementing the commitments outlined in the EP,
- Reporting responsibilities and relationships during communication and consultation processes,
- A list of contacts and the contact details for all key stakeholders,
- A calendar of activities (including how, when, to and by whom communications and consultations will occur), and
- A point of reference for the specific obligations, commitments and requirements relating to those stakeholders, including those defined within resource consents and third-party agreements.

In accordance with Regulation 17 of PP(E)R, MEPAU completed a scoping exercise to determine which authorities, persons and organisations were relevant for the activities covered under the EP. As the assets are in regional areas and distant from any town sites, the following stakeholders were identified and include:

- Landowners of the properties where the assets are located, and adjacent to them,
- Local government (Shire of Irwin), and
- Southern Yamatji (Traditional Landowners).

Table 6-1 provides a summary of the most recent consultation undertaken specific to activities covered under the EP. No objections or claims have been raised relevant to the activities covered in the EP.

Table 6-1: Stakeholder Consultation Undertaken

Stakeholder	Date	Summary of Consultation	Objections / claims raised	MEPAU response	Close out of Issues (if any)
DFES	07 October 10 October	Discussion with DFES regarding hot works exemptions	No objections to the project have been raised on the assertion that exemptions are in place and conditions followed.	Requirement to have an exemption in place is included in Section 5.2. The exemption was received on the 10 th October.	N/a
DMIRS	Engagements with various branch's.	Discussion of approval requirements (Pipeline licence, EP and SMS)	No objections to the project have been raised	None required	N/a
Shire of Irwin	Various engagements from August 2019	Notified regarding the Pipeline Licence Application and advice sought regarding the pipeline road crossings. No Development Applications required.	No objections or concerns were raised	None required	N/A
Traditional Owners – Southern Yamatji through the Yamatji Marlpa Aboriginal Corporation (YMAC)	Various engagements over August - October 2019	Heritage survey liaison	No objections or concerns were raised	None required	N/A
Southern Yamatji Working Group and MEPAU	Meeting (informal) 7 February 2019 - Senior representatives	Activities update including Waitsia Gas Project. Key area of interest was potential training and employment opportunities arising from future projects.	No objections or concerns were raised	None required	N/A
A. Whitmarsh (Revive Nominees Pty Ltd)	Various engagements throughout 2019	Meetings to discuss Project activities and timing. Access area for pipeline construction is already fenced off, and will not affect farming activities.	No objections raised.	No specific response required, will continue consulting during pipeline installation activities.	N/A

Stakeholder	Date	Summary of Consultation	Objections / claims raised	MEPAU response	Close out of Issues (if any)
		Also notified regarding the Pipeline Licence application.			
S. Micke (Wongulla Park Pty Ltd)	Various engagements throughout 2019	Meetings to discuss Project activities and timing. Access area for pipeline construction is already fenced off, and will not affect farming activities. Also notified regarding the Pipeline Licence application.	No objections raised.	No specific response required, will continue consulting during pipeline installation activities.	N/A
C. Forsyth (Avoca Farm)	Various engagements throughout 2019	Discussed fencing of the compound adjacent to the DBNGP, discharge of the hydrotest water onto farmland, and timing for pipeline construction. Also notified regarding the Pipeline Licence application and heritage site survey.	Support for all, particularly for hydrotest water to be discharged to farmland.	No specific response required, will continue consulting during pipeline installation activities.	N/A
Irwin Park Farm lessee (AWE), P. Kupsch (Tara Farming)	Various engagements throughout 2019	Discussed the depth of the pipeline required to allow for deep-ripping farming activities, fencing of cattle options during pipeline construction period. Also notified regarding the Pipeline Licence application and heritage site survey.	No issues raised. Was the same landowner of the PL 111 pipeline installation and is aware of pipeline construction activities.	No specific response required, will continue consulting during pipeline installation activities.	N/A