ntepa Northern Territory Environment Protection Authority

Statement of Reasons

APT PIPELINES (NT) PTY LTD (APA) –
CHANNEL ISLAND BRIDGE PIPELINE REPLACEMENT PROJECT

PROPOSAL

APT Pipelines (NT) Pty Ltd (APA) (the Proponent) submitted a Notice of Intent (NOI) for the Channel Island Bridge Pipeline Replacement Project (the Proposal) to the Northern Territory Environment Protection Authority (NT EPA) on 20 December 2019 for consideration under the *Environmental Assessment Act 1982* (EA Act).

The Proposal is located along the Channel Island Road, Middle Arm, approximately 10 km south of Darwin and 12 km southwest of Palmerston.

The Proposal is to replace the section of the Amadeus Gas Pipeline attached to the Channel Island Bridge with an underground alignment and includes:

- enlarging diameter of bridge pipeline from 200 mm to 300 mm, consistent with main pipeline
- construction (pipe stringing) of the new pipeline in the road reserve
- excavation of entry and exit points
- horizontal directional drilling (HDD) for underground pipeline
- piping modification at two metering stations
- instalment and commissioning of new underground pipeline
- decommissioning (venting) and removal of existing aboveground pipeline.

The Proposal provides alternatives for three key aspects of the works:

- three alignment options are proposed for the underground pipeline pending geotechnical assessments to inform the final alignment decision (two south and one north of the Channel Island Bridge – see Figure 1)
- two locations are proposed for the exit pit and pipe installation site depending on the pipeline alignment (land clearing required varies between 0.2 ha and 0.3 ha – see Figure 1)
- two methods for return transport of HDD drill fluids are proposed, these are via enclosed drill fluid return pipe (preferred option) or by using vacuum trucks.

Associated works will be conducted on Channel Island (Channel Island Metering Station, laydown areas on previously cleared land) and the mainland (exit point/pipe installation site, pipe string area, Darwin City Gate Station and the Channel Island Bridge).

The Proposal requires land clearing of up 0.3 ha of mangrove habitat.

Construction is estimated to take six to eight months, commencing mid-2020. The Proposal would employ about four construction employees, 20 contractor personnel and a specialist HDD crew of about six people.

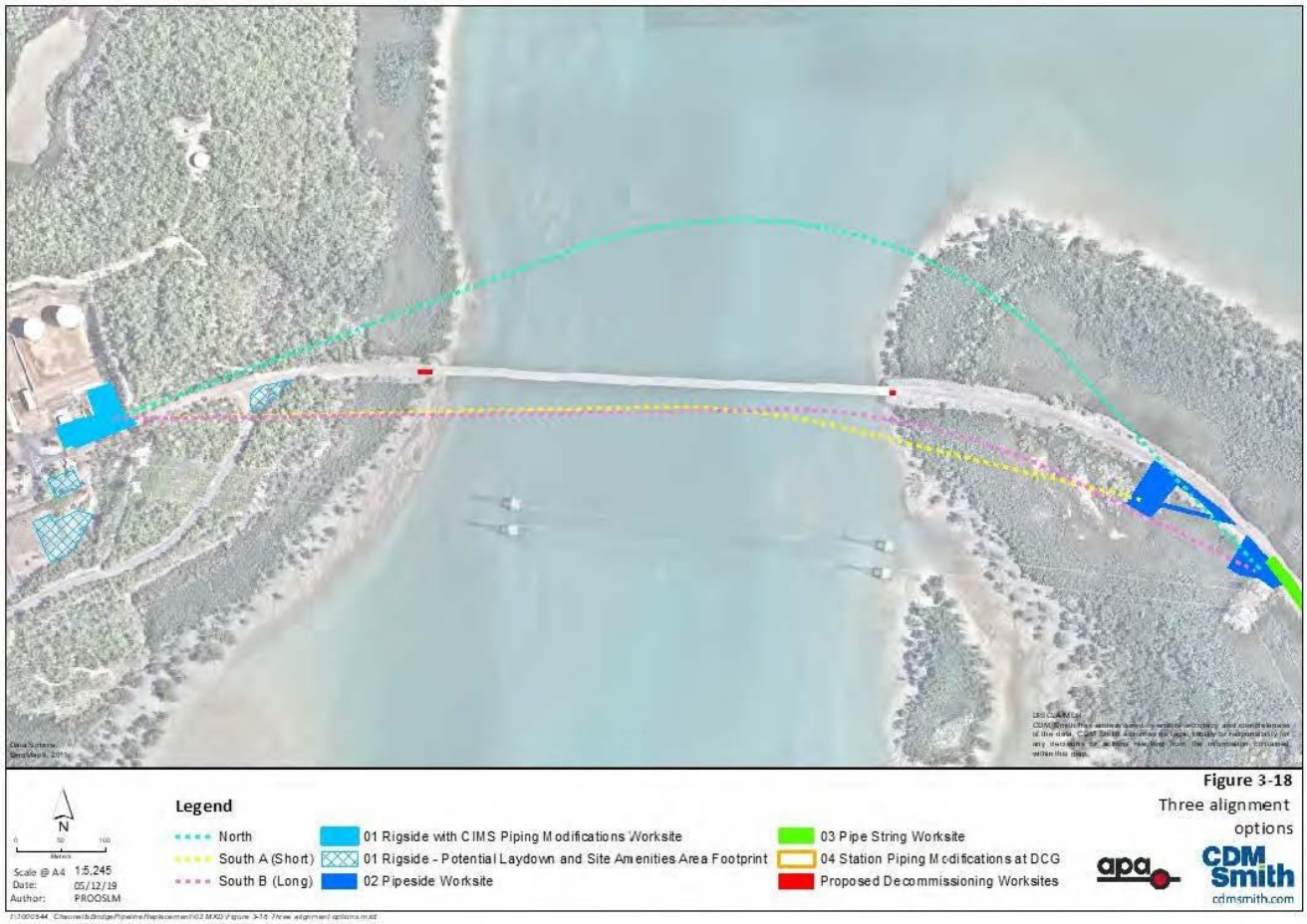

Figure 1: Horizontal directional drill options (Source: Notice of Intent)

CONSULTATION

The NOI has been reviewed as a notification under the EA Act in consultation with Northern Territory Government (NTG) advisory bodies (see Attachment 1) and the responsible Minister, in accordance with clause 8(1) of the Environmental Assessment Administrative Procedures 1984 (EAAP).

JUSTIFICATION

The NOI was assessed against the NT EPA's environmental factors and objectives. The NT EPA identified four environmental factors (Table 1) that could be potentially be significantly impacted by the Proposal. The NT EPA considered the importance of other environmental factors during the course of its assessment; however, those factors were not identified as being potentially significantly impacted.

Table 1: Key environmental factors

Theme	Key Environmental Factor	Objective
Land	Terrestrial flora and fauna	Protect the NT's flora and fauna so that biological diversity and ecological integrity are maintained.
	Terrestrial environmental quality	Maintain the quality of land and soils so that environmental values are protected.

Theme	Key Environmental Factor	Objective
Sea	Marine environmental quality	Maintain the quality and productivity of water, sediment and biota so that environmental values are protected.
People and Communities	Social, economic and cultural surroundings	Protect the rich social, economic, cultural and heritage values of the Northern Territory.

1. Terrestrial flora and fauna

Objective: Protect the NT's flora and fauna so that biological diversity and ecological integrity are maintained.

The Proposal area is largely contained to areas of previously cleared and disturbed land, and is within the Darwin Harbour Site of Conservation Significance[1].

Vegetation of the Proposal area includes mangroves and eucalypt woodland. Mangroves are identified as sensitive or significant vegetation under the NT Planning Scheme's Land Clearing Guidelines[2]. One threatened flora species, the Darwin cycad (*Cycas armstrongii*) may occur within or immediately adjacent to the Proposal area. There are no threatened ecological communities[3] within the Proposal area.

Thirteen threatened terrestrial fauna species may occur within or immediately adjacent to the Proposal area. Nine threatened species are listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Seven weeds (mission grass, gamba grass, grader grass, lantana, coffee bush, bellyache bush and mimosa) declared under the *Weed Management Act 2001* are likely to occur in the Proposal area. Gamba grass, bellyache bush and mimosa are further recognised as Weeds of National Significance and bellyache bush, gamba grass and grader grass are subject to Statutory Weed Management Plans.

The existing pipeline route and proposed pipe-stringing works align with the disturbed utility and road easement and do not require land clearing. The total land clearing for the Proposal is up to 0.3 ha in mangrove vegetation for excavation of HDD exit point and pipe connection works. Advice from the Department of Environment and Natural Resources (DENR) confirms that no significant impact on biodiversity from clearing of mangroves is likely.

The alteration of drainage regimes from trenching activities may cause off-site impacts on mangrove communities through mobilisation of silt. The Proponent has committed to develop an Erosion and Sediment Control Plan (ESCP) by a certified professional in erosion and sediment control (CPESC) and comply with International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control[4]. Actions outlined in the ESCP would minimise the impact from trenching on mangroves outside the immediate disturbance footprint.

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[1] NT Department of Natural Resources, Environment, the Arts and Sport (NRETAS) 2009. Recognising sites of conservation significance (SOCS) for biodiversity values in the Northern Territory. Information for individual SOCS available at: https://nt.gov.au/environment/environment-data-maps/important-biodiversity-conservation-sites/conservation-significance-list

[2] DENR 2019. Land Clearing Guidelines https://nt.gov.au/__data/assets/pdf_file/0007/236815/land-clearing-guidelines-2019.pdf

[3] Australian Government Department of Agriculture, Water and the Environment (DAWE) 2020. Threatened ecological communities. Available at: http://www.environment.gov.au/biodiversity/threatened/communities

[4] International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control. Available at: https://www.austieca.com.au/publications/best-practice-erosion-and-sediment-control-bpesc-document

There is widespread suitable habitat in the surrounding area for all threatened flora and fauna species. Advice from the DENR's Flora and Fauna Division is that the Proponent has identified appropriate mitigation measures to address risks to flora and fauna and, combined with the small linear footprint of the Proposal, the potential impact and risks to all threatened flora and fauna are considered very low.

Construction works may result in the introduction and spread of declared weeds through vehicle movements, vegetation clearing and import of gravel and fill. The Proponent has committed to developing a Weed Management Plan to mitigate weed associated impacts.

The Proponent has committed to developing a Construction Environment Management Plan (CEMP) in accordance with the Australian Pipeline and Gas Association's (APGA) Code of Environmental Practice for Onshore Pipelines. The CEMP would contain the Flora and Fauna Management Plan, Erosion Sediment Control Plan and Weed Management Plan.

The NT EPA is satisfied that the potential impacts and risks to terrestrial flora and fauna can be mitigated through implementation of the CEMP and associated sub-plans outlined in the NOI. The NT EPA considers that its objective for Terrestrial flora and fauna is likely to be met.

2. Terrestrial environmental quality

Objective: Maintain the quality of land and soils so that environmental values are protected.

The Proposal area mostly occurs in previously cleared and disturbed areas and is characterised by low lying saline muds and clays with periodic tidal inundation. The NOI identifies that the Proposal area is classified as high risk for potential acid sulfate soils[5].

Erosion and sediment control during construction and rehabilitation would be managed under the Proponent's ESCP. The ESCP includes the provision for sediment fencing associated with HDD.

Acid sulfate soils are likely to be encountered during the excavation, drilling, trenching and backfilling activities of the Proposal. The Proponent has provided detail on the storage, collection and transport of acid sulfate soils and a commitment to develop an Acid Sulfate Soil Management Plan in accordance with the Queensland Government's Acid Sulfate Soil Technical Manual[6]. The plan would address testing, treating and disposal and would provide measures sufficient to ensure the Proponent meets its obligations under the section 12 general environmental duty in the *Waste Management and Pollution Control Act 1998* (WMPC Act).

Potential for soil contamination due to spills or releases of hydrocarbons or other chemicals during HDD activities is addressed through information provided in the NOI and the Proponent's commitment to developing a Drill Fluids Management Plan. A combination of the following chemicals are likely to be used: water, sodium acrylate, sodium carbonate (soda ash), wood fibre, polyacrylamide, cristobalite, quartz (crystalline silica), smectite clay, albite, kaolinite, cellulose derivative and anionic polymer. The Proponent's preferred option is to reuse drill fluid by way of a temporary enclosed drill fluid return pipe connecting the exit and entry points for HDD. The alternate option for transporting drilling fluid is by using vacuum trucks which would increase traffic movements, operational time and risk of spills.

Drilling muds may escape to the environment during the drilling process, known as a frac-out event. Horizontal directional drilling will be conducted to a depth of cover greater than 15 m below the seafloor to mitigate the likelihood and potential impacts of a frac-out event. The Proponent has committed to preparing and implementing a Frac-out Management Plan which includes the following

[5] NRETAS 2008 Acid Sulfate Soils of the Darwin Region Technical Report No.09/2008D. Available at: https://pdfs.semanticscholar.org/6bbe/afc5b6d39b2aadac19ffb5215153b6b3bce0.pdf
[6] Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines v4.0. Available at: https://www.qld.gov.au/environment/land/management/soil/acid-sulfate/national-guidance

actions: containment by sandbags and silt fencing; fluid removal using a vac-truck; adjusted drilling methods; and shallow trenching if the frac-out is close to the exit point.

The Proponent has also committed to developing a Pipeline Management Plan (PMP) in accordance with, and authorised under the *Energy Pipelines Act 1981* and *Energy Pipelines Regulations 2001*. The PMP would contain the Drill Fluid, HDD and Frac-out plans.

Waste and contaminated soils would be contained in large bunded waste bins. At the conclusion of the Proposal, drill fluids and contaminated soils from the entry and exit point excavations would be disposed at a waste disposal facility licensed to accept the waste.

The NT EPA is satisfied that the potential impacts and risks to terrestrial environmental quality can be effectively mitigated through implementation of the PMP, CEMP and all associated sub-plans outlined in the NOI. The NT EPA considers that its objective for Terrestrial environmental quality is likely to be met.

3. Marine environmental quality

Objective: Maintain the quality and productivity of water, sediment and biota so that environmental values are protected.

The marine environmental quality of Darwin Harbour, including the zone of influence of the Proposal, is considered to be in very good condition[7] and has multiple conservation, heritage and beneficial values.

The Proposal has the potential to impact on water quality of Darwin Harbour through sedimentation or pollution from trench dewatering, hydrostatic testing, frac-out of drilling fluids and HDD waste.

The potential for sedimentation impacts from trenching activities on water quality would be adequately addressed by the Proponent's ESCP.

The water that accumulates during trenching activities may be acidic as a result of disturbance to acid sulfate soils. The Proponent indicates that water from trenching activities will be neutralised with lime before discharging into the marine environment. The Proponent has committed to management measures in accordance with the Australian Government's Guidance for the dewatering of acid sulfate soils in shallow groundwater environments[8].

Two hydrostatic tests are required to test the integrity of the pipe prior to and post installation. Each test would use 150 000 litres of potable water from the existing water pipeline located in the Proposal area. Hydrostatic test water is not likely to contain any contaminants as no chemicals are used and any wastes from within the pipeline would be removed prior to hydrostatic testing. The hydrostatic test water would be discharged into Darwin Harbour during changing tides to minimise changes in water quality. Overnight testing of water quality during the pressurisation phase of hydrostatic test will inform discharge suitability and rate. Licensed contractors would be on standby should the water not be suitable for discharge to the environment. The Proponent has committed to these monitoring and management measures in its Wastewater Management Plan.

Drilling muds may enter the marine environment during HDD drilling and/or fluid return via pipeline or vac-trucks. The likelihood of a frac-out event occurring to the marine environment is very low due to the proposed depth of cover below the seafloor during HDD. The Proponent has committed to management responses as described in the Terrestrial environmental quality factor and to be implemented through the Frac-out Management Plan.

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[7] https://denr.nt.gov.au/water/water-management/darwin-harbour

[8] National Acid Sulfate Soils Guidance: Guidance for the dewatering of acid sulfate soils in shallow groundwater environments. Available at: https://www.qld.gov.au/environment/land/management/soil/acid-sulfate/national-guidance

The Proponent has committed to developing a Pipeline Management Plan (PMP) in accordance with, and authorised under, the *Energy Pipelines Act 1981* and *Energy Pipelines Regulations 2001*. The PMP would contain the Hydrotest Water and Frac-out management plans.

Containment of pollutants (drill fluids and contaminated soil) within the Proposal area including layout areas, is appropriate and would avoid potential significant impacts on the marine environment via run off or in the case of flood events.

The NT EPA is satisfied that the potential impacts and risks to marine environmental quality can be mitigated through implementation of PMP, CEMP and all associated sub-plans outlined in the NOI. The NT EPA considers that its objective for Marine environmental quality is likely to be met.

4. Social, economic and cultural surroundings

Objective: Protect the rich social, economic, cultural and heritage values of the Northern Territory.

Social and economic considerations

There are no residential areas in close proximity to the Proposal, with the nearest being 11 km from pipe string works, at Bellamack. Channel Island Road services businesses and provides public access to the Channel Island Reserve and boat ramp.

Road trains will be used to cart lengths of pipe, transport a HDD rig and associated infrastructure, parts and equipment. There are likely to be lane closures and road closures within the Proposal area.

Channel Island Power Station is the main source of power for the Darwin to Katherine population. The station is run by natural gas, supplied by the Proponent, and has diesel back-up capability. During commissioning of the new pipeline, diesel generators will be used to avoid significant interruption to power supply.

Potential impacts from the Proposal on social and economic surroundings include affecting public and commercial road users, local fishers and the Darwin power supply.

The Proponent has consulted with government regulators on environmental management matters including traffic, waste discharge, emissions, heritage and power impacts. The Proponent has committed to wider consultation with the local community and Channel Island businesses through a Community Consultation Plan.

Lane and road closures would likely employ automated traffic light system. All traffic impacts to the public, industry and fishers would be communicated and managed through Traffic Management Plan approved by the Department of Infrastructure, Planning and Logistics prior to subsequent approval of a permit to work on a road reserve.

Interruption of the Darwin power supply could occur during hot tap works, conducted during installation of a temporary bypass in the existing pipeline, and during commissioning of the new pipeline. The Proponent has identified that these works would occur at night during cooler months when power supply is lowest to avoid the loss of power, consistent with advice from Power and Water Corporation.

The NT EPA considers that impact from the Proposal on social and economic surroundings are not likely to be significant with the implementation of the Proponent's management measures.

Cultural heritage

The Channel Island Reefs and Leprosarium, located above the proposed underground pipeline, are heritage values under the *Heritage Act 2011*. Consultation between the Proponent and the Heritage Branch of the NT Department of Tourism, Sport and Culture identified that the use of HDD would mitigate the potential for significant impact on heritage values. The Heritage Branch confirms that the Proposal is considered exempt works under section 3 (c) of the Heritage Regulations 2012.

No registered or recorded sacred sites are within the Proposal area. The Proponent has applied for an Authority Certificate from the Aboriginal Areas Protection Authority (AAPA) which would identify cultural values and restricted works area if present.

The NT EPA is satisfied that the potential impacts and risks to social, economic and cultural values can be mitigated through implementation of the management measures presented in the NOI. The NT EPA considers that its objective for Social, cultural and economic surroundings is likely to be met.

Conclusion

The NT EPA considers that the potential environmental impacts and risks associated with the Proposal are not significant and that the Proposal does not require assessment under the EA Act.

Comments from NTG advisory bodies have been provided to the Proponent and the NT EPA has provided recommendations to the Proponent to ensure that potential impacts on the environment are minimised and responsibilities under legislation can be met.

DECISION

The proposed action, which was referred to the NT EPA by APA, has been examined by the NT EPA and preliminary investigations and inquiries conducted. The NT EPA has decided that the potential environmental impacts and risks of the proposed action are not so significant as to warrant environmental impact assessment by the NT EPA at the level of a Public Environmental Report or Environmental Impact Statement, under provisions of the *Environmental Assessment Act 1982*.

The proposed action will require assessment and approval under the *Energy Pipelines Act 1981* and the *Traffic Act 1987,* and be subject to general environmental duty requirements under the *Waste Management and Pollution Control Act 1998* to ensure the environmental issues associated with the proposed action are effectively managed.

This decision is made in accordance with clause 8(2) of EAAP, and subject to clause 14A the administrative procedures are at an end with respect to the proposed action.

DR PAUL VOGEL AM MAICD

CHAIRPERSON

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

10 APRIL 2020

Attachment 1: Northern Territory Government Advisory bodies consulted on the Notice of Intent

Department	Division
Department of Environment and Natural Resources	Flora and Fauna Water Resources Weeds Branch Environment Bushfires NT Rangelands
Department of Infrastructure, Planning and Logistics	Lands Planning Infrastructure Transport
Department of Primary Industry and Resources	Fisheries Mining Compliance Petroleum Primary Industry
Department of Tourism, Sport and Culture	Parks and Wildlife Heritage Tourism NT Arts and Museums
NT Police, Fire and Emergency Services	Business Improvement and Planning
Department of Health	Environmental Health Medical Entomology
Department of Trade, Business and Innovation	Economics and Policy Strategic Policy and Research
Department of Local Government, Housing and Community Development	Maintenance Planning Housing supply
Power and Water Corporation	
Aboriginal Areas Protection Authority	Technical
Department of the Attorney-General and Justice	Commercial Division NT Worksafe
Land Development Corporation	
Department of the Chief Minister	Economic and Environmental Policy