DECISION NOTIFICATION FORM
CROWN DEVELOPMENT

Section 130 (18) of the *Planning, Development and Infrastructure Act 2016*

TO THE APPLICANT:

Name:	Australian Naval Infrastructure and ElectraNet
Email:	brett.pendlebury@ani.com.au

IN REGARD TO:

Development application: 26016431	Lodged on: 15 July 2026
Alterations and extension to the Pelican Point Substation; construction of a new substation east of Lefevre Substation; relocation and undergrounding of 275kV electricity transmission lines; and tree damaging activity	

LOCATION OF PROPOSED DEVELOPMENT:

Location reference: 756 Mersey Rd N Osborne		
Plan Parcel: D12984 AL503	Title Ref: CT 6231/637	Council: City of Port Adelaide Enfield
Location reference: 762-776 Mersey Rd N Osborne		
Plan Parcel: D121984 AL506	Title Ref: CT 6231/3	Council: City of Port Adelaide Enfield
Location reference: 778 Mersey Rd N Osborne		
Plan Parcel: D76309 AL22	Title Ref: CR 6011/467	Council: City of Port Adelaide Enfield
Location reference: Lot 3003 Mersey Rd N Osborne		
Plan Parcel: D136949 AL3003	Title Ref: CT 6316/815	Council: City of Port Adelaide Enfield
Location reference: Lot 28 Pelican Point Rd Outer Harbor		
Plan Parcel: D52266 AL28	Title Ref: CT 6322/501	Council: City of Port Adelaide Enfield
Location reference: Lot 28 Pelican Point Rd Outer Harbor		
Plan Parcel: D52266 AL29	Title Ref: CT 6322/502	Council: City of Port Adelaide Enfield

DECISION:

Decision type	Decision	Decision date	Conditions	Decision Authority
Development Approval	GRANTED	23/10/2026	25	Minister for Planning

Building works may commence only when an Accredited Professional issues a Certificate of Compliance with the Building Rules, subject to any conditions imposed by the Minister for Planning (or delegate) and the Accredited Professional.

Hon Nick Champion MP
MINISTER FOR PLANNING

Date: 23/10/2026

CONDITIONS OF DEVELOPMENT APPROVAL:

Condition 1
The development granted Development Approval shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below.

Condition 2
Prior to the commencement of construction, an Accredited Professional shall complete and provide a Certificate of Compliance with the Building Rules (including plans and specifications relating to this certification) and upload this documentation to the SA Planning Portal. All building work remains subject to any conditions imposed by the Minister for Planning (or delegate) and the Accredited Professional. Certification can be submitted in stages.

Condition 3
Prior to the commencement of construction of the Lefevre East substation, a final Stormwater Management Plan shall be prepared in consultation with the local Council and Coast Protection Board and submitted to, and approved by, the Minister for Planning.

The details of the plan shall be incorporated within the detailed design and building certification documentation and be implemented prior to commissioning of the substation.

Condition 4
All stormwater design and construction shall be in accordance with Australian Standards and recognised engineering practice to ensure that stormwater does not adversely affect any building, adjoining property or public road.

Condition 5
Prior to the commencement of construction (excluding preliminary site investigations), a Construction Environmental Management Plan (CEMP) shall be prepared by a suitably qualified environmental consultant and a copy of the plan submitted to the Minister for Planning. Construction of the development must be in accordance with the CEMP.

Condition 6
As part of the CEMP, a sediment, erosion and drainage management plan (SEDMP) shall be prepared and implemented at the Lefevre site during the construction phase to alleviate the potential for erosion and sediment mobilisation into the Port River and adjacent Mutton Cove.

The SEDMP shall include, but not be limited to, measures ensuring:

- Excavation, fill and building materials stored on site are not located in areas susceptible to tidal inundation, impede the natural flow of surface waters, or allow sediment to enter any water body or stormwater system;
- Stabilisation and revegetation of areas subject to excavation and earthworks upon completion of site works;
- Removal of all excess soil stockpiles from the development within three months of commissioning of each substation.

Condition 7
In the event of a reactor fire requiring the isolation valve to be shut, the site and On-Site Detention (OSD) shall be cleaned/flushed prior to reopening the valve to prevent any contaminants from entering the Port River.

Condition 8
Where minimum finished floor levels are not achieved, all mechanical, chemical and electrical equipment vulnerable to water ingress shall be raised to a minimum level of 3.55 metres AHD.

Condition 9
Any fill material brought to the site shall be free of contamination by construction and demolition debris, industrial and chemical matter, and pest plants and pathogens.

Condition 10
All activities must comply with the Environment Protection (Water Quality) Policy 2015 under the *Environment Protection Act 1993*.

Condition 11
Local indigenous replacement trees shall be planted within 12 months of completion of the development at the following rates:

- if the development relates to a regulated tree—2 trees to replace a regulated tree; or
- if the development relates to a significant tree—3 trees to replace a significant tree

A site plan showing the location of the replacement trees shall be provided to the Department for Housing and Urban Development (spcapplications@sa.gov.au) at the time of replanting.

Condition 12
The development shall be undertaken in accordance with the tree protection measures set out in the approved Arboricultural Impact Assessment report, prepared by URPS dated 26 June 2026 (v4).

Condition 13
All Council, utility or state agency-maintained infrastructure that is demolished, altered, removed or damaged during the construction of the development shall be reinstated to Council, utility or state-agency specifications. All costs associated with these works shall be met by the applicant.

Condition 14
Any security or external lighting shall be designed and constructed to conform with Australian Standard 'AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting' and shall be located, directed and shielded and of such limited intensity that no unreasonable nuisance or loss of amenity is caused to any person or sensitive uses beyond the site.

Condition 15
All buried service crossings over pipelines PL1 and PL13 licensed under the *Energy Resources Act 2000* (including stormwater, sewerage, water, power cables and other common service trenches) shall:

a) be installed such that services are not crossing the pipeline, unless the full section of the pipeline has been protected by either concrete (measuring 200mm thick at 20 MPa compressive strength) or 12.5mm thick HDPE protection slabs.

b) include the installation of either concrete (measuring 200mm thick at 20 MPA compressive strength) or 12.5mm thick HDPE protection slabs with minimum of 300mm (PL1) or 350mm (PL13) overhang on each side of the Pipeline above the Pipeline at other service crossings, where practicable. If the third-party service is above the Pipeline the protection slab should be installed between the two services.

c) be designed and constructed to ensure that they do not adversely impact the Pipeline, including;

i. crossing the Pipeline at right-angles, where practicable
ii. installed above the Pipeline, where practicable
iii. a minimum of 500mm vertical separation between the service and the Pipeline, noting that Pipeline Licensee requirements in 1(d) and 1(e) may differ from this minimum requirement depending on size and complexity of a third-party crossing
iv. a minimum of 1000mm horizontal separation between parallel services and the Pipeline.

d) For PL1, licensed to Epic Energy, adhere to the requirements of (Appendix 1):

i. E-00-99-Q-018 – Typical Service / Epic Pipeline Crossing
ii. E-00-000-GL-L-003 - Third Party Activity Assessment Guidelines

e) For PL13, licensed to SEA Gas, adhere to the additional guidance provided by SEA Gas via email on 21st October 2025 (Appendix 1).

Note that any discrepancies in the requirements provided above in (a) – (c) and subsequent company specific requirements in (d) – (e) are to be discussed and agreed with the relevant pipeline Licensee during Detailed Design.

Details of the method of design and construction of all service crossings (including HDPE protection slab or a concrete slabs) must be provided to the relevant authority prior to construction.

Condition 16
No permanent above ground infrastructure (including poles, fencing or signage) shall be installed within 6 metres of a pipeline licensed under the *Energy Resources Act 2000*. Note that this excludes Pipeline warning signs, as shown in Epic Energy's drawing: E-00-99-Q-018 – Typical Service / Epic Pipeline Crossing (Appendix 1).

Condition 17
The applicant must provide notice to the Licensees at least three months prior to the commencement of any works within 6 metres of a pipeline licensed under the *Energy Resources Act 2000*, including service work, road upgrades, road construction, geotechnical excavation or potholing, to enable a Licensee representative to be present during works.

Condition 18
Within 20 metres of a pipeline licensed under the *Energy Resources Act 2000*, excavator size must not exceed 27 Tonnes and tiger teeth or single point penetration teeth must not be used.

Condition 19
Vibrating equipment must not be used within 10 metres of a pipeline licensed under the *Energy Resources Act 2000* unless vibration monitoring is installed to demonstrate that vibration remains below 50mm/s peak particle velocity at the surface above the pipeline.

Condition 20
Depth of cover must not be altered and must remain as a minimum of 1200mm under road surfaces.

Condition 21
Prior to the commencement of any earthworks within 6 metres of a pipeline licensed under the *Energy Resources Act 2000* or the introduction of heavy machinery within 10 metres of a pipeline, the applicant must provide the relevant authority with plans and documents, to its reasonable satisfaction, addressing the following aspects of detailed design and construction:

a) Safe Work Method Statement for the construction of the sewer infrastructure under the Pipeline, including construction methodology, equipment proposed to be used and whether the service will be bored or open trenched exposing the Pipeline;

b) any vibration monitoring equipment which will be used, the manner in which such equipment will be monitored, and the steps which will be taken to cease work (if required), should:

   i. vibrating rollers or other vibrating equipment be used within 10 metres of the Pipeline; or
   ii. road plaining be undertaken within 10 metres of the Pipeline;

c) the location of the Pipeline and depth of cover between ground level and the Pipeline as confirmed by undertaking potholing;

d) the signage the applicant proposes to erect and a plan identifying the proposed location of such signage; and

e) all Telstra, SA Power Networks and/or ElectraNet infrastructure which is proposed to be removed or relocated within 6 metres of the Pipeline, including both current and proposed locations, and details of the process for removal, including how foundations will be removed (if at all).

Condition 22
Prior to the commencement of any construction works within, adjacent to, or affecting a licensed pipeline easement, the Applicant shall undertake and complete a Safety Management Study (SMS) in accordance with AS 2885.6:2018, in consultation with the pipeline licensees. The SMS shall assess all interactions between the development and the Pipelines and identify any required mitigation, management, monitoring and asset protection measures. All recommendations and actions arising from the SMS shall be implemented to the satisfaction of the relevant pipeline licensee(s) and DEM prior to commencement of the relevant works.

Condition 23
Prior to the commencement of any construction works within, adjacent to, or affecting a licensed pipeline easement, any electrical interference assessment required by the relevant pipeline licensees or above SMS, including assessment of Earth Potential Rise (EPR), Low Frequency Induction (LFI), alternating current (AC) interference and associated corrosion risks, shall be completed by or to the satisfaction of the relevant pipeline licensees. The Applicant shall provide all information and assistance reasonably required to facilitate such assessments.

Condition 24
The Applicant shall not energise any electrical transmission infrastructure until all mitigation measures identified by the SMS, electrical interference assessments, or the relevant pipeline licensee(s) have been designed, installed, commissioned and verified as having been implemented in accordance with the approved engineering design. Written confirmation shall be obtained from the relevant pipeline licensee(s) that the mitigation measures for induced current, LFI, AC interference and associated electrical hazards affecting licensed pipeline infrastructure have been implemented.

Condition 25
Prior to commencement of works at any pipeline crossing or interface location, the proponent shall establish, to the satisfaction of the relevant pipeline licensee(s), arrangements addressing ongoing asset protection requirements, access for inspection and maintenance, responsibilities for monitoring and maintaining any mitigation measures, and the management of future interactions between the electrical and pipeline infrastructure. Such arrangements shall be maintained for the life of the development.

ADVISORY NOTES

Advisory Note 1
PLANNING, DEVELOPMENT AND INFRASTRUCTURE ACT 2016: REQUIREMENTS:

i. The development must be substantially commenced within 12 months of the date of this Notification, unless this period has been extended by the Minister for Planning.

ii. You are also advised that any act or work authorised or required by this Notification must be completed within 3 years of the date of the Notification unless this period is extended by Minister for Planning.

iii. You will require a fresh consent before commencing or continuing the development if you are unable to satisfy these requirements.

Advisory Note 2
Prior to the time period specified above, any request for an extension of time must be lodged with Planning and Building, Department for Housing and Urban Development (spcapplications@sa.gov.au).

Advisory Note 3
The applicant is reminded of its general environmental duty, as required by Section 25 of the *Environment Protection Act 1993*, to take all reasonable and practical measures to ensure that the activities on the whole site, including during construction, do not cause environmental harm.

Advisory Note 4
The Coast Protection Board advises the following:

1. The downstream stormwater main should be maintained/inspected before the wet seasons of winter/spring (June to August), to prevent overflow north into the adjacent Mutton Cove vicinity.
2. Coastal Acid Sulfate Soils (CASS) have the potential to cause major habitat loss and degradation due to the release of acid and heavy metal ions into the environment. There is also a threat to development after construction due to deterioration and corrosion due to the disturbance of CASS. The land over which the development is situated may have the potential to develop acid sulfate conditions if exposed to oxygen. Spoil material should be closely monitored and tested for potential CASS and a contingency plan to remediate this action should be put in place, via an appropriate soil expert. The Coast Protection Board has released a set of guidelines which should be followed in areas where acid sulfate soils are likely to occur. These can be found at: http://www.environment.sa.gov.au/about-us/boards-and-committees/Coast_Protection_Board/Coastal_acid_sulfate_soils
3. Any landscaping associated with this development should use local native coastal species, avoiding the spread of exotic plants in the coastal environment. Green Adelaide should be contacted should the applicant require expert advice and specific species lists.
4. Development should avoid or minimise any unnecessary clearance or removal of established trees or vegetation, in particular regulated or significant trees.
5. The waters within the Port River fall within the area covered by the *Adelaide Dolphin Sanctuary Act 2005*. The purpose of this Act is to protect the dolphin population and their natural habitat, including the protection of the dolphin population from direct physical harm including changes in water quality. Contractors should be made aware of the Adelaide Dolphin Sanctuary Act and that there is a general duty of care to protect the dolphin population from physical harm.

Advisory Note 5
The Department for Energy and Mining advises the following:

1. The gas and/or liquid petroleum pipelines licensed referenced in the conditions are the Moomba to Adelaide Pipeline (PL1) and Port Cambell to Adelaide Pipeline (PL13) under the *Energy Resources Act 2000*.
2. The applicant is reminded that under section 93 of the *Energy Resources Act 2000*, a person must not interfere with activities regulated under the ER Act which are lawfully conducted under a licence.
3. The Pipelines are licenced to Epic Energy and SEA Gas. Direct contact with the Licensees on this matter should be through:

   Epic Energy: land.management@epic.com.au

   SEA Gas: development.application@seagas.com.au
4. All parties carrying out works approved herein are recommended to attend a pipeline awareness session administered by the pipeline licensee prior to commencing work. If you have any queries in relation to this matter, please contact Joe Ward on 0884 292 327 or via email at joseph.ward@sa.gov.au

Advisory Note 6
The applicant is reminded of native fauna obligations under the *National Parks and Wildlife Act 1972* and *Animal Welfare Act 1985*.

APPENDIX A – REQUIREMENTS FOR WORKS NEAR GAS PIPELINES

Our Ref: SD2603728, 2026_062

Government of South Australia
Department for Energy and Mining

APPENDIX #1

SEA Gas Utility Separation Requirements (email with names and contact details removed)

From: *SEA Gas*
To: *Australian Naval Infrastructure, SMEC, Verbrec, GPA, SA Power Networks, ElectraNet*
Sent: *Tuesday, October 21, 2025 10:06*

Subject: *SEA Gas utility separation requirements*

All,

There was an action from this meeting for SEA Gas to clarify required separation distances from other utilities. Please find these below. Note that the main driver behind separation is to allow us to make coating repairs to our pipeline, which requires space around the pipeline to allow a tape wrap machine to operate.

Parallel underground utilities

- *Minimum clearance of 1000mm from one outer surface to the next.*

Crossings

- *Minimum clearance of 500mm from one outer surface to the next if crossing above SEA Gas*
- *Minimum clearance of 1000mm if from one outer surface to the next if crossing below SEA Gas*

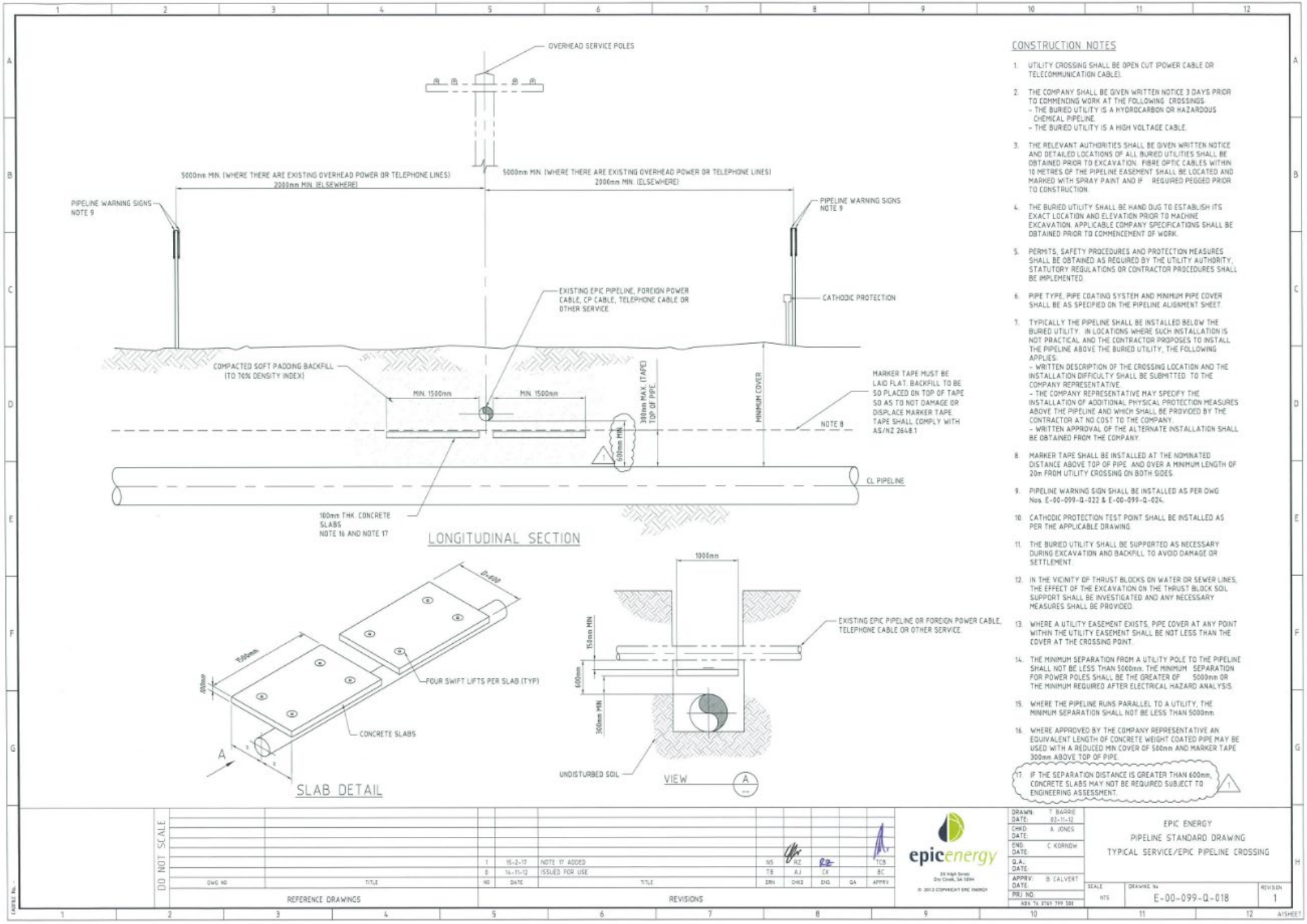
Notes/Exceptions

- *AC electrical utilities in close proximity and parallel to our pipeline will induce AC currents in the SEA Gas pipeline and thus the distance should be maximised where possible*
- *Large diameter utilities such as large water lines and buried stormwater pipes over 1000mm in diameter may need more separation. Would need to discuss with the asset owner the respective maintenance requirements and clearances required.*
- *Where large conduit banks or pipes over 1000mm diameter cross above our pipeline, these will result in greater restriction of space for coating repairs. Large conduit banks should cross with a separation of 1000mm or more above or below our pipeline*
- *These clearances do not necessarily apply where our pipeline is in cased crossings. Separation there will be determined by constructability assessments in consultation with the asset owners on a case-by-case basis.*

Hope this assists, happy to discuss.

SEA Gas
L5, 57 Wyatt Street Adelaide SA 5000
www.seagas.com.au

ENERGY RESOURCES DIVISION
Level 7, 11 Waymouth Street, Adelaide SA 5000 | GPO Box 320 Adelaide SA 5001 | DX452
Tel (+61) 8 8429 2695 | ABN 83 768 683 934



CONSTRUCTION NOTES

1. UTILITY CROSSING SHALL BE OPEN CUT (POWER CABLE OR TELECOMMUNICATION CABLE).
2. THE COMPANY SHALL BE GIVEN WRITTEN NOTICE 3 DAYS PRIOR TO COMMENCING WORK AT THE FOLLOWING CROSSINGS.
   - THE BURIED UTILITY IS A HYDROCARBON OR HAZARDOUS CHEMICAL PIPELINE.
   - THE BURIED UTILITY IS A HIGH VOLTAGE CABLE.
3. THE RELEVANT AUTHORITIES SHALL BE GIVEN WRITTEN NOTICE AND DETAILED LOCATIONS OF ALL BURIED UTILITIES SHALL BE OBTAINED PRIOR TO EXCAVATION. FIBRE OPTIC CABLES WITHIN 10 METRES OF THE PIPELINE EASEMENT SHALL BE LOCATED AND MARKED WITH SPRAY PAINT AND IF REQUIRED PEGGED PRIOR TO CONSTRUCTION.
4. THE BURIED UTILITY SHALL BE HAND DUG TO ESTABLISH ITS EXACT LOCATION AND ELEVATION PRIOR TO MACHINE EXCAVATION. APPLICABLE COMPANY SPECIFICATIONS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF WORK.
5. PERMITS, SAFETY PROCEDURES AND PROTECTION MEASURES SHALL BE OBTAINED AS REQUIRED BY THE UTILITY AUTHORITY, STATUTORY REGULATIONS OR CONTRACTOR PROCEDURES SHALL BE IMPLEMENTED.
6. PIPE TYPE, PIPE COATING SYSTEM AND MINIMUM PIPE COVER SHALL BE AS SPECIFIED ON THE PIPELINE ALIGNMENT SHEET.
7. TYPICALLY THE PIPELINE SHALL BE INSTALLED BELOW THE BURIED UTILITY. IN LOCATIONS WHERE SUCH INSTALLATION IS NOT PRACTICAL AND THE CONTRACTOR PROPOSES TO INSTALL THE PIPELINE ABOVE THE BURIED UTILITY, THE FOLLOWING APPLIES:
   - WRITTEN DESCRIPTION OF THE CROSSING LOCATION AND THE INSTALLATION DIFFICULTY SHALL BE SUBMITTED TO THE COMPANY REPRESENTATIVE.
   - THE COMPANY REPRESENTATIVE MAY SPECIFY THE INSTALLATION OF ADDITIONAL PHYSICAL PROTECTION MEASURES ABOVE THE PIPELINE AND WHICH SHALL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE COMPANY.
   - WRITTEN APPROVAL OF THE ALTERNATE INSTALLATION SHALL BE OBTAINED FROM THE COMPANY.
8. MARKER TAPE SHALL BE INSTALLED AT THE NOMINATED DISTANCE ABOVE TOP OF PIPE AND OVER A MINIMUM LENGTH OF 20m FROM UTILITY CROSSING ON BOTH SIDES.
9. PIPELINE WARNING SIGN SHALL BE INSTALLED AS PER DWG Nos. E-00-099-Q-022 & E-00-099-Q-024.
10. CATHODIC PROTECTION TEST POINT SHALL BE INSTALLED AS PER THE APPLICABLE DRAWING.
11. THE BURIED UTILITY SHALL BE SUPPORTED AS NECESSARY DURING EXCAVATION AND BACKFILL TO AVOID DAMAGE OR SETTLEMENT.
12. IN THE VICINITY OF THRUST BLOCKS ON WATER OR SEWER LINES, THE EFFECT OF THE EXCAVATION ON THE THRUST BLOCK SOIL SUPPORT SHALL BE INVESTIGATED AND ANY NECESSARY MEASURES SHALL BE PROVIDED.
13. WHERE A UTILITY EASEMENT EXISTS, PIPE COVER AT ANY POINT WITHIN THE UTILITY EASEMENT SHALL BE NOT LESS THAN THE COVER AT THE CROSSING POINT.
14. THE MINIMUM SEPARATION FROM A UTILITY POLE TO THE PIPELINE SHALL NOT BE LESS THAN 5000mm. THE MINIMUM SEPARATION FOR POWER POLES SHALL BE THE GREATER OF 5000mm OR THE MINIMUM REQUIRED AFTER ELECTRICAL HAZARD ANALYSIS.
15. WHERE THE PIPELINE RUNS PARALLEL TO A UTILITY, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 5000mm.
16. WHERE APPROVED BY THE COMPANY REPRESENTATIVE AN EQUIVALENT LENGTH OF CONCRETE WEIGHT COATED PIPE MAY BE USED WITH A REDUCED MIN COVER OF 580mm AND MARKER TAPE 300mm ABOVE TOP OF PIPE.
17. IF THE SEPARATION DISTANCE IS GREATER THAN 600mm, CONCRETE SLABS MAY NOT BE REQUIRED SUBJECT TO ENGINEERING ASSESSMENT. (1)

DO NOT SCALE

DWG NO	TITLE

REFERENCE DRAWINGS

NO	DATE	TITLE	DRN	CHKD	ENG	QA	APPRV
1	15-2-17	NOTE 17 ADDED	NS	RZ	RZ		TCB
0	14-11-12	ISSUED FOR USE	TB	AJ	CK		BC

REVISIONS

epicenergy
25 High Street, Dry Creek, SA 5094
© 2012 COPYRIGHT EPIC ENERGY

DRAWN: T. BARRIE DATE: 02-11-12	
CHKD: A. JONES DATE:	
ENG: C. KORNOW DATE:	
Q.A. DATE:	
APPRV: B. CALVERT DATE:	
PRJ NO.	
ABN 76 8769 799 588	

EPIC ENERGY
PIPELINE STANDARD DRAWING
TYPICAL SERVICE/EPIC PIPELINE CROSSING

SCALE	DRAWING No.	REVISION
NTS	E-00-099-Q-018	1

A1SHEET

Epic Energy

Guideline

Document No: E-00-000-GL-L-003

Third Party Activity Assessment Guidelines

Rev	Status	Prepared By	Checked By	Approved By	Date
1	Revision	Robert Zhu	Peers	Lucas Millmore	7/5/2021
2	Updated	PFaunt	Brian O'Callaghan	Jarrod Gilby	24/2/2022

Table of Contents

1. INTRODUCTION 3
2. SCOPE 3
3. RELATED DOCUMENTS 3
1. Internal 3
2. External 3
4. ASSESSMENT GUIDELINES 4
3. High Voltage Power Line 4
4.1.1 First Pass Assessment 4
4.1.2 AC Mitigation Study 6
4.1.3 Risk Treatment 6
4. Underground Service Installation 7
5. Horizontal Directional Drilling 7
4.1.4 Across the pipeline 7
4.1.5 Parallel to the pipeline 7
6. Trenching and Excavation work 8
4.1.6 Across the pipeline 8
4.1.7 Parallel to the pipeline 8
7. Seismic Survey 8
8. Magneto-Telluric Survey 8
9. Housing Development/Land Rezoning/Subdivision 9
10. Road Crossing 9
11. Rail Crossing 10
12. Infrastructure 10
13. Vertical Drilling 10
14. Tree Planting 11
15. The use of easement/ROW request 11
16. Blasting activity 11
17. Ploughing/Ripping Activity 11
18. Fence Pole Installation 11
19. Dam Construction 12
20. Borrow Pits 12

1. INTRODUCTION

This document outlines guidelines and considerations that apply to assessing a development proposal or a third-party activity in the vicinity of the Epic pipelines which has potential impact to the pipelines or pipeline operation or change the land classification of the pipeline. All third-party works shall follow the procedure of Managing Third Party Works (E-00-000-PR-L-012). Any major or complicated third-party activity shall be consulted with Epic Engineering for assessment and approval prior to any works being authorized to be undertaken. Epic Energy promotes the use of the Dial before You Dig system in the planning stage of any development.

2. SCOPE

This document applies to personnel in Operations, Maintenance and Engineering involved in the Third-Party Works Assessment process.

3. RELATED DOCUMENTS

1. Internal

- Responding to Dial Before You Dig Enquiries Procedure (E-00-000-PR-G-037).
- Managing Third Party Works Procedure (E-00-000-PR-L-012).
- Dial Before You Dig Site Visit Work Instruction (E-00-000-WI-L-016).
- Epic Energy Third Party Works Questionnaire – Road (E-00-000-FO-L-001).
- Epic Energy Third Party Works Questionnaire – UG Assets (E-00-000-FO-L-002).
- Epic Energy Third Party Works Questionnaire – Power Line (E-00-000-FO-L-003).
- Epic Energy Third Party Works Questionnaire – Rail (E-00-000-FO-L-004).
- Job Hazard Analysis Procedure (E-00-000-PR-W-007).
- Job Hazard Analysis Form (E-00-000-FO-W-009).
- Permit to Work Procedure (E-00-000-PR-G-012).
- Guidelines for Tree and Shrub Planting on Pipeline Easement (S-36-099-ER-G-002).

2. External

- AS 2885.0 Pipelines – Gas and liquids petroleum, Part 0: General requirements.
- AS 2885.1 Pipelines – Gas and liquids petroleum, Part 1: Design and construction.
- AS 2885.3 Pipelines – Gas and liquids petroleum, Part 3: Operation and maintenance.
- AS 4853:2012 – Electrical Hazards on metallic pipelines.
- AS 2832.1:2015 – Cathodic protection of metals Part 1: Pipes and cables.

4. ASSESSMENT GUIDELINES

3. High Voltage Power Line

High voltage (HV) power is classified as any AC voltage above 1 kV. There are two types of HV lines:

- Distribution power lines – any HV lines below 66kV.
- Transmission power lines – any HV lines above 66kV.

Power lines (including overhead and underground power lines) with a voltage of 11kV, 19kV (SWER), 33kV - 275kV are encountered along the pipeline and these can pose threats to the pipeline system and personnel working on the pipeline.

The close proximity of high voltage power networks and pipelines can result in hazardous voltages on the pipeline. When considering the installation of a new HV power line in the vicinity of Epic's pipeline, it is important to consider the effects of low frequency induction (LFI) and earth potential rise (EPR). The distance from the power line/conductive structure in respect to the pipeline and the line orientation directly affects the contribution of these hazards to the pipeline.

Note that power stations and substations, by its nature of design, are unlikely to cause LFI and EPR issues with the metallic pipeline. However, the ground fault in a transmission or distribution network connected to a power station/substation will cause these issues. Hence following assessment shall also be conducted to evaluate the risk of new installation for power stations and substations in the vicinity of Epic's pipeline. The following recommendations shall be followed for the installation of the HV power lines:

- Where the HV power line crosses the Epic pipeline, the power line shall be perpendicular to the pipeline, i.e. crosses at 90 degrees. as this minimises the interference with Epic's cathodic protection (CP) system.
- Where the HV power line crosses the pipeline at a sharp angle or runs parallel to the pipeline, the length of the parallel section shall be minimised. In addition to this an independent study of CP interference shall be conducted and submitted to Epic for review. The cost of the study is at the expense of the contractor undertaking the works.

4.1.1 First Pass Assessment

A first pass assessment as per AS/NZS 4853:2012 shall be conducted to determine if an AC mitigation study is required. The first pass assessment provides a conservative review of the LFI and EPR to determine any AC impact on the pipeline.

The following tables detail the conditions that are required to be met. If any of the conditions cannot be met or verified, then a formal AC mitigation study shall be conducted to assess the impact of the new HV power line on the pipeline.

Table 4.1 Conservative exposure length for pipelines subject to LFI from distribution power lines (AS/NZS 4853:2012, Table 4.2)

Power line to pipeline separation (m)	Exposure length (m)		
	100 Ω.m	500 Ω.m	1000 Ω.m
5	180	160	150
10	210	180	170
20	240	200	190
50	310	250	230
100	400	300	280
200	550	390	340
500	950	600	500

Notes: The exposure length is defined as the length of pipeline directly parallel to the power line.

Table 4.2 Conservative separation distance for pipelines subject to EPR from distribution power lines (AS/NZS 4853:2012, Table 4.3)

Fault current or actual current (A)	Separation required (m) for two resistivity values	
	100 Ω.m	500 Ω.m
150	40	190
300	80	390
500	130	660
750	200	1000
1000	270	1300

Notes: If the fault current is unknown, then 1,000 A is the assumed value for the assessment. Use an earth resistivity of 500 Ω.m for dry sand or rock and 100 Ω.m for all other cases.

Table 4.3 Conservative exposure length for pipelines subject to LFI from transmission power lines (AS/NZS 4853:2012, Table 4.4)

Power line to pipeline separation (m)	Exposure length (m)		
	100 Ω.m	500 Ω.m	1000 Ω.m
5	95	82	78
10	110	93	87
20	127	106	100
50	165	131	120
100	210	160	145
200	290	202	178
500	500	310	260

Notes: The exposure length is defined as the length of pipeline directly parallel to the power line.

Table 4.4 Conservative separation distance for pipelines subject to EPR from transmission power lines (AS/NZS 4853:2012, Table 4.5)

Fault current or actual current (A)	Separation required (m) for two resistivity values	
	100 Ω.m	500 Ω.m
1000	60	310
3000	190	940
6000	380	1900
10000	635	>3500

Notes:

1. For lines without an Overhead Earth Wire (OHEW), use fault current up to 10,000A for the assessment. Use an earth resistivity of 500 Ω.m for dry sand or rock and 100 Ω.m for all other cases.
2. For lines with an OHEW, use fault current up to 3,000A for the assessment (this assumes a current split of 30% 0f 10 kA). Use an earth resistivity of 500 Ω.m for dry sand or rock and 100 Ω.m for all other cases.

4.1.2 AC Mitigation Study

Where a first pass assessment has determined that the planned HV power line installation may have an impact on the pipeline, an AC mitigation must be undertaken. The purpose of the AC mitigation study is to understand the effects the power line has on the pipeline and outline the associated risks with its presence. The procedure for this study is as follows:

1. Voltage Limit Compliance
    a. ***Identifying zones of interest*** where exposure lengths and separation distances exceed the criteria from the First Pass Assessment.
    b. ***Undertake site visit*** to acquire pipeline-power line separations, soil resistivities etc.
    c. ***Data gathering*** to accurately calculate LFI and EPR voltages. This includes system geometry, pipeline data, HV power line operation parameters, HV power line life cycle.
    d. ***Impressed voltage calculations*** where LFI calculated at power line load conditions and EPR is calculated under power line fault conditions.
    e. ***Equipment integrity assessment*** to determine whether the pipeline and/or equipment can withstand the impressed voltages.
    f. ***Basic voltage limit assessment*** to calculate anticipated touch voltages and compare them with predetermined contact scenarios involving the pipeline and/or equipment.

2. Risk Based Compliance
    a. ***Risk Based (Personal Safety) Assessment*** to determine the risk level of predetermined contact scenarios and develop risk treatment measures to achieve a low risk level.

Further details on each of these steps can be found in AS/NZS 4853:2012, Table 4.1.

4.1.3 Risk Treatment

At the conclusion of the AC mitigation study, any mitigations and recommendations should be clearly outlined in a detailed report which will be reviewed by Epic Energy Electrical Engineering team. Based on the associated risk, associated controls and proposed mitigation measures to be applied to reach a low risk level as per AS/NZS 4853:2012.

Any mitigation will require Epic Energy to be involved with the planning and all parties conducting work must be performed the required Occupational Health and Safety inductions a must adhere to Epic Energy Safe System of Work (SSOW). All required mitigations shall be installed prior to the installation of the power line and testing of pipeline voltages shall be undertaken prior to and following the commissioning of the power line.

Records of the electrical hazard risk treatment design, together with the measured performance at commissioning, shall be handed over to Epic Energy at the completion of commissioning. Further requirements documentation can be found in AS/NZS 4853:2012, section 4.5.6.

4. Underground Service Installation

Underground services include water line, power cable, communication cable, optic fibre cable or other utility services. It generally involves the trenching and excavation activities, please refer Section 4.4 in this document. If the work involves horizontal directional drilling (HDD), please refer Section 5 in this document. The following guidelines shall be considered:

- If the service line is parallel to Epic pipeline, a minimum of 3m offset distance must be achieved with 6m being preferred.
- If the service line runs across the Epic pipeline, Epic Energy require a minimum of 600mm separation distance due to future pipeline maintenance activity.
- In cases where the service is intended to go above the Epic pipeline and separation distance of 600mm cannot be achieved, it is recommended that the service be installed below the Epic pipeline with a separation distance of 600mm.
- If the service line is made of metal and has CP system, the Epic integrity team shall be consulted for AC interference consideration.
- Epic Energy PTW system and supervision is required if any excavation of more than 300mm depth occurs within the easement of Epic pipeline.

5. Horizontal Directional Drilling

4.1.4 Across the pipeline

- The Epic pipeline must be positively identified by vacuum truck or manual excavation.
- An inspection pit shall be dug in front of Epic pipeline to witness the drilling head come through. A minimum of 600mm clearance is required between the drilling head and Epic pipeline.
- Epic PTW and JHA system is required and Epic representative must be on site supervising the works.

4.1.5 Parallel to the pipeline

- Epic does not recommend directional drilling parallel to an Epic pipeline, unless there is an underground physical protection barrier or adequate separation distance (which is assessed on a case-by-case basis).
- Trenching option shall be considered where horizontal directional drilling can be avoided.

- If a physical protection barrier or trenching is not practicable, a series of inspection pits shall be dug at a certain distance interval (to be assessed on case-by-case basis by Epic) to ensure the drilling head remains on track. Epic must assess and approve the activity prior to it taking place.

6. Trenching and Excavation work

4.1.6 Across the pipeline

- Depth of cover for Epic pipeline at the crossing point shall be confirmed before works are approved.
- A minimum of 600mm separation distance shall be achieved between the Epic pipeline and utility services. Where 600mm separation distance cannot be achieved, concrete slab shall be considered as a physical protection barrier.
- No tiger teeth or single pointed teeth is allowed for the excavation in the vicinity of Epic pipelines.
- The size or tonnage of the excavator shall be taken into consideration with the calculation of resistance to penetration to Epic pipelines.
- A Safe Work Method Statement or Construction (SWMS) for the work shall be submitted to Epic for review and approval.
- The activity must be undertaken under the Epic PTW and JHA systems and directly under Epic supervision.

4.1.7 Parallel to the pipeline

- If the trench work is parallel to the Epic pipeline, a minimum of 3m offset distance must be achieved and 6m is preferred.
- The offset line shall be marked on site and fence/bunting shall be installed as a physical separation measure.
- Epic supervision is required if any excavation work of more than 300mm depth occurs within the Epic pipeline easement.

7. Seismic Survey

- Offset distance of 50m each side of pipeline is required for vibrating machinery. If the requestor would like to work closer to the pipeline, a request must be submitted to Epic for assessment.
- Survey vehicles and machines are only allowed to cross the Epic pipeline at designated vehicle crossings or public road crossings. Maximum vehicle axle loading and depth of cover at the road crossings shall be provided to Epic to perform the engineering calculations of road crossing in accordance with API RP 1102.
- A ramp or steel plate may be required if the requestor would like to cross the pipeline at an un-designated crossing.

8. Magneto-Telluric Survey

- Magneto-Telluric (MT) survey is considered to be a passive geological survey and no current is input into the ground. This must be confirmed with the requestor.

- Given that it is a passive survey, the survey is acceptable if it is carried out off the pipeline easement.
- Vehicles are only allowed to cross the pipeline at designated crossing points or public roads. Maximum vehicle axle loading and depth of cover at the road crossings shall be provided to Epic to perform the engineering calculations of road crossing in accordance with API RP 1102.
- A ramp or steel plate may be required if the requestor would like to cross the pipeline at an un-designated crossing.

9. Housing Development/Land Rezoning/Subdivision

Housing development, land rezoning or subdivision can pose a significant risk to the pipeline. It is vital to have early consultation with Epic and understand Epic requirements.

- Submission of a "Planning" Dial Before You Dig is recommended
- A review on potential change of land location class (primary location class and secondary location class) must be conducted. Refer to AS 2885.1 for information on location classes.
- An engineering assessment is required for any housing development adjacent to the Epic pipeline.
- A Safe Management Study (SMS) Workshop may be required to review the existing and new risks to the Epic pipeline and determine if there are sufficient physical and procedural protection measures under the new location class.
- The SMS workshop shall be conducted in accordance with AS2885, this is usually facilitated by an independent facilitator.
- Additional physical and/or procedural protection measures may be required such as concrete slabbing, fencing of the easement, additional signage and etc.
- Consideration must be given as to whether the pipeline will be crossed by construction vehicles, increased traffic along any roads which cross or are in close proximity to the pipeline, the installation of other services and infrastructure and the effect on the pipeline.

10. Road Crossing

- The minimum depth of cover is 1,200mm for road crossings in accordance with AS 2885.1. The depth of cover must be confirmed on site by an Epic representative.
- Engineering calculation of road crossings must be performed to determine any additional physical protection measures required.
- The angle of the pipeline intersection with the road should be as close to 90 degrees as possible, but no less than 30 degrees.
- Liaison is required with the authorities responsible for other utilities or infrastructure installed in the road reserve. Separation and protection measures shall be taken into consideration.
- No vibrating rollers are permitted within the pipeline easement or within 10m either side of the pipeline (whichever is greater) during the operation until a detailed engineering assessment is conducted.
- Additional physical protection measures may be considered if the road is permanent and pipeline was not designed for the crossing.
- Other considerations:

- Effects on the pipeline from an accident involving traffic.
- Effects on the traffic from a puncture, rupture or leak from the pipeline.
- Inconvenience to other parties during inspection or repair of the pipeline.
- Risk of external damage to the pipeline.
- Requirements for corrosion mitigation.
- Effect on pipeline of maintenance of the reserve.
- Liaison with the authority responsible for the reserve.

11. Rail Crossing

- The minimum depth of cover is 2000mm for rail crossings and in accordance with AS 2885.1. The depth of cover must be confirmed on site by an Epic representative.
- Engineering calculation of rail crossings must be performed to determine any additional physical protection measures required.
- The angle of the pipeline intersection with the railway should be as close to 90 degrees as possible, but no less than 30 degrees.
- Liaison is required with the authorities responsible for other utilities or infrastructure installed in the railway corridor. Separation and protection measures shall be taken into consideration for the construction work and future maintenance work.
- No vibrating rollers are permitted within the pipeline easement or within 10 m either side of the pipeline (whichever is greater) during the operation until a detailed engineering assessment is conducted.
- If the train is operated by electricity, an assessment on CP interference shall be undertaken.
- Other conditions under Section 4.8 shall be considered too.

12. Infrastructure

Infrastructure can be but not limited to any road, railways, major sporting and cultural facilities, and land use areas of major economical developments, cities, town centres, shopping malls, hotels, motels or schools.

- No infrastructure of any kind is allowed within the pipeline easement
- Engineering Risk Assessment shall be undertaken to assess any potential risks caused by the development.
- Any road crossing must be assessed to determine additional physical protection measures which may be required.
- Any new utility service shall be advised and forwarded to Epic Engineering for assessment.
- If the location class of the land is changed due to infrastructure in the vicinity of the pipeline, information must be collected for the Risk Assessment. Additional physical control measures will be applied.

13. Vertical Drilling

- Vertical Drilling is not permitted on the pipeline easement, unless approved by Epic prior to the operation.
- The location of drilling shall be pegged on site prior to commencement and separation distance from Epic pipeline shall be confirmed by Epic representative.

- Separation fence/bunting/flagging may be considered to ensure the activity comes no closer to Epic pipeline.
- Epic representative is required to supervise the work onsite during the operation.
- Any vehicle/machinery accessing the site across the Epic pipeline must be notified to Epic in advance and approval must be obtained from Epic prior to access.

14. Tree Planting

- Planting of trees on the pipeline easement is discouraged as it interrupts the line of sight between pipeline warning signs, and the root system of the tree can potentially damage the coating of pipeline and hence cause pipeline corrosion. In accordance with AS 2885, Epic is required to clear vegetation to maintain line of sight and the integrity of the protective coating.
- Please refer Epic Energy's Guidelines for Tree and Shrub Planting on Pipeline Easement (E-36-099-ER-G-002).

15. The use of easement/ROW request

- The ROW is a private track and the use of the ROW is not encouraged by third parties. Contractors are encouraged to use public roads where possible.
- Anyone who requires access the Epic ROW must complete the Epic induction, nationally recognised 4WD driving course and other mandatory trainings required by Epic Energy.
- Vehicle loading must be assessed if vehicles need to cross the Epic pipeline.
- The operator/driver must be educated the requirements of accessing the ROW including but not limited to speed limit, no access when it is wet and vehicle washdown requirements where there are noxious weeds.

16. Blasting activity

- It is recommended 100 mm/s Peak Particle Velocity (PPV) is the safe target for existing in-ground piping with typical burial installation in trenches.
- The safe distance to pipeline is subject to the explosives charge mass (MIC). As a general guide, 6 m separation distance for 1 kg charge (MIC) or 7 m separation distance for 1.3 kg charge (MIC).

17. Ploughing/Ripping Activity

- Ploughing and/or ripping activity must be notified to Epic prior to commencement.
- Depth of cover for the Epic pipeline in the area shall be confirmed.
- Epic requires the blades to be lifted when entering the pipeline easement. Where this cannot be achieved, a full Engineering assessment is required.
- The activity shall be under Epic PTW and JHA system, and Epic supervision.

18. Fence Pole Installation

- The location of fence pole shall be pegged on site prior to commencement and separation distance from Epic pipeline shall be confirmed by Epic representative.
- A minimum separation distance of 3m must be achieved and 6m is preferred.

- A fence/bunting/flagging may be considered to ensure the activity comes no closer to Epic pipeline.
- The Epic representative is required to supervise the work during the operation.
- Any vehicle/machinery accessing across the Epic pipeline must be notified to Epic in advance and approval must be obtained from Epic prior to access.

19. Dam Construction

- The construction of dams is not allowed within the pipeline easement.
- Site survey may be required to ensure dam construction near a pipeline does not change surface-water runoff and cause soil erosion over the pipeline.
- Pipeline danger signage shall be erected near the Epic pipeline and the dam.
- Engineering calculation for heavy machine or vehicle crossing the pipeline must be performed to determine any additional physical protection measures required.

20. Borrow Pits

- No construction of borrow pits is allowed within the pipeline easement.
- The borrow pit construction near a pipeline shall not change surface-water runoff or local watercourse flows and cause soil erosion over the pipeline.
- Pipeline danger signage shall be erected near any borrow pit to help ensure excavation activities do not encroach on the pipeline easement.
- Fauna and flora survey, cultural heritage clearance approval may be required for consideration.
- Engineering calculation for heavy machine or vehicle crossing the pipeline must be performed to determine any additional physical protection measures required.