



# Pluto North West Shelf Interconnector Pipeline

## 2020 Annual Compliance Report (Ministerial Statement 1117)

**E-REP-054**

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February 2021

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0.1	20/01/2021	Initial draft for internal review
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## 1. INTRODUCTION

This report addresses the status and compliance of the Pluto North West Shelf Interconnector Pipeline (PNI) with the conditions in Ministerial Statement 1117. This report has been prepared for the purpose of meeting the requirements of conditions 4–1 to 4–6 of the Statement, which is to submit annual compliance reports in line with the approved Compliance Assessment Plan. This report covers the reporting period from 21 November 2019 to 20 November 2020.

This report shall be in line with the approved Compliance Assessment Plan which was approved by the Department of Water and Environmental Regulation (DWER) on 2 June 2020.

During the reporting period, notification was sent to DWER in relation to a name change to the proponent. This was changed from DDG Operations Pty Limited to AGI Operations Pty Limited (AGID). This was completed in line with Condition 2-1 of MS 1117

### 1.1 Project Background

The PNI project involves the construction of 3.3 km of natural gas pipeline in the industrialised section of the Burrup Peninsula in the Pilbara Region of Western Australia (WA).

The project will commence at the Pluto Compressor Station (PCS) within the Dampier Bunbury Natural Gas Pipeline (DBNGP) corridor and connect the Pluto Liquefied Natural Gas (LNG) Plant with the Karratha Gas Plant (KGP).

The proposal for the PNI was approved for implementation under Part IV of the *Environmental Protection Act 1986* (EP Act) with the issue of Statement No. 1117 (the Statement) on 21 November 2019. AGID is the Proponent and Nominated Operator of the PNI project.

The Statement requires submission of an annual compliance report to address the status and compliance of the PNI project with Statement conditions and key actions in accordance with the annual compliance reporting requirements of conditions 4–1 to 4–6 of the Statement.

### 1.2 The Proposal

Table 1 presents the key characteristics of the proposal as outlined in Table 2 of Schedule 1 of MS1117.

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**Table 1: Key characteristics of the PNI Project**

Element	Proposal	Authorised Extent
Pipeline construction and associated infrastructure	Figure 1 (of MS1117)	Clearing of no more than 10.69 ha of which is within the KGP Lease and Buffer Zone Lease and 7.43 ha within DBNGP Corridor and Dampier Facilities Area.

### 1.3 Environmental approval to implement the project

AGID was granted environmental approval for the PNI proposal under Part IV of the EP Act. The Minister for Environment approved the proposal on 18 November 2019 with the release of Statement No. 1117, which includes environmental conditions under which the proposal is to be implemented.

The required management plans included for the project are the Construction Environmental Management Plan (CEMP) and the Cultural Heritage Management Plan (CHMP). A Department of Mines, Industry Regulation and Safety (DMIRS) Environment Plan was also required as part of the pipeline licence process.

The initial approved plans (CEMP and CHMP) remain the current versions to be implemented.

## 2. SCOPE

The scope of this report includes all works conducted under MS 1117 during the period 21 November 2019 to 20 November 2020 (the reporting period).

The scope does not include the use of existing facilities for laydown, offices, crib rooms or third party accommodation.

## 3. CURRENT STATUS

Due to project delays, mainly pipe construction and delivery PNI commenced works in November 2020. These works included the commencement of civil activities at the PCS. Works commenced onsite on 9 November 2020. Based on the timing and requirements under Condition 4-6, there is only 12 days of activity included in this reporting period.

The works conducted in the reporting period were:

- Site setup including site office and crib rooms at Dampier Facility
- Barricading and demarcation of the DBNGP Corridor
- Pegging and demarcation of Heritage sites
- Civil work including excavation to commence gabion wall footings at PCS

## 4. COMPLIANCE

The report has been prepared by AGID for submission to the Chief Executive Officer (CEO) of the DWER to meet the requirements of condition 4–1 of Statement No. 1117 and the Compliance Assessment Plan.

### 4.1 Methodology

The audit was conducted in January 2021.

The required reporting includes “whether the proponent has complied with each condition and procedure contained within the statement” and “conformed with each key action”. This section describes how compliance with each condition and conformance with key actions has been audited and reported.

#### *Compliance with Statement No. 1117*

An audit of compliance with the conditions and procedures of the Statement was conducted and a compliance status rating was applied in accordance with terminology described in Section 3.3. The full audit is presented in Section 5.1.

There were no potential non-compliances have been identified during the audit.

### 4.2 Audit terminology

The ‘Status’ field of the audit table (refer to Section 5) describes the implementation of the action and compliance with the condition, procedure or commitment. Although the CEO of the Office of Environmental Protection Authority (OEPA) makes the final determination of compliance, it is necessary to update this field each reporting period, as the project progresses. The OEPA (2012a, 2012b, 2012c and 2012d) has prepared updated guidance related to the preparation of compliance audits, including generic expressions that are used to identify the status of each item (Table 2).

**Table 2: Action implementation status (Source: adapted from DWER Statement of Compliance)**

Status	Description
Compliant (Conformant)	Implementation of the proposal has been carried out in accordance with requirements of the audit. (Conformant – as above in relation to actions of management plans / programmes)
Completed	A requirement with a finite period of application has been satisfactorily completed.
Not required at this stage	The requirements of the audit element were not triggered during the reporting period.
Potentially non-compliant (Potentially non-conformant)	Possible or likely failure to meet the requirements of the audit element. (Potentially non-conformant – as above in relation to actions of management plans / programmes)
In process	Where an audit element requires a management or monitoring plan be submitted to the OEPA or another government agency for approval, that submission has been made and no further information or changes have been requested by the OEPA or the other government agency and assessment by the OEPA or other government agency for approval is still pending.

## 5. TABLE OF COMPLIANCE (AUDIT TABLE)

This report has been prepared to address the status and compliance of the proposal with the conditions in the Statement in accordance with the annual compliance reporting requirements of conditions 4–1 to 4–6 of the Statement. This report addresses all open conditions.

### 5.1 Compliance with Statement No 1117 conditions

The detailed results of the audit of Statement 1117 are presented in Section 5.1 (Table 3). Condition 1-1 of Statement 1117 requires implementation of the proposal as documented in Schedule 1 of the Statement.

#### Corrective actions

No corrective actions have been undertaken as there were no non-compliances identified in this reporting period.

Table 3: Results of audit of Statement No. 1117

Condition No. MS1117	Subject	Phase	Condition	How	Evidence	When	Compliance Status	Notes / Further Information
1-1	Implementation	Overall	When implementing the proposal, the proponent shall not exceed the authorised extent of the proposal as defined in Table 2 of Schedule 1, unless amendments to the proposal and the authorised extent of the proposal have been approved under the Environmental Protection Act (EP Act).  Table 2, Schedule 1: Vegetation Clearing shall not exceed:  No more than 10.69ha of which 3.26ha is within the KGP Lease and Buffer Zone lease and 7.43ha within the DBNGP Corridor and Dampier Facilities Area.	Implement the proposal as per MS1117 Table 2 Schedule 1	Vegetation Drawdown Register  Project Environmental Inspections  Final construction GIS / survey date Compliance Assessment Reports	During and post construction	Compliant	All clearing to date is constrained within the DBNGP Corridor and Dampier Facilities.  Within the reporting period, minimal vegetation was removed as most work was undertaken on existing access road section of Pluto Compressor Station.
2-1	Contact Details	Overall	The proponent shall notify the Chief Executive Officer (CEO) of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.	Notify the CEO of any change of name or address	Copy of correspondence with DWER	Within 28 days of such change	Compliant	The proponent name and physical address was updated during the reporting period.  Within 28 days of this occurring (1 July 2020), AGID provided notification to DWER on 7 July 2021 of the change and updated details.  This included the name change from DDG Operations Pty Ltd to AGI Operations Pty Ltd (AGID).
3-1	Time Limit for Proposal Implementation	Overall	The proponent shall not commence implementation of the proposal after five (5) years from the date of this Statement, and any commencement, prior to this date, must be substantial.	Implement the proposal prior to 21 November 2024	Compliance Assessment Reports  Daily Project Reports	By 21 November 2024	Completed	Work on the project commenced on ground on 9 November 2020. This work included project setup, delineation of heritage sites, pipeline corridor and earthworks commenced at the Pluto Compressor Station.
3-2	Time Limit for Proposal Implementation	Implementation	Any commencement of implementation of the proposal, on or before five (5) years from the date of this Statement, must be demonstrated as substantial by providing the CEO with written evidence, on or before the expiration of five (5) years from the date of this Statement.	Substantially commence the proposal.	Correspondence with DWER including Annual Compliance Assessment Reports of proposal progress	By 21 November 2024	Not required at this stage	
4-1	Compliance Reporting	Overall	The proponent shall prepare and maintain a Compliance Assessment Plan which is submitted to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 4-6, or prior to	Approved Compliance Assessment Plan (this plan)	Correspondence with DWER (submission and approval of Compliance Assessment Plan)	Prior to implementation or 6 months prior to first Compliance Assessment Report being due (21 August 2020)	Compliant	A Compliance Assessment Plan (CAP) was submitted to DWER for approval on 29 April 2020. This meets the six months prior to the first Compliance Assessment Report (21 February 2021) requirement of the condition.  The CAP was approved on 2 June 2020



Condition No. MS1117	Subject	Phase	Condition	How	Evidence	When	Compliance Status	Notes / Further Information
			implementation of the proposal, whichever is sooner.					
4-2	Compliance Reporting	Overall	The Compliance Assessment Plan shall include: (1) the frequency of compliance reporting; (2) the approach and timing of compliance assessments; (3) the retention of compliance assessments; (4) the method of reporting of potential non-compliances and corrective actions taken; (5) the table of contents of Compliance Assessment Reports; and (6) public availability of Compliance Assessment Reports.	Approved Compliance Assessment Plan (this plan)	Correspondence with DWER (submission and approval of Compliance Assessment Plan)	Post submission to DWER	Compliant	The CAP was deemed to meet all requirements as per DWER approval (as detailed by above)
4-3	Compliance Reporting	Overall	After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 4-2, the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 4-1.	Compliance is assessed according to Compliance Assessment Plan	Correspondence with DWER (submission and approval of Compliance Assessment Plan)  Compliance Assessment Report	Within 15 months of the approval of the project (21 February) then annually	Compliant	This Annual Compliance Assessment Report is conducted in line with the approved CAP.
4-4	Compliance Reporting	Overall	The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 4-1 and shall make those reports available when requested by the CEO.	Reports, records and data shall be retained in accordance with document management system	Records available and used as evidence in Compliance Assessment Report	Annually	Compliant	Health, Safety and Environment (HSE) Audits and Weekly HSE Inspection records are kept. Additionally, clearing records, permits and other records are kept as required to inform compliance to the CAP.
4-5	Compliance Reporting	Overall	The proponent shall advise the CEO of any potential non-compliance within seven (7) days of that non-compliance being known.	All non-compliance events are reported within timeframes to the CEO	Correspondence with DWER (includes phone communication and written records)	Within 7 days of known non-compliance	Not required at this stage	There were no non-compliances identified during the reporting period.

Condition No. MS1117	Subject	Phase	Condition	How	Evidence	When	Compliance Status	Notes / Further Information
4-6	Compliance Reporting	Overall	<p>The proponent shall submit to the CEO the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then annually from the date of submission of the first Compliance Assessment Report, or as otherwise agreed in writing by the CEO.</p> <p>The Compliance Assessment Report shall:</p> <p>(1) be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf;</p> <p>(2) include a statement as to whether the proponent has complied with the conditions;</p> <p>(3) identify all potential non-compliances and describe corrective and preventative actions taken;</p> <p>(4) be made publicly available in accordance with the approved Compliance Assessment Plan; and</p> <p>(5) indicate any proposed changes to the Compliance Assessment Plan required by condition 4-1.</p>	Submission of Compliance Assessment Report on time	<p>Correspondence with DWER (includes submission and receipt of Annual Compliance Reports)</p> <p>The approval of the Compliance Assessment Plan detailed the date of 21 February 2020 as the due date for the first report.</p>	Within 15 months of the approval of the project (21 February 2020) then annually	Compliant	This Annual Compliance Assessment Report meets the requirements of the condition.
5-1	Public Availability of Data	Overall	Subject to condition 5-2, within a reasonable time period approved by the CEO of the issue of this Statement and for the remainder of the life of the proposal the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)), management plans and reports relevant to the assessment of this proposal and implementation of this Statement.	All publically available data is updated and available both on request and through the Australian Gas Infrastructure Group (AGIG) Website.	AGIG website hosts relevant documentation and data. Reviewed when undertaking the Annual Compliance Report	Life of the proposal	Compliant	<p>The CHMP and CEMP are included on the AGIG website (<a href="https://www.agig.com.au/articles/pluto-nw-shelf-interconnector">https://www.agig.com.au/articles/pluto-nw-shelf-interconnector</a>)</p> <p>Additionally, the Flora and Fauna Survey completed for the project is included on the website.</p>
5-2	Public Availability of Data	Overall	<p>If any data referred to in condition 5-1 contains particulars of:</p> <p>(1) a secret formula or process; or</p> <p>(2) confidential commercially sensitive information;</p> <p>The proponent may submit a request for approval from the CEO to not make these data publically available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publically available.</p>	Submission of requests to the CEO	Correspondence with DWER (in relation to requests)	As required	Not required at this stage	

Condition No. MS1117	Subject	Phase	Condition	How	Evidence	When	Compliance Status	Notes / Further Information
6-1	Cultural Heritage Management Plan Implementation	Overall	The proponent shall implement the proposal to meet the following environmental objective: (1) Avoid where possible and minimise direct and indirect impact so that the proposal does not cause long term impacts on Aboriginal Heritage values.	Implement Cultural Heritage Management Plan (CHMP)	Compliance Assessment Report details implementation of the CHMP	Prior to and during construction phase	Compliant	Implementation of controls to protect Aboriginal Heritage values includes all personnel completing the Cultural Awareness module completed by Murujuga Aboriginal Corporation (MAC).  Induction records note that all personnel (to date) have completed this module  Additional controls from the CHMP shall be implemented as required in the following reporting period.
6-2	Cultural Heritage Management Plan Implementation	Overall	In order to meet the requirements of condition 6-1, the proponent shall implement the Pluto - NWS Interconnector Cultural Heritage Management Plan (version 1, December 2018).	Implementation of the CHMP	Compliance Assessment Report details implementation of the CHMP	Until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 6-1	Compliant	The Proponent is implementing the approved version of the CHMP and will continue to do so until notice is received from DWER.
6-3	Cultural Heritage Management Plan Implementation	Overall	The proponent shall implement the most recent version of the Cultural Heritage Management Plan which the CEO has confirmed by notice in writing, addresses the requirements of condition 6-1.	Approval of any revisions of the CHMP ensuring Condition 6-1 is met	Correspondence with DWER (approval of any new revisions)  Compliance Assessment Reports against CHMP	Until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 6-1	Compliant	The Proponent is implementing the approved version of the CHMP.
6-4	Cultural Heritage Management Plan Implementation	Overall	The proponent shall continue to implement the Cultural Heritage Management Plan (version 1, December 2018), or any subsequent revisions as approved by the CEO in condition 6-3, until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 6-1.	CEO confirms that the objective in Condition 6-1 has been met by the plan or revisions	Correspondence with DWER (approval of any new revisions)  Compliance Assessment Reports against CHMP	Until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 6-1.	Compliant	The Proponent is implementing the approved version of the CHMP.
7-1	Construction Environmental Management Plan Implementation	Overall	Construction Environmental Management Plan Implementation The proponent shall implement the proposal to meet the following environmental objective:  (1) Avoid, where possible, and minimise direct and indirect impacts as far as practicable to Priority flora; <i>Terminalia supranitifolia</i> (P3) and <i>Rhynchosia bungarensis</i> (P4). (2) Avoid, where possible, and minimise direct and indirect impacts as far as practicable to significant fauna; <i>Dasyurus hallucatus</i> (Northern Quoll) and <i>Liasis olivaceus barroni</i> (Pilbara Olive Python).	Construction Environmental Management Plan (CEMP)	Compliance Assessment Report details implementation of the CEMP  Environmental Line List	Until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 7-1.	Compliant	The Proponent is implementing the approved version of the CEMP.  The Environmental Line List has been developed to avoid or minimize impacts to the listed species.
7-2	Construction Environmental Management Plan Implementation	Overall	In order to meet the requirements of condition 7-1, the proponent shall implement the Pluto North West Shelf Interconnector Construction Environmental Management Plan (Rev B, April 2019).	Implementation of the CEMP	Compliance Assessment Report details implementation of the CEMP  HSE Audits  HSE Weekly Inspections	Until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 7-1.	Compliant	A HSE Audit was completed on 17-18 November 2020. This concluded good waste management, strict controls for maintaining work within the easement (corridor). One minor opportunity for improvement was noted in relation to the use of drip trays when refuelling.

Condition No. MS1117	Subject	Phase	Condition	How	Evidence	When	Compliance Status	Notes / Further Information
								Weekly HSE Site Inspections are being conducted as required by the CEMP.
7-3	Construction Environmental Management Plan Implementation	Overall	The proponent shall implement the most recent version of the Construction Environmental Management Plan which the CEO has confirmed by notice in writing, addresses the requirements of condition 7-1.	Approval of any revisions of the CEMP ensuring Condition 7-1 is met	Correspondence with DWER (approval of any new revisions) Compliance Assessment Reports against CEMP	Until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 7-1.	Compliant	The Proponent is implementing the approved version of the CEMP.
7-4	Construction Environmental Management Plan Implementation	Overall	The proponent shall continue to implement the Construction Environmental Management Plan (Rev B, April 2019), or any subsequent revisions as approved by the CEO in condition 7-3, until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 7-1.	CEO confirms that the objective in Condition 7-1 has been met by the plan or revisions	Correspondence with DWER (approval of any new revisions) Compliance Assessment Reports against CEMP	Until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 7-1.	Compliant	The Proponent is implementing the approved version of the CEMP.

## 6. ENVIRONMENTAL INFORMATION AND MONITORING

Minor additional environmental monitoring took place during the reporting period. This was in relation to assessment of an existing access track (230 m) to ensure that any maintenance works, including pruning of edge vegetation would not impact any conservation species. As the track was not within the previous survey area, AGID engaged Vicki Long and Associates to undertake a flora and vegetation survey along the access track. This access track is controlled by Woodside (inside the Buffer Lease Area) and is outside of the scope of the project boundary.

The targeted flora survey was conducted on 23 March 2020. The survey identified that *Rhynchosia bungarensis* (Priority 4) species was located approximately 5 m from the track in a single location and would not be impacted by any pruning works. No other ecological communities or species were identified.

The report is included in Appendix B.

## 7. STATEMENT REGARDING COMPLIANCE

The audit identified no non-compliances against MS1117 for the 2020 reporting period.

A Statement of Compliance is included as Appendix A.

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# APPENDIX A: STATEMENT OF COMPLIANCE

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APPENDIX B: ENVIRONMENTAL SURVEY – ADDITIONAL  
TRACK MAINTENANCE





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27<sup>th</sup> March 2020

Australian Gas Infrastructure Group  
PO Box Z5267  
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**Attention: Mark Brown – Senior HSE Advisor**

Dear Mark

**Re: Burrup – Pluto-NWS Interconnector Targeted Flora and Vegetation Survey**

This letter details the results of a Targeted survey for conservation listed flora and vegetation as per your email dated 28 February 2020 and additional section request on the 4<sup>th</sup> March 2020.

## **1. Introduction**

Australian Gas Infrastructure Group (AGIG) are constructing an interconnector pipeline corridor between the Woodside Energy Limited (Woodside) operated Karratha Gas Plant (KGP) and the Pluto Liquefied Natural Gas (LNG) plant, located on the Burrup Peninsula in the Pilbara region. This pipeline corridor has been previously surveyed by Astron Environmental Services (Astron) in 2018. Access onto the corridor section west of Burrup Road was not surveyed by Astron (2018).

Vicki Long & Associates (VLA) was, therefore, engaged by AGIG to undertake a Targeted survey for conservation listed flora and vegetation along a short section of existing track, the widening of which would allow vehicular access onto the pipeline corridor. This survey was to accommodate an estimated 1 m widening of a short section of existing track off the Woodside Visitor Centre access road into the interconnector corridor and a second very short section uncleared track off the interconnector corridor back towards the KGP (Figure 2).

## **2. Scope**

The Scope of Work is to survey the edges of an existing track (Track 2) and a small uncleared track (Track 2) on Burrup Peninsula and locate any Priority or Significant Flora and any Priority Ecological Communities (PECs) which may be impacted.

### 3. Methods

Although it is only envisaged that 1 m each side of Track 1 (see Figure 2) will need to be cleared, a distance of 15m out from the edge of the track on its northern boundary was surveyed to accommodate any unforeseen or indirect impacts. The southern edge of the track is fenced within 1 m of the track edge. The entire length of the track (230 m) was walked. Any conservation listed flora, PECS and weeds of significance were recorded and located by handheld GPS and marked on a field map. Note was made of how far out from the edge of the track these occurred.

Track 2 (Figure 2) was determined based on avoidance of any larger trees in the drainage line through which it crosses and where most existing disturbance already is evident. A path of 20 m was walked along this short section of 45 m to ensure no conservation listed flora and no drainage line trees would be impacted.

The survey was conducted by experienced, local botanist Vicki Long, Principal Botanist, VLA, on March 23<sup>rd</sup> 2020.

### 4. Known Conservation Listed Flora and PECs

No State or Commonwealth listed TECs are known to occur within the vicinity of the survey area. The survey area occurs within, or immediately adjacent to, the buffer of two Priority 1 PECs:

- *Burrup Peninsula rock pile communities*: pockets of vegetation in rock piles, rock pockets and outcrops. Comprises a mixture of Pilbara and Kimberley species, communities are different from those of the Hamersley and Chichester Ranges. Includes short-range endemic land snails.
- *Burrup Peninsula Rock pool communities*: calcareous tufa deposits. Habitat for interesting aquatic snails.

Database searches listed eight Priority 3 species and one Priority 4 species within a 20 km buffer of the survey area. There were no threatened flora species or species listed as MNES under the EPBC Act reported within 20 km. Listed Priority flora and their likelihood of occurrence are listed in Table 1.

Table1: Listed Priority Flora and their Likelihood of Occurrence

Species	Life form	Habitat	Likelihood of occurrence
<i>Eragrostis surreyana</i>	Annual	Wetland, waterhole	Unlikely
<i>Gymnanthera cunninghamii</i>	Perennial	Sandy soils, rockpiles.	Likely
<i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	Annual	Cracking clay, basalt. Gently undulating plain with large surface rocks, flat crabholed plain.	Unlikely
<i>Schoenus punctatus</i>	Perennial	Watercourses	Unlikely

Species	Life form	Habitat	Likelihood of occurrence
<i>Stackhousia clementii</i>	Perennial	Skeletal soils. Sandstone hills.	Unlikely
<i>Terminalia supranitifolia</i>	Perennial	Sand. Among basalt rocks.	Likely
<i>Themeda sp. Hamersley Station (M.E. Trudgen 11431)</i>	Perennial	Red clay. Clay pan, grass plain.	Unlikely
<i>Vigna triodiophila</i>	Probably perennial but dying back to rootstock in dry.	Rockpile, rocky hillslopes.	Likely
<i>Rhynchosia bungarensis</i>	Perennial	Pebbly, shingly coarse sand amongst boulders	Likely

### 5. Rainfall Preceding Survey

Rainfall data obtained from Karratha Aero 004083 for 2020 indicate adequate rainfall had been received prior to the field survey. The 70.8 mm of rainfall received in January was followed up with 235 mm in February, largely due to the occurrence of Tropical Cyclone Damien. Vegetation was largely recovered from wind damage received from TC Damien.

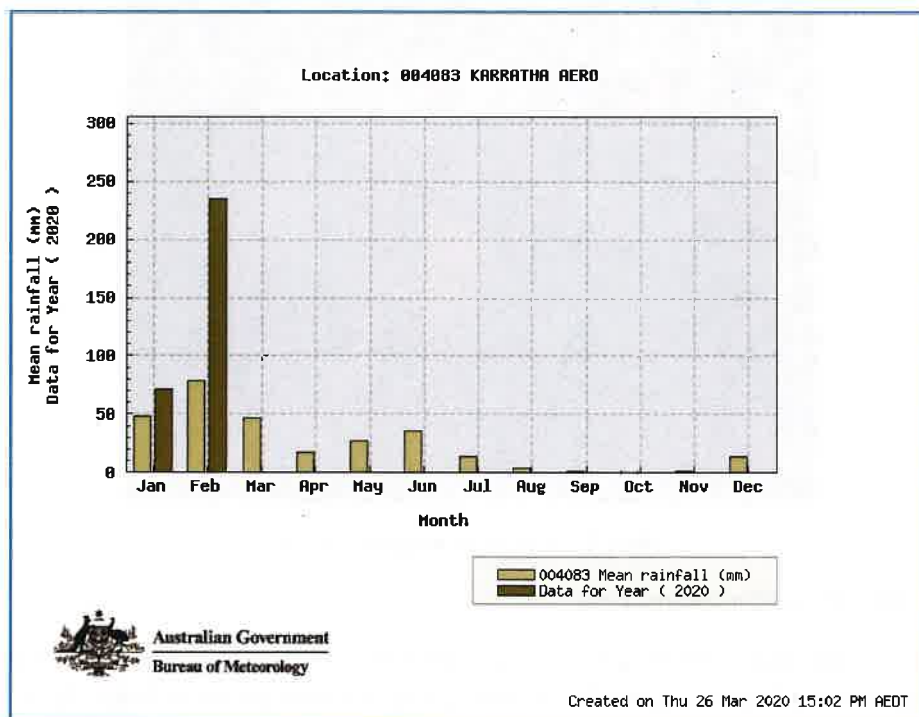


Figure 1: Rainfall received - Karratha Aero 004083 February and March 2020 and Mean Annual Rainfall calculated from 1972 – 2020 (Bureau of Meteorology 2020).

## 6. Limitations

There were no perceived limitations to this survey and the data collected is considered to be complete. The Scope was clear, contextual information was available, preceding rainfall and timing following this rainfall ensured a high proportion and good representation of species were present, aerial imagery was adequate, access was not an issue, there was adequate time for an intensive search and the field botanist has had over 35 years' experience working on the Burrup Peninsula.

## 7. Results

### 7.1 PECs

No PECs were recorded in the survey area despite the corridor intercepting rockpile habitat for the occurrence of the Burrup Rockpile PEC.

### 7.2 Priority Flora

One occurrence of P4 *Rhynchosia bungarensis* was found in association of the rockpile at GPS location 0476803E 7721862N. It was approximately 5 m from the estimated 1 m width to be cleared. This vinelike species is common and widespread on the Burrup Peninsula and has been recorded at other location in the Pilbara. Its close relative, *Rhynchosia minima* was also recorded at several locations in the survey area – it is not a Priority Species.



Plate 1: *Rhynchosia bungarensis* P4

### 7.3 Other Flora Present in Survey Area

A total of 54 plant taxa comprising 19 families and 42 genera were identified within the survey area. The Fabaceae (peas) and Poaceae (grasses) had the highest levels of species richness, Fabaceae with 14 taxa and Poaceae with 9 taxa. A complete flora list is presented in Appendix 1 attached.

#### 7.4 Track 1 Vegetation and Condition

Track one is a narrow track built up with imported stony soils and is fenced on the western southern side. It passes through vegetation of *Triodia epactia* hummock grassland with scattered shrubs of *Dichrostachys spicata* and *Grevillea pyramidalis* and there are small rockpiles with *Brachychiton acuminatus* and *Terminalia circumalata*. The vegetation condition along the edges of the track based on Trudgen 1988 (Attachment 1) is Very Good.

#### 7.5 Track 2 Vegetation and Condition

Vegetation along this very short section of alignment is uncleared but some disturbance has occurred in the area generally in the past. On the eastern end, the alignment runs through *Triodia epactia* hummock grassland with scattered shrubs and at its western extent it runs through a drainage line with scattered *Eucalyptus victrix*, *Terminalia circumalata* low trees over *Triodia angusta* hummock grassland. The vegetation condition of Track 2 based on Trudgen is Very Good.



Plate 2: Track 1 through rockpiles – vegetation surveyed was surveyed for 15 m on the northern side and along the fenceline on the southern side.



Plate 3: Flagged rock at western end of Track 2 through *Eucalyptus victrix* trees in drainage line.

#### 7.6 Weeds

Two commonly occurring environmental weeds were recorded along both Track 1 and Track 2. The introduced buffel grass (*Cenchrus ciliaris*) was relatively frequent in the vicinity of both tracks. The low perennial shrub kapok (*Aerva javanica*) was less frequent along Track 1 but was more frequent where Track 2 intersects the interconnector pipeline corridor.

The Astron report (2018) indicates that at the time of that survey, kapok was predominantly restricted to within the KGP and LNG sites, road verges and pipeline crossing of Burrup Road. It was not found along the majority of the interconnector corridor paralleling Burrup Road. This indicates that weed management should address hygiene measures on the southern side of Burrup Road to prevent it spreading along the portion of the pipeline north of Burrup Road.

## 8.0 Discussion

The one Priority 4 (*Rhynchosia bungalowensis*) found was outside the envisaged 1 m clearing envelope. The plant is widespread and relatively commonly occurring on the Burrup Peninsula in association with rockpiles and drainage gullies. The removal of this one plant, if it was necessary would not impact the population at all.

No Burrup Rockpile PECs were found. Individual trees do occur on the rockpiles which the track intersects but these individual species do not constitute a Burrup Rockpile PEC. The trees included one large and one relatively young northern kurrajong (*Brachychiton acuminatus*) and if the latter was to be removed, it would be possible to extract it and replant it in landscaping either in the KGP garden or as a donation to the City.



Plate 4: Small northern kurrajong

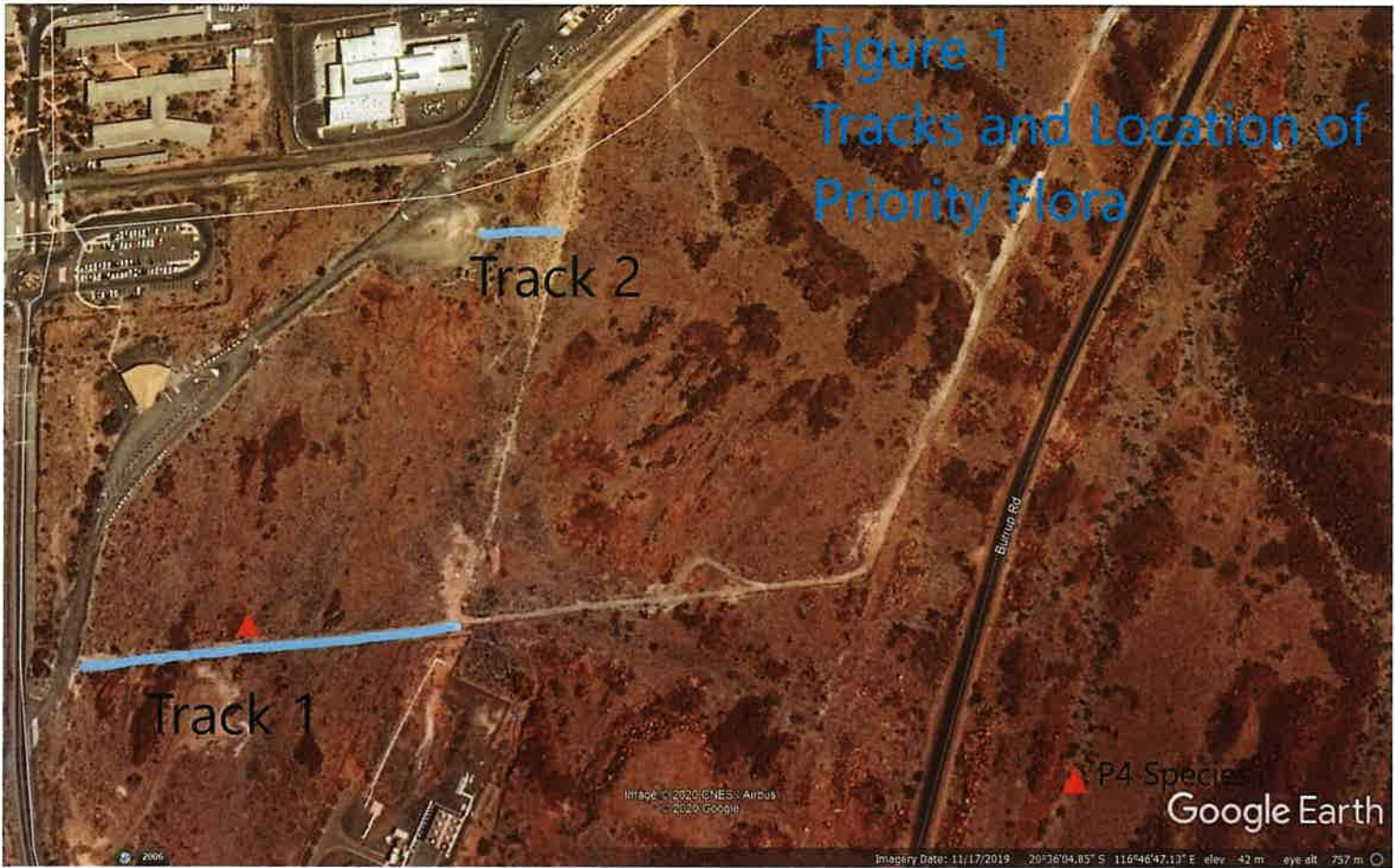
Weeds do occur on the Track 1. Although buffel grass is relatively common on disturbed areas on the Burrup, kapok is less so and the Astron 2018 report indicates they are not present along the interconnector pipeline corridor on north of Burrup Road. Weed management needs to be addressed to prevent the spread of these weeds, particularly kapok into currently weed free areas.

Thank you for the opportunity to conduct this work. If you have any queries on the results, please do not hesitate to contact me.

Yours Sincerely



Vicki Long  
Principal Botanist/Manager



## Attachment 1

### Vegetation condition scale as adapted from Trudgen (1988) (Environmental Protection Authority 2016)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.
Very Good	Vegetation structure altered obvious signs of disturbance. Disturbance to vegetation structure covers repeated fire, aggressive weeds, dieback, logging, grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure covers frequent fires, aggressive weeds, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure includes frequent fires, presence of very aggressive weeds at high density, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas often described as "parkland cleared" with the flora comprising weed or crop species with isolated native trees or shrubs.



## Attachment 2

### Flora list for survey area

Family	Species	Conservation Code	Weed
Amaranthaceae	<i>*Aerva javanica</i>		*
	<i>Gomphrena cunninghamii</i>		
	<i>Ptilotus exaltatus</i>		
Araliaceae	<i>Trachymene oleracea</i>		
Asteraceae	<i>Streptoglossa decurrens</i>		
Boraginaceae	<i>Ehretia saligna</i>		
	<i>Heliotropium cunninghamii</i>		
	<i>Trichodesma zeylanicum</i>		
Cleomaceae	<i>Cleome viscosa</i>		
Combretaceae	<i>Terminalia circumalata</i>		
Convolvulaceae	<i>Bonamia media</i>		
Cucurbitaceae	<i>Cucumis variabilis</i>		
Euphorbiaceae	<i>Euphorbia australis</i>		
	<i>Euphorbia coghlaii</i>		
	<i>Euphorbia tannensis</i>		
Fabaceae	<i>Acacia ampliceps</i>		
	<i>Acacia bivenosa</i>		
	<i>Acacia coriacea</i>		
	<i>Crotalaria novae-hollandiae</i>		
	<i>Crotalaria medicaginea</i>		
	<i>Dichrostachys spicata</i>		
	<i>Indigofera colutea</i>		
	<i>Indigofera linnaei</i>		
	<i>Indigofera monophylla</i>		
	<i>Rhynchosia bungarensis</i>	P4	
	<i>Rhynchosia minima</i>		
	<i>Swainsona formosa</i>		
	<i>Tephrosia rosea</i> var. <i>clementii</i>		
	<i>Abutilon lepidum</i>		
Malvaceae	<i>Brachychiton acuminatus</i>		
	<i>Corchorus walcottii</i>		
	<i>Triumfetta appendiculata</i>		
	<i>Triumfetta clementii</i>		
Menispermaceae	<i>Tinospora smilacina</i>		

Family	Species	Conservation Code	Weed
Myrtaceae	<i>Eucalyptus victrix</i>		
Nyctaginaceae	<i>Boerhavia coccinea</i>		
	<i>Boerhavia gardnerii</i>		
Phyllanthaceae	<i>Flueggea virosa</i>		
	<i>Notoleptopus decaisnei</i>		
	<i>Phyllanthus erwinii</i>		
	<i>Phyllanthus maderaspatensis</i>		
Poaceae	<i>Aristida contorta</i>		
	<i>Cenchrus ciliaris</i>		*
	<i>Chrysopogon fallax</i>		
	<i>Cymbopogon ambiguus</i>		
	<i>Dactyloctenium radulans</i>		
	<i>Enneapogon caeruleus</i>		
	<i>Paspalidium tabulatum</i>		
	<i>Themeda triandra</i>		
	<i>Triodia angusta</i>		
	<i>Triodia epactia</i>		
Portulacaceae	<i>Portulaca oleracea</i>		
Proteaceae	<i>Grevillea pyramidalis</i>		
Violaceae	<i>Hybanthus auranticus</i>		