Australian Government
Department of the Environment and Energy

Title of Proposal - Walton Coal Project

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Mining

1.2 Provide a detailed description of the proposed action, including all proposed activities.

The Walton Coal Project (the Project) is a greenfield project involving the construction and operation of a relatively small scale open cut coal mine. The Project is situated in the Bowen Basin coal field, Central Queensland 170 kilometres (km) west of Rockhampton, and 100 km to the east of Emerald, Figure 1. The Proponents intend to apply for Mining Leases (MLs) and an Environmental Authority (EA) to enable the development of the Project.

The Project is 100% owned by Walton Coal Pty Ltd (WC), a wholly owned subsidiary of Aquila Resources Pty Ltd (Aquila). Aquila is a privately owned exploration and mining company. Aquila holds multiple coal tenures in Queensland and is a joint venture partner in the ownership of the Eagle Downs Coal Mine which will produce up to 4.5 Million tonnes per annum (Mtpa) of product metallurgical coal.

The Walton coal resource is situated in MDL 505 which is held by Argos (QLD) Pty Ltd, a wholly owned subsidiary of Aquila. To the east, south and west, the Project is surrounded by mining tenements, including EPCs and MLs as shown in Figure 2. The proposed site layout and potential ML areas are shown in Figure 3.

The basic stratigraphy of the target resource on site comprises Permian material overlain by Tertiary sediments with multiple coal seams distributed throughout the sequence. There are five target seams (Cancer, Aries, Castor, Pollux and Orion) which are located in the Rangal Coal Measures. Exploration has resulted in total estimated coal resources of 28.4 Million tonnes (Mt) within 200 m of the surface.

Product will be high quality, low ash, Low Volatile Pulverised Coal Injection (PCI) (LVPCI). Approximately 39 % of all Run of Mine (ROM) coal can be exported without processing (bypassed). The remainder of the ROM coal will be processed via a conventional Coal Handling and Preparation Plant (CHPP). The Project is expected to produce approximately 15.6 Mt of ROM coal over its production life of eight years. Approximately 216 Mt of spoil will also be produced over the life of mine.

Key elements of the Project include:
- open cut pit commencing in the north and developed towards the south and progressively backfilled;

- out of pit spoil dumps;
- progressive rehabilitation of the out of pit spoil dumps and backfilled sections of pit;
- haul road and ancillary access tracks;
- conventional Coal Handling and Preparation Plant (CHPP) and conveyor systems;
- ROM coal and product coal stockpiles;
- dedicated rail spur and loop for the Train Load Out (TLO) to enable coal transport to Gladstone for export via the RG Tanna Coal Terminal (RGTCT) or alternatively Wiggins Island Coal Export Terminal (WICET);
- water supply pipeline from Jellinbah Coal Mine;
- water management infrastructure including dams, drains, levees and stream diversions;
- support infrastructure, including offices, workshops, warehousing and sewage treatment;
- site access road (partially off the MLs) and intersection with Capricorn Highway; and
- accommodation camp (off the MLs) for drive in and drive out (DIDO) component of the workforce.

Mining operations will utilise conventional open cut truck and shovel methods progressing from north to south. The mining direction was adopted to reduce potential impact on Taunton National Park by locating the final void to the south.

Mining commences with progressive clearing for, the pit overburden dumps and infrastructure areas. Topsoil will be recovered and either be directly used on progressive rehabilitation or stockpiled for later use. Following stripping of topsoil, spoil removal is undertaken by either free digging or blasting, loading to trucks and transport to dump areas. Initially excavated spoil will be placed in out of pit dumps and then in pit as sufficient room becomes available. Coal will be mined and transported to the ROM coal stockpile for processing or bypassing.

As disturbed areas become available progressive rehabilitation will commence. The general rehabilitation strategy is expected to incorporate a mixture of land uses including nature conservation and grazing which is consistent with existing land use in the Project area. Rehabilitation will commence with reshaping of spoil dumps and other disturbed areas to conform with the final landform design criteria. Drainage features and erosion control will be incorporated as required. Topsoil will be spread over the final landform ahead of revegetatation. Revegetation will include seedbed preparation, seeding, and fertilising and other soil ameliorants. Rehabilitation monitoring and maintenance will be undertaken.
A 250 tph CHPP is proposed to be located within the Mine Infrastructure Area (MIA). Processed and bypassed coal will be transported via conveyor the TLO bin at the rail loop. The rail spur and loop will tie into the main Blackwater to Gladstone line adjacent to the Project. Management of CHPP fine and course reject will involve de-watering, storage and co-disposal within spoil dumps.

Approximately 400 megalitres of water a year will be required for mining and CHPP activities. Water supply at an average of 15 L per second is proposed via a pipeline from the existing Jellinbah Coal Mine located approximately 25 km to the northwest of the Project allowing for the beneficial use of Jellinbah’s excess water. The proposed pipeline route shown in Figure 4 will generally follow existing roads and private property fence lines.

Site water management systems will include drains and levees, storage dams, pipes and pumps

and will focus on the separation of clean and dirty water. Recycling of dirty water produced from pit groundwater inflow, runoff from disturbed areas and coal processing activities will be undertaken. The diversion of two drainage features are proposed, Spectacle Creek will be diverted to the north of the pit and the southern unnamed creek will be diverted to the south of the pit extent.

Site infrastructure will include haul roads for transport of spoil and coal, minor access tracks and an access road from an existing intersection at the Capricorn Highway to the MIA. The MIA will include a, fuel farm, washpad, workshop, warehouses, offices, storage yards and laydown areas, and heavy and light vehicle park up.

The supply of electricity to the MIA is expected to be achieved via connection to the mains power grid which is accessible immediately adjacent to the site or alternatively wholly through diesel powered generators. Regardless, there will be a requirement for diesel powered generators in the construction phase of the Project.

The mine is expected to employ in the order of 100 construction personnel and 169 operational personnel. A pre-existing accommodation camp is located immediately to the south east of MDL 505 and is operated by the landholder. It is proposed that this camp will house the DIDO component of the workforce. There is high availability of low cost housing in Blackwater and the surrounding areas which will provide opportunity to the workforce to live locally.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Walton Coal MDL505	1	-23.58232636998	149.21814923242
Walton Coal MDL505	2	-23.582247707316	149.21814923242
Walton Coal MDL505	3	-23.615045947439	149.21780590966
Walton Coal MDL505	4	-23.614967304398	149.16750912622
Walton Coal MDL505	5	-23.582090381848	149.16750912622
Walton Coal MDL505	6	-23.581775730347	149.18467526391
Walton Coal MDL505	7	-23.568087660079	149.18467526391
Walton Coal MDL505	8	-23.58232636998	149.21814923242
Walton Project Water Supply Pipeline	1	-23.596012954327	149.19463162378
Walton Project Water Supply Pipeline	2	-23.586652742656	149.18750767663
Walton Project Water Supply Pipeline	3	-23.584686226756	149.19051175073
Walton Project Water Supply Pipeline	4	-23.582483693965	149.19128422693

Area	Point	Latitude	Longitude
Walton Project Water Supply Pipeline	5	-23.582011717843	149.1922283645
Walton Project Water Supply Pipeline	6	-23.579730476	149.1944599624
Walton Project Water Supply Pipeline	7	-23.573594525372	149.19720654443
Walton Project Water Supply Pipeline	8	-23.559590897656	149.16476254419
Walton Project Water Supply Pipeline	9	-23.550464134682	149.14356236413
Walton Project Water Supply Pipeline	10	-23.550700179639	149.14296154931
Walton Project Water Supply Pipeline	11	-23.545585777349	149.13133149102
Walton Project Water Supply Pipeline	12	-23.537362975122	149.11334996179
Walton Project Water Supply Pipeline	13	-23.515091944298	149.08202176049
Walton Project Water Supply Pipeline	14	-23.507260774916	149.07421116784
Walton Project Water Supply Pipeline	15	-23.50382711287	149.07081012681
Walton Project Water Supply Pipeline	16	-23.501485481125	149.06596069291
Walton Project Water Supply Pipeline	17	-23.498297646652	149.05915861085
Walton Project Water Supply Pipeline	18	-23.488084250303	149.05074720338
Walton Project Water Supply Pipeline	19	-23.48308549819	149.04435281709
Walton Project Water Supply Pipeline	20	-23.479897218742	149.04244308427
Walton Project Water Supply Pipeline	21	-23.474169930622	149.037421989
Walton Project Water Supply Pipeline	22	-23.47351058768	149.03252963975
Walton Project Water Supply Pipeline	23	-23.471060164882	149.03065209344
Walton Project Water Supply Pipeline	24	-23.47131603445	149.02873163179
Walton Project Water Supply Pipeline	25	-23.464663264428	149.02124290422
Walton Project Water Supply Pipeline	26	-23.463856248808	149.01771311716
Walton Project Water Supply Pipeline	27	-23.460637978914	149.0130246158

Area	Point	Latitude	Longitude
Walton Project Water Supply Pipeline	28	-23.457409788401	149.00639419511
Walton Project Water Supply Pipeline	29	-23.456927521457	149.00339012102
Walton Project Water Supply Pipeline	30	-23.451907903792	148.9983261104
Walton Project Water Supply Pipeline	31	-23.45771489515	148.99025802568
Walton Project Water Supply Pipeline	32	-23.457700131936	148.99024729685
Walton Project Water Supply Pipeline	33	-23.451888218641	148.9983261104
Walton Project Water Supply Pipeline	34	-23.456907837054	149.00340084986
Walton Project Water Supply Pipeline	35	-23.457399946236	149.00641565279
Walton Project Water Supply Pipeline	36	-23.460628136989	149.01304070905
Walton Project Water Supply Pipeline	37	-23.463836565439	149.01771848158
Walton Project Water Supply Pipeline	38	-23.464648501992	149.02124826864
Walton Project Water Supply Pipeline	39	-23.471286511064	149.02873699621
Walton Project Water Supply Pipeline	40	-23.471030641438	149.03065745786
Walton Project Water Supply Pipeline	41	-23.473490905751	149.03254573301
Walton Project Water Supply Pipeline	42	-23.474140407875	149.03743808225
Walton Project Water Supply Pipeline	43	-23.479877537765	149.04245917753
Walton Project Water Supply Pipeline	44	-23.483065817689	149.04437963918
Walton Project Water Supply Pipeline	45	-23.488064570548	149.05076329664
Walton Project Water Supply Pipeline	46	-23.498277968422	149.05917470411
Walton Project Water Supply Pipeline	47	-23.501495320002	149.06604115919
Walton Project Water Supply Pipeline	48	-23.503807435466	149.07082622007
Walton Project Water Supply Pipeline	49	-23.515062430714	149.08202712491
Walton Project Water Supply Pipeline	50	-23.52120111361	149.09066383794

Area	Point	Latitude	Longitude
Walton Project Water Supply Pipeline	51	-23.530664355563	149.10397832349
Walton Project Water Supply Pipeline	52	-23.536969526717	149.11284034207
Walton Project Water Supply Pipeline	53	-23.537343302726	149.11337678388
Walton Project Water Supply Pipeline	54	-23.545290709604	149.13075749829
Walton Project Water Supply Pipeline	55	-23.545438243557	149.13106863454
Walton Project Water Supply Pipeline	56	-23.548339710993	149.13766686871
Walton Project Water Supply Pipeline	57	-23.550660838837	149.14294545606
Walton Project Water Supply Pipeline	58	-23.550670674037	149.14296691373
Walton Project Water Supply Pipeline	59	-23.550434629028	149.14355699971
Walton Project Water Supply Pipeline	60	-23.573584691881	149.19725482418
Walton Project Water Supply Pipeline	61	-23.57975014204	149.19448678448
Walton Project Water Supply Pipeline	62	-23.582041216393	149.19224445774
Walton Project Water Supply Pipeline	63	-23.582513192408	149.19130032017
Walton Project Water Supply Pipeline	64	-23.584705892053	149.19053857281
Walton Project Water Supply Pipeline	65	-23.586662575154	149.18755595639
Walton Project Water Supply Pipeline	66	-23.595983458903	149.19465844586
Walton Project Water Supply Pipeline	67	-23.596003122514	149.19461553051
Walton Project Water Supply Pipeline	68	-23.596012954327	149.19463162378

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The Project is situated in the Bowen Basin coal field, Central Queensland approximately 170 kilometres (km) west of Rockhampton, and 100 km to the east of Emerald, Figure 1. The Project is located in an area where coal mining and grazing are dominant activities.

The Project area is gently undulating with an elevation ranging between 130 m to 160 m. The physiography of the area is characterised by a dissected tableland with a general relief variation of about 80 m. This tableland is formed by a sheet of lateralized Tertiary sediments, overlying the coal bearing Permian formations.

The Project is located over two Freehold properties and is currently used for cattle grazing, which is a typical land use for the region. The northern boundary of the Project area is adjoined by Taunton National Park. Whilst the proposed boundaries for the Project MLs are yet to be finalised it is expected that the northern ML boundary will align with the southern boundary of Taunton National Park and the southern project boundary will be aligned to the north of the Central Rail Line and Capricorn Highway. In the south, the MLs may include sections of Pine Grove Road which runs parallel to and on the northern side of the Central Rail Line. Sections of Pinegrove Road and Red Rock Park Road which are expected to be located outside ML boundaries will be impacted by the Project access route. The potential ML areas are shown in Figure 3.

Coal exploration drilling activities have been periodically undertaken since 2010 and an exploration Seismic Survey was conducted in 2014. Throughout mid 2017 a further exploration program comprising seismic and drilling activities was undertaken to further define the resource and provide geotechnical, geochemical and groundwater information for the pre-feasibility study and environmental approval information requirements.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

Project footprint ~ 940 ha of disturbance within MDL 505. Proposed ML areas ~ 1183 ha.

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Lot 5 HT551 ; Lot 100 RP882349; Lot 661 SP260478; Lot 663 SP129821; Pine Grove Rd (Part).

1.8 Primary Jurisdiction.

Queensland

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 09/2019

End date 09/2029

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

The coal resource is situated in MDL 505 which is held by Argos (QLD) Pty Ltd, a wholly owned subsidiary of Aquila (Owners of WC). To the east, south and west, the Project is surrounded by mining tenements, including EPCs and MLs as presented in Figure 2. Argos also hold EPC 960 which is one of the EPCs adjoining MDL 505 to the southwest.

There is one petroleum tenure underlying the Project, being Authority to Prospect (ATP) 806 which is held by OME Resources Australia Pty Ltd.

WC intend to apply for two MLs and an Environmental Authority (EA) to enable the development of the Project. Tenure requirements for the proposed pipeline will be determined throughout the approvals process.

The two primary pieces of State legislation which are relevant to the Project MLs and EA applications are:

· *Mineral Resources Act 1989 (MR Act);* and

· *Environmental Protection Act 1994.*

The MR Act, administered by the Department of Natural Resources and Mines (DNRM) is “an Act to provide for the assessment, development and utilisation of mineral resources to the maximum extent practicable consistent with sound economic and land use management”. Mining tenure, including the existing MDL 505 and proposed MLs, are granted and administered under the MR Act.

The EP Act, administered by the Department of Environment Heritage Protection (DEHP) was established "to protect Queensland's environment, while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends". When deciding whether to grant or refuse an application for an EA or deciding on the conditions of the authority, the Administering Authority must consider certain matters set out in the EP Act.

A mining activity may only commence when both mining tenure and the associated EA are granted.

The EA application will be supported by a voluntary EIS which WC has been granted approval to undertake in accordance with the provisions of the Queensland EP Act, (see attached). The DEHP decision notice is 13 July 2017.

A range of other State Acts may be applicable to the assessment process and these will be addressed as part of the EIS process, including:

- *Aboriginal Cultural Heritage Act 2003 (CH Act);*

- *Native Title (Queensland) Act 1993;*

- *Electricity Act 1994;*

- *Fisheries Act 1994;*

- *Land Title Act 1994;*

- *Local Government Act 2009;*

- *Mineral and Energy Resources (Common Provisions) Act 2014;*

- *Nature Conservation Act 1992 (NC Act);*

- *Queensland Environmental Offsets Act 2014*

- *Regional Planning Interests Act 2014;*

- *Sustainable Planning Act 2009;*

- *Transport Infrastructure Act 1994;*

- *Vegetation Management Act 1999;* and

- Water Act 2000.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Community consultation and stakeholder engagement forms an integral component of the assessment process for the Project. WC has and will continue to build strong, lasting relationships with the community and key stakeholder groups, with the objective of providing accurate and timely environmental, social and economic information about the Project.

Project related consultation to date has comprised the following:

- landholder negotiation since 2010 and execution of conduct and compensation arrangements for MDL 505;

- Aboriginal Party consultation since 2010 for exploration activities and execution of Cultural Heritage Agreements between Aquila and the Ghungalou Aboriginal Corporation consistent with the CH Act;

- Queensland DEHP engagement since 2014, including a pre-lodgement meeting in May 2017 to advise of the intention to proceed with a voluntary EIS application under the EP Act; and

- Commonwealth Department of the Environment and Energy (DoEE) engagement in May 2017 to advise of the Project and discuss Commonwealth matters including the intention to submit a Referral under the EPBC Act.

The ongoing community and stakeholder consultation program will continue to reflect the current objectives, which are:

- initiate and maintain open and honest communication with affected and interested stakeholders on all aspects of the Project;

- identify stakeholder issues and concerns in the relation to the Project via ‘a range of engagement methods;

- address stakeholder issues and concerns throughout the approvals process; and

- provide feedback to stakeholders on their issues or concerns and how their comments have been used.

Communication and consultation tools will be applied consistent with the level of interest and logistics relative to the individual or group. Communication and consultation tools will include the following options:

- face to face meetings;

- phone meetings;

- group forums;

- written notices and communications;

- newsletters;

- information on the WC Website; and

- media releases.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

The EPBC Act requires an assessment and approval for any activity that has, or is likely to have, a significant impact on a MNES. Such an activity is deemed to be a 'controlled action'. It is an offence to undertake a 'controlled action' without the approval of the Commonwealth Environment Minister.

WC has conducted assessments against the MNES, including as a component of terrestrial ecology studies which were commenced in April 2017 within MDL 505. The MNES assessments concluded that the Project area within MDL 505 and approximately 2.3 km of the proposed pipeline route immediately adjacent to MDL505 potentially provides habitat for threatened species, including, the Koala and Squatter Pigeon (both known to occur in the Project area) and the Bridled Nail-tail Wallaby (known to populate the adjacent Taunton National Park located immediately to the north of the Project site). Based on the assessments of MNES, WC has concluded that the pipeline component of the Project is not likely to have significant impact on MNES, however, there is potential for significant impact to MNES within the MDL 505 component of the Project. Therefore, it is expected that the Bilateral Agreement between the Commonwealth and State of Queensland for Environmental Assessment will be applicable to the Project. The Australian Government *EPBC Act Environmental Offsets Policy 2012* will also be considered as part of the EIS process.

The EP Act will be applicable to the Project and an EA for Mining Activities will be required. An application for an EA for Mining activities on MLs will be made. As discussed in **Section 1.12**, WC applied to DEHP to voluntarily undertake an EIS for the Project in accordance with relevant

provisions of the EP Act. Approval of the application to voluntarily undertake an EIS was granted by DEHP on 13 July 2017.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
The Project area within MDL 505 and	Koala The Koala is listed as vulnerable under

Species	Impact
disturbance footprint is predominantly remnant vegetation, with the balance grassland cleared for pasture containing native and exotic grasses and areas of regrowth vegetation. The vegetation has been impacted by historic grazing activities and exploration activities relating to coal and gas. The proposed water supply pipeline route is to be located adjacent to existing roads and private property fence lines and within fire breaks and cleared pasture. The proposed route by-passes areas of mapped (Queensland Government) regional ecosystems along approximately 92 % of the pipeline length. The remaining approximately 8 % of pipeline adjacent to MDL 505 is to be located within mapped regional ecosystems along existing tracks, fire breaks and adjacent to fence lines, see Figure 4. The total disturbance area within the proposed MLs is expected to be approximately 940 hectares. Some of this disturbance is expected to impact areas of “of concern” (OC) vegetation and or habitat of significance to conservation listed species. As a result of these potential impacts, offset areas are expected to be applicable under the Queensland Environmental Offsets Act 2014 and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Environmental Offsets Policy. A post wet season terrestrial ecology survey was undertaken within the MDL 505 component of the Project during April 2017 by Ecological Survey and Management (EcoSM). The survey included Flora and Fauna attributes with a focus on conservation significant communities and species. The study area comprised most of the area within the potential MLs shown in Figure 3. The potential ML alignments and pipeline route were selected after the post wet season terrestrial ecology survey was completed. The balance of the ML areas not included in EcoSMs preliminary report were traversed by the survey team and vegetation and habitat information extrapolated for representation on Referral figures and use in calculations. Further terrestrial ecology	the EPBC Act. EcoSM April 2017 describe Koala distribution and habitat preferences as below. Distribution: of the species is widespread in sclerophyll forest and woodlands on foothills and plains on both sides of the Great Dividing Range from about Chillagoe, Queensland to Mount Lofty Ranges in South Australia (Menkhorst and Knight 2011). Nearest record: Koala scats were identified in the study area during the post-wet season field survey. General habitat preferences: Koalas use a range of habitats, including temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species. Habitat essentially includes any forest or woodland containing species that are known Koala food trees, or shrubland with emergent food trees. Koala are known to occur in modified or regenerating native vegetation communities (DotEE 2017i). Foraging habitat: is described by the EPBC Act referral guidelines for the vulnerable koala defines Koala food trees as species of the Corymbia, Melaleuca, Lophostemon or Eucalyptus genera (DotEE 2017i). Refuge habitat: Habitat that allows for the persistence of the Koala during droughts and periods of extreme heat, especially in riparian environments and other areas with reliable soil moisture and fertility. Such habitats occur on permanent aquifers, in riparian zones, on upper or mid-slopes, on fertile alluvial plains or where soil moisture/rainfall is reliable (DotEE 2017i). Koala habitat is considered to be present within the Project area with eight potential food tree species identified within the study area and present within all remnant and some non-remnant vegetation. Habitat mapping for the Koala covers all of the remnant vegetation mapped within the proposed ML boundaries and some areas of regrowth, Figure 6. Koalas are considered to be present in the Project area on the basis of scats which were identified during the post wet season survey in the far north west of the study area. Assessment against the EPBC Act Significant Impact Criteria (vulnerable) has been

Species	Impact
assessments will be undertaken as part of the EIS process and will include consideration of the pipeline route. EcoSMs preliminary report is attached. The following databases were reviewed to assess the potential for MNES to occur within the Project area: Protected Matters Search Tool; Wildlife Online; Regional Ecosystem (RE) mapping; Referrable Wetland mapping; Essential Habitat mapping; BirdLife Australia Atlas; Atlas of Living Australia; Aerial photography (including Google Earth and Queensland Globe); and Approved Conservation Advice, National Recovery Plans and Survey Guidelines for MNES species occurring within the study area. Queensland Government Biodiversity Status RE mapping identifies the majority of the remnant vegetation within MDL 505 and along the proposed pipeline route as No Concern at present (NC) with the balance predominantly OC RE, Figure 4. One isolated patch (approximately 1.3 hectares) of Endangered (E) RE is mapped within the eastern boundary of MDL 505. Field-validation RE mapping undertaken in April 2017 found the vegetation to be broadly similar to the Queensland Government RE mapping, Figure 5. Field validation mapping resulted in a reduction in OC RE and confirmation of the absence of E RE within the study area. The EPBC Protected Matters Search Tool was used to generate a number of reports with varying buffers ranging from 5 to 30 km from the centre point of MDL 505, see attached (report 30 km buffer). These reports have identified the potential for up to five Threatened Ecological Communities (TECs), to be present within the Project area including: 1. Brigalow (dominant and co-dominant); 2. Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions; 3. Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin; and 4. Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions; and 5. Weeping Myall Woodlands. Field-validation RE mapping within the MDL	undertaken to determine if there is potential for significant impact to the species as a result of the Project. Lead to a long-term decrease in the size of an important population of a species. An important population of Koala has not been identified in the vicinity of the Project. Reduce the area of occupancy of an important population. An important population of Koala has not been identified in the vicinity of the Project. Fragment an existing important population into two or more populations. An important population of Koala has not been identified in the vicinity of the Project. Adversely affect habitat critical to the survival of a species. A preliminary assessment of the Project area against the EPBC Act habitat assessment tool indicates the habitat is considered critical to the survival of the Koala, because: 1. Scat recording indicates Koalas use the area; 2. there are more than two species of koala food tree in the area; and 3. the area is contiguous with more than 1,000 hectares of remnant vegetation in the landscape. Inclusive of non-remnant vegetation, the conceptual Project footprint would impact approximately 679 hectares of mapped Koala habitat. Therefore, there will be an adverse effect to critical habitat. Disrupt the breeding cycle of an important population. An important population of Koala has not been identified in the vicinity of the Project. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. Whilst approximately 679 hectares of habitat will impacted by the conceptual Project footprint, there is significant contiguous remnant vegetation mapped as the same Regional Ecosystems as those expected to be impacted by the Project. Subsequently it is not expected that the Project related impact would result in species decline. Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat. There will be increased vehicle traffic within the area as a result of the Project. However, considering proposed vehicle hygiene controls

Species	Impact
505 component of the Project confirmed that no vegetation communities in the disturbance footprint and surrounding areas incorporated within the proposed MLs comprise the species or structure that represent a TEC under the EPBC Act. The EPBC Reports identified the potential for up to 27 Listed Threatened Species (LTS) to occur in the Project area, including: eight birds, seven mammals, six reptiles and six plants. The EPBC reports also identified the potential for 15 Listed Migratory Species (LMS). The results of database reviews, including identified EPBC LTS and LMS, were assessed using Likelihood Of Occurrence Table (LOOTs) methods based on mapping of identified habitats in the study area and known species distributions, (see attached EcoSM preliminary report). The outcomes of the LOOTs concluded a low likelihood of occurrence for all but four species. Habitat for the remaining four species (all LTS) is known to be present in the MDL 505 component of the Project area and targeted survey effort was applied to these LTS during the April 2017 post wet season survey. Targeted LTS included: 1. Koala (Phascolarctos cinereus); 2. Squatter Pigeon, Southern Sub-species (Geophaps scripta scripta); 3. Bridled Nail-tail Wallaby (Onychogalea fraenata); and 4. Ornamental Snake (Densonia maculata). The survey concluded: 1. Koala – Present in the Project area; 2. Squatter Pigeon – Present in the Project area; 3. Bridled Nail-tail Wallaby – High likelihood of presence in the Project area; and 4. Ornamental Snake – Unlikely to be present in the Project area.	and weed and pest management programs it is not expected that invasive species harmful to the Koala would become established as a result of the Project. Introduce disease that may cause the species to decline. Project activities are not expected to increase the risk of disease introduction. Proposed vehicle hygiene controls, domestic animal controls and pest management activities will ensure pathogens are not introduced. Interfere substantially with the recovery of the species. There is no National Recovery Plan applicable for the Koala. The applicable Approved Conservation Advice for the Koala (Queensland, New South Wales and Australian Capital Territory), published by the Australian Government identifies that for Queensland the Koala is “vulnerable throughout the South East Queensland Bioregion, and ‘least concern’ (common) elsewhere in the state under the Nature Conservation Act 1992”. The Approved Conservation Advice identifies the main treats to the species as loss and fragmentation of habitat, vehicle strike, disease, and predation by dogs. Project controls will include: - Final design of spoil dump and infrastructure layout to minimise habitat clearing impacts; - Restrict clearing of vegetation to only that necessary; Use of spotter catchers during clearing activities; - Inclusion of nature conservation as a post mining land use in the rehabilitation strategy; - Limiting of vehicle access and application of speed restrictions onsite; - Ensuring vehicle hygiene procedures are applied; - Prohibiting of domestic animals on the MLs and exclude livestock during the life of mine; and - Control feral animals and weeds. In accordance with the EPBC Act environmental offsets policy, offsets are proposed to be developed for the Project to compensate for Koala habitat impacts. Therefore, recovery of the species is not likely to be impacted by the Project.
Squatter Pigeon	Squatter Pigeon The Squatter Pigeon, Southern Sub-species is listed as vulnerable under the EPBC Act. EcoSM April 2017 describe Squatter

Species	Impact
	Pigeon distribution, habitat preferences and notable features as below. Distribution: The southern sub-species for the Squatter Pigeon is described as occurring south of the Burdekin River-Lynd divide in the southern region of Cape York Peninsula to the Border Rivers region of northern New South Wales, and from the east coast to Hughenden, Longreach and Charleville (Higgins and Davies 1996). The known distribution of the southern sub-species overlaps with the known distribution of the northern subspecies (DotEE 2017e). Nearest record: The species was recorded in the study area during the post-wet season field survey. General habitat preferences: This species is known from tropical dry, open sclerophyll woodlands and sometimes savannah with Eucalyptus, Corymbia, Acacia or Callitris species in the overstorey. The groundcover layer is patchy consisting of native, perennial tussock grasses or a mix of grasses and low shrubs or forbs. However, the groundcover layer rarely exceeds 33% of the ground area. It appears to favour sandy soil dissected with low gravely ridges and is less common on heavier soils with dense grass cover. It is nearly always found in close association i.e. within 3 km, with permanent water. While the species is unlikely to move far from woodland trees, where scattered trees still occur and the distance of cleared land between remnant trees or patches of habitat does not exceed 100 m, individuals may be found foraging in, or moving across modified or degraded environments (DotEE 2017e). Foraging habitat: This occurs in any remnant or regrowth open-forest to sparse, open woodland or scrub dominated by Eucalyptus, Corymbia, Acacia or Callitris species, on sandy or gravelly soils. It feeds primarily on seeds of grasses, herbs and shrubs. Breeding habitat: This occurs on well-draining, stony rises occurring on sandy or gravelly soils or on low ‘jump-ups’ and escarpments (i.e. land zones 5 and 7), within 1 km of a suitable, permanent waterbody. Dispersal habitat: This can be any forest or

Species	Impact
	woodland occurring between patches of foraging or breeding habitat, and suitable waterbodies and may include denser patches of vegetation not suitable for foraging or breeding. Notable Features: This species can breed throughout most of the year, however, peak breeding is generally April to October when the primary source of food, grass seed, is most abundant (DotEE 2017e). The post wet season terrestrial ecology survey resulted in preliminary habitat mapping for the Squatter Pigeon covering approximately 410 hectares, see Figure 6, and the species being recorded at five locations within the study area, (see attached EcoSM preliminary report). Habitat within the Project area is considered to be grassy woodland within any of the REs and is within 1 km permanent water or, within 1 km of wetlands or a => third order stream (Queensland Government mapped). Permanent water is available in a number of farm dams which are present within and adjacent to the Project area and there is a third order stream located to the northwest of the Project area. Queensland Government mapping identifies an area of Essential Habitat for the Squatter Pigeon within the Project area. Assessment against the EPBC Act Significant Impact Criteria (vulnerable) has been undertaken to determine if there is potential for significant impact to the species as a result of the Project. Lead to a long-term decrease in the size of an important population of a species. An important population of Squatter Pigeon has not been identified in the vicinity of the Project. Reduce the area of occupancy of an important population. An important population of Squatter Pigeon has not been identified in the vicinity of the Project. Fragment an existing important population into two or more populations. An important population of Squatter Pigeon has not been identified in the vicinity of the Project. Adversely affect habitat critical to the survival of a species. The species was recorded in The Project area and preliminarily mapped habitat within the Project area contains values suitable for

Species	Impact
	foraging and dispersal. Therefore, habitat within the Project area may be considered Critical in terms of the Significant Impact Guidelines. The conceptual Project footprint would directly impact approximately 285 hectares of preliminary mapped Squatter Pigeon habitat vegetation and grass land. Some of the existing farm dams will also be impacted which will result in further habitat impact. However, habitat opportunities are expected to be created as a result of permanent water storages which are to be developed as part of the Project. Based on the above there will be an adverse effect to critical habitat. Disrupt the breeding cycle of an important population. An important population of Squatter Pigeon has not been identified in the vicinity of the Project. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. Whilst approximately 285 hectares of habitat will impacted by the conceptual Project footprint, there is significant contiguous remnant vegetation mapped as the same REs as those expected to be impacted by the Project. Subsequently it is not expected that the Project related impact would result in species decline. Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat. There will be increased vehicle traffic within the area as a result of the Project. However, considering proposed vehicle hygiene controls and weed and pest management programs it is not expected that invasive species harmful to the Squatter Pigeon would become established as a result of the Project. Introduce disease that may cause the species to decline. Project activities are not expected to increase the risk of disease introduction. Proposed vehicle hygiene controls, domestic animal controls and pest management activities will ensure pathogens are not introduced. Interfere substantially with the recovery of the species. There is no National Recovery Plan applicable for the Squatter Pigeon. The Approved Conservation Advice for the Squatter Pigeon,

Species	Impact
	published by the Australian Government identifies the main treats to the species as clearing of habitat, grazing of habitat by livestock and feral herbivores and predation by feral cats and foxes. Project controls will include: - Final design of spoil dump and infrastructure layout to minimise habitat clearing impacts; - Restricting of vegetation clearing to only that necessary; - Prohibiting of domestic animals on the MLs and exclude livestock during the life of mine; and - Control programs for feral animals and weeds. In accordance with the EPBC Act environmental offsets policy, offsets are proposed to be developed for the Project to compensate for Squatter Pigeon habitat impacts. Although loss of habitat for the Squatter Pigeon will occur as a result of the Project is not expected to interfere with the recovery of the species.
Bridled Nail-tail Wallaby	Bridled Nail-tail Wallaby The Bridled Nail-tail Wallaby is currently listed as endangered under the EPBC Act. However, the current (December 2016) Approved Conservation Advice for the Bridled Nail-tail Wallaby, published by the Australian Government, indicates that the conservation status is to be revised to vulnerable. The Conservation Advice States “The Committee notes that the Action Plan for Australian Mammals 2012 (Woinarski et al., 2014) reviewed the conservation status of all Australian mammals and the review of the bridled nailtail wallaby considered it to be Vulnerable. This differs from the current EPBC Act status, which was determined when the species was grandfathered in from the Endangered Species Protection Act 1992 (Cwlth).” The Threatened Species Scientific Committee (the Committee) is using the findings of Woinarski et al. (2014) to prioritise future reassessment of the conservation status of each of threatened mammals listed under the EPBC Act.”. EcoSM April 2017 describe Bridled Nail-tail Wallaby distribution and habitat preferences as below. Distribution: The only known naturally occurring population of this species occurs in Taunton National Park

Species	Impact
	(Scientific) (an area of 11,000 ha) near the town of Dingo with some sightings within 10 km of the park. Another three reintroduced populations occur at Avocet Nature Refuge near Emerald and Idalia National park in Queensland and in Scotia Sanctuary near Broken Hill in southern Australia (DotEE 2017g). Nearest record: A population of this species is known to occupy the adjacent Taunton National Park, north of the study area. The closest known record of this species is immediately north of the study area on the southern boundary of the National Park (CSIRO 2017). General habitat preferences: In Taunton National Park Bridled Nail-tail Wallabies use open grassy woodland dominated by Poplar Box (Eucalyptus populnea), dense forest dominated by Brigalow (Acacia harpophylla) and transitional vegetation between woodland and forest areas of very dense Brigalow regrowth (TSSC 2016a). The species prefers areas with the most fertile soil. During the day (when they are resting), Bridled Nail-tail Wallabies prefer habitat that consists of young Brigalow regrowth or contains fallen logs or dense tussocky grasses or shrubs in which to shelter. They generally choose shelter sites with the densest cover of foliage and stems at Bridled Nail-tail Wallaby height (25—50 cm), and this type of shelter is concentrated at the edges of wooded areas such as Brigalow regrowth (DotEE 2017g; TSSC 2016a). Foraging habitat: Bridled Nail-tail Wallabies forage at night and prefer the ecotone habitat containing both pasture and young Brigalow regrowth. When feeding in open pasture, they prefer to stay close to the edge of shelter habitat but will venture further into open areas if food is scarce (DotEE 2017g; TSSC 2016a). They feed on grasses, forbs and browse and a range of species are known to be preferred by the Bridled Nail-tail Wallaby, including for example Portulacas (pigweeds), Daisies, Monocots such as Sporobolus caroli, Chloris divaricata, Button Grass (Dactyloctenium radulans), Bothriochloa bladhii, and False Sandalwood (Eremophila

Species	Impact
	mitchelli) during dry periods (TSSC 2016a). Breeding habitat: Bridled Nail-tail Wallabies breed all year round. They require areas of low, dense ground cover that is close to pasture to breed successfully. After young leave the pouch permanently at around 17 weeks old, juvenile Bridled Nail-tail Wallabies do not follow their mothers, instead they spend the day concealed in dense cover, generally at the edge of a feeding area, no more than 200 m away from their mothers' daytime shelter. In Taunton National Park juveniles are known to shelter under low foliage of Yellowwood (Terminalia oblongata), Brigalow, and particularly Currant Bush (Carissa ovata) (DotEE 2017g). Notable features: Bridled Nail-tail Wallabies have a distinctive 'bridle' of white around the shoulder blades, which begins as a white stripe bordered by black at the back of the neck. The end of the tail is black and has a small crest of hair covering the claw-like nail. The tail is held stiff in an inverted 'U' shape with the tip pointing up while hopping. This species hops with its head held low and its arms held outwards and juveniles often freeze and lie flat on the ground when approached, and are then very difficult to see. The droppings of the Bridled Nail-tail Wallaby are more cylindrical than those of the Black-striped Wallaby (Macropus dorsalis), which is common in the same habitat within Taunton National Park (DotEE 2017g). The species was not recorded in the study area during the post wet season fauna survey. However, it is considered highly likely that this species will move into the study area periodically as part of larger home ranges, concentrated in Taunton National Park. Subsequently, ecotonal vegetation between more open grazing areas (up to 100 m) and denser acacia communities and communities on fertile soils within the Project area have been mapped as potential resting and foraging habitat for the Bridled Nail-Tail Wallaby. The mapped habitat covers approximately 148 hectares and is located in the northeast and southeast of the Project area, see Figure 6. A

Species	Impact
	conservation agreement relative to the establishment of Wallaby Lane Nature Refuge is in place between the State of Queensland and background landholder of Lot 5 HT551. The agreement is made under the provisions of the Queensland NC Act. The agreement intent includes “protection and enhancement of a significant corridor of remnant and regrowth vegetation providing linkage between Taunton National Park (Scientific), Walton State Forest and Blackdown Table Land National Park”. Habitat mapping does not include any of the land within Wallaby Lane. Additional targeted survey effort will be applied within the Project area during the 2017 dry season fauna survey which will include use of lucerne hay feed and infrared cameras. Assessment against the EPBC Act Significant Impact Criteria (endangered) has been undertaken to determine if there is potential for significant impact to the species as a result of the Project. Lead to a long-term decrease in the size of a population. The conceptual Project footprint would impact approximately 122 hectares of mapped resting and foraging habitat of the Bridled Nail-tail Wallaby. Whilst clearing of resting and foraging habitat will impact opportunities for the species within the Project area, the scale of the clearing when considering the habitat area provided in Taunton National Park is not expected to lead to a decrease in the population. Reduce the area of occupancy of the species. Whilst the species is yet to be recorded in fauna surveys on the Project area, the loss of mapped resting and foraging habitat as a result of clearing within the Project footprint is likely to reduce the potential area of occupancy for the species. Fragment an existing population into two or more populations. The existing population is located to the north of the project within Taunton National Park. Project clearing impacts will occur outside the southern boundary of the park and to the eastern edge of the vegetation connecting the park to the Walton State Forest and other remnant vegetation to the southwest

Species	Impact
	of the Project area. Therefore, clearing for the Project will not dissect or fragment the habitat or potential movement corridor of the population. Adversely affect habitat critical to the survival of a species. Whilst the species is yet to be recorded in fauna surveys on the Project area, mapped resting and foraging habitat is present within the Project area. Therefore, habitat within the Project area may be considered Critical in terms of the Significant Impact Guidelines. The conceptual Project footprint would impact approximately 122 hectares of mapped resting and foraging habitat. Based on the above there will be an adverse effect to critical habitat. Disrupt the breeding cycle of a population. Mapped habitat within the Project area is considered resting and foraging habitat and does not meet the criteria for breeding habitat. If breeding habitat in Taunton National Park is present in close proximity potential noise impacts may be relevant. The impact of noise on the behavior of mammals is not well understood, however animals are likely to become habituated to noise over time although there may be a zone of habitat that will not be used close to a continuous or regular noise source. The size of this zone is expected to differ between species but is considered likely to be less than two hundred metres. Noise from blasting may disturb animals for a short time following each blast. It is not expected that the Project would disrupt the breeding cycle. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. Whilst approximately 122 hectares of habitat will be impacted by the conceptual Project footprint, there is significant contiguous remnant vegetation mapped as the same Regional Ecosystems as those expected to be impacted by the Project. Subsequently it is not expected that the Project related impact would result in species decline. Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the a critically endangered or

Species	Impact
	endangered species habitat. There will be increased vehicle traffic within the area as a result of the Project. However, considering proposed vehicle hygiene controls and weed and pest management programs it is not expected that invasive species harmful to the species would become established as a result of the Project. Introduce disease that may cause the species to decline. Project activities are not expected to increase the risk of disease introduction. Proposed vehicle hygiene controls, domestic animal controls and pest management activities will ensure pathogens are not introduced. Interfere with the recovery of the species. There is no current National Recovery Plan. A National Recovery Plan for the Bridled Nail-tail Wallaby 2005-2009, addresses specific actions for the five year period of the Plan, including: 1. Management of free-range populations; 2. Translocation to areas of suitable habitat; 3. Community extension and education; 4. Maintenance of captive breeding and sanctuary populations; 5. Investigations to underpin future management; and 6. Manage, review and report on the recovery program. The Approved Conservation Advice identifies the main treats to the species as: 1. Predation (including by foxes, feral cats, wild dogs and dingos); 2. Climate (drought impacts); 3. Habitat loss, disturbance and modifications (including degradation from weeds and clearing); 4. Impacts from domestic species (habitat degradation by livestock); 5. Fire (wildfire); 6. Parasites (Toxoplasmosis and parasites); and 7. Persecution (pastoralists – not considered a current threat). Project controls consider the Conservation Actions identified within the Approved Conservation Advice and will include the following measures relative to minimising impacts to the Bridled Nail-tail Wallaby: - Final design of spoil dump and infrastructure layout to minimise habitat clearing impacts Restrict clearing of vegetation to only that necessary; - Use of spotter catchers during clearing activities; - Inclusion of nature conservation as a post mining land use in the rehabilitation

Species	Impact
	strategy; - Recovery of potential Bridled Nail-tail Wallaby habitat features (such as hollow logs and large shelter timber) during clearing for habitat enhancement in rehabilitation and remaining vegetation areas; - Ensuring vehicle hygiene procedures are applied; Prohibiting of domestic animals on the MLs and exclude livestock during the life of mine; - Control feral animals and weeds; - Fire prevention and control procedures and equipment. In accordance with the EPBC Act environmental offsets policy, offsets are proposed to be developed for the Project to compensate for Bridled Nail-tail habitat impacts. Although there will be a loss of potential foraging and resting habitat as a result of the Project, it is not expected to interfere with the recovery of the species.
Ornamental Snake	Ornamental Snake The Ornamental Snake is listed as vulnerable under the EPBC Act. EcoSM April 2017 describe Ornamental Snake distribution, habitat preferences and notable features as below. Distribution: This snake species is known from the Brigalow Belt North and parts of the Brigalow Belt South Bioregions, with the main occurrences in the drainage system of the Fitzroy and Dawson Rivers. Nearest record: The nearest record for this species is approximately 48 km east-south-east of the study area near Duaringa (CSIRO 2017). General habitat preferences: This snake is found in close association with frogs which form the majority of its prey. It is known to prefer woodlands and open forests associated with moist areas, particularly gilgai (melon-hole) mounds and depressions with clay soils but is also known from lake margins, wetlands and waterways. This species has been recorded mostly in Brigalow (Acacia harpophylla), Gidgee (Acacia cambagei), Blackwood (Acacia argyrodendron) or Coolabah (Eucalyptus coolabah) - dominated vegetation communities or pure grassland associated with gilgais. REs in which it has been recorded include; 11.4.3, 11.4.6, 11.4.8 and 11.4.9 and 11.3.3 and 11.5.16. It shelters in logs, under coarse woody

Species	Impact
	debris and in ground litter. It appears to prefer a diversity of gilgai size and depth and with some fringing groundcover vegetation and ground timber and where soils are of a high clay content with deep-cracking characteristics. Habitat patches greater than 10 ha and connected to larger areas of remnant vegetation are preferred (DotEE 2017n). The Draft Referral guidelines for the nationally listed Brigalow Belt reptiles describes gilgai depressions and mounds as being important habitat with habitat connectivity between gilgais and other suitable habitats also being important (SEWPaC 2011). Foraging habitat: It prefers habitats where there is an abundance of burrowing frog species (DotEE 2017n). Refuge habitat: This species seeks refuge in soil cracks on gilgai mounds within habitat areas. Notable Features: This species is generally inactive during the day sheltering under microhabitat features. It is active and forages at night. The post wet season terrestrial ecology survey identified regrowth Brigalow areas in the south of the study area which contained some areas of gilgai formations, the preferred habitat of the Ornamental Snake. The gilgai were holding water at the time of the survey and therefore spotlighting surveys were conducted to search for the Ornamental Snake. Very low numbers of frogs (the main prey item for the Ornamental Snake) were observed and no snakes were observed despite conditions being ideal for both frogs and the snake. Therefore, the Ornamental Snake has been assessed as having a low likelihood of occurring in the study area. The gilgai areas will be surveyed again in the dry season to provide further information on the potential for this species to occur in the study area. Based on the above, significant impact to the species or its habitat is not expected.

2.4.2 Do you consider this impact to be significant?

Yes

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

Yes

2.9.1 Impact table

Water Resource	Impact
Approximately, 400 megalitres of water per year will be required for production activities including coal preparation and dust suppression. There is no existing close regional infrastructure such as dams or pipelines in the area to provide reliable water supply. determined the site requires approximately 400 megalitres of water a year for mining and CHPP activities. The Water Supply Options Study assessed various raw water supply possibilities including, piping from Blackwater weir, piping from other existing storages, harvest of surface water from local streams and groundwater supply from local bores. The favoured option, for raw water supply is piping to the site from a water storage located at an existing mine approximately 25 km to the northwest of the Project. The proposed pipeline route from Jellinbah Coal Mine will generally follow existing	Impacts will include the consumption of approximately 400 megalitres per annum and the subsequent un-availability of this water for other potential users. The use of existing excess mine legacy water is considered to be a positive resource management option as there is currently no other recognised value associated with this water. Potential impact on natural systems and other potential users requiring fresh water supply will subsequently be reduced. To mitigate potential impacts the mine water management system will be designed to maximise recycling of water generated on site. The hierarchical use of water will be incorporated into water management practices to ensure that poorer quality water is utilised in preference to good quality water. Groundwater The primary impact expected would be the depressurisation of the regional

Water Resource	Impact
roads and private property fence lines. The pipeline, shown in Figure 4, will be located on surface for the bulk of the route and will be buried at watercourse crossings and other areas as required by affected landholders. The flow rate is expected to average 15 L per second and pressure loss monitoring will be incorporated to ensure loss of pipeline integrity is detected and managed. The quality of the raw water is understood to be suitable for coal washing activities being slightly saline having an electrical conductivity in the order of 6,000 µS/cm. Groundwater The groundwater resources of the Project area have been the subject of a high level desktop assessment undertaken by Australian Groundwater and Environmental Consultants (AGE) in June 2017, (attached). The desktop assessment included investigation of publically available information and site specific exploration geological data and drill hole development information. The findings of the AGE report are summarised below. Specific groundwater investigations and modelling are proposed for the Project as a component of the environmental impact assessment process. The Project area falls within the central part of the Bowen Basin, which is prominently known for its Permian aged coal reserves. The Project area is within the Fitzroy River catchment and is within the Highlands sub-artesian Groundwater Management Area. The northern boundary of the Great Artesian Basin (GAB) Mimosa Management Area is located approximately 9 km southwest of the Project area. The Mimosa Management Area is comprised largely of the Triassic Clematis Group which is considered a recharge area for the GAB. Locally, the Project area is situated within the Taroom Trough on the western limb of the Mimosa Syncline. The basic stratigraphy of the target coal resource on site comprises Permian material of the Blackwater Group overlain by the Triassic Rewan Group sediments which subcrop in the central west of the Project area. Tertiary alluvial sediments of the Duaringa Formation, overly	groundwater aquifer in the area surrounding the pit. Such depressurisation would likely result in the pit and final void area becoming a groundwater sink over the long term and creating a cone of drawdown around the pit area. The extent of potential drawdown will be modelled as part of the EIS process. Depending on the predicted extent of drawdown groundwater users outside the Project area may be impacted by a reduction in groundwater levels within their bores and also the potential loss of yield from reduced flow rates within the aquifer system. Recharge to the GAB may also be impacted by drawdown should impacts extend 9 km to the south of the Project into the GAB sediments. Investigation of this potential impact will be included in the EIS studies. Although it is not expected that GDEs are located within or immediately around the Project area, further investigation as part of the EIS studies will be undertaken. These investigations will consider the broader potential for impacts to GDEs related to the modelled drawdown zone. Mitigation of potential drawdown impacts will include Make Good Arrangements for adversely affected groundwater users. Surface Water Modification to surface hydrology as a result of open cut development and infrastructure will occur. Although the main two onsite drainage features are not considered as “watercourses” by DNRM, flows from upstream within their catchments would result in potential flood impacts to the operation. Additionally, although minor loss of flow to the downstream system would also occur. As such the drainage features will be diverted around the pit. Release of poor quality water from the Project to the downstream environment is a potential impact. Poor quality water would generally be that which is sediment laden due to contact with disturbed areas and or water that is of a lower physiochemical quality as a result of contamination from contact with mining and or processing areas or saline groundwater. To minimise this potential impact implementation of

Water Resource	Impact
the Rewan Group sediments. Locally, the Permian sediments dip between 30 degrees to 45 degrees to the west, however, surrounding a central anticline structure seams dip between 25 degrees to 45 degrees to the east (Xenith Consulting, 2015b). The late Permian age material contains the Rangal Coal Measures which host the target coal seams for the Project. The earlier Permian material of the Burngrove Formation, which is beneath the Rangal Coal Measures, also contains multiple coal seams however these are uneconomic in the Project area. A thin cover of Quaternary alluvial sediments is associated with the significant drainage features of the Project Region and there is potential for Quaternary alluvial sediments to also be associated with the minor drainage features of the Project area including Spectacle Creek and unnamed creek. The Yarrabee Fault Zone runs through the western central portion of the Project area and associated secondary faulting may be present at depth below the Project area. Within the Project area, several north-northeast to south-southwest trending reverse faults are present. There is potential for groundwater to be present within quaternary alluvial sediments (where present) associated with the surface drainage features of the Project area. If present, these sediments would be expected to be unsaturated (except during and immediately following flow) and disconnected form the regional groundwater table. The tertiary alluvium varies in thickness from less than two metres in the northeast of the Project area up to 54 m in the southern part of the Project area. The Tertiary sediments will only be saturated where they extend below the regional water table. Recharge to the Tertiary alluvium is expected to occur via direct rainfall on to the alluvial sediments and via seepage from the drainage features when flowing. Discharge is expected to occur via seepage into the underlying Permian sediments, and laterally into downstream alluvial sediments. The Rewan Group comprises fine-grained, clay-bound sediments	a detailed water management plan to ensure hierarchical management of water based on quality indicators will be developed. The water management plan will be based on a “clean water – dirty water” system to divert clean runoff around disturbed areas and direct run-off from disturbed areas to designated dams for treatment and reuse on site. Sediment and erosion control planning and implementation will mitigate potential impacts from sediment laden runoff. Water storage capacity and management criteria will be sufficient to minimise release (if any) of contaminated water off site and, if required, releases will be managed to achieve licensed discharge limits in the EA and the water quality objectives for the receiving waters. Sediment treatment facilities, dams, levees and stream diversions will be designed in accordance with industry standards and regulatory requirements to minimise any risk to operations and the environment. Volume reconciliation and pressure monitoring of the Raw water supply pipeline will be designed to identify potential water loss. Considering the above an assessment against the Significant impact guidelines 1.3: Coal and large coal mining developments – impacts on water resources was undertaken. Value of the resource. The groundwater resource may have some value to surrounding landholders for livestock watering. Depressurisation of the aquifer may affect this value and further understanding of the hydrogeological values of the Project area is required to fully understand this potential impact. The surface water resources of the project area have limited value; however, downstream surface water resources may have ecological value. As there is potential for release of mine waters to the downstream environment there is potential impact and further understanding of surface water resources and mine water balances are required. Due to the requirement for further understanding of values relating to groundwater and surface water the significance of impacts to these values are currently uncertain.

Water Resource	Impact
which are tight with limited interconnected fracturing. Where groundwater is encountered, it is generally very low yielding and of limited use. Groundwater within the Permian coal measures typically occurs within the coal seams and the secondary porosity associated with the sandstone and siltstone interburden. Recharge to the Permian sediments is expected to occur via direct rainfall where they outcrop and via seepage from the overlying Tertiary sediments. Discharge is down gradient of the Project area. Use of groundwater in the Project area and surrounds (within 5 km) is understood to be limited to Groundwater associated with the Tertiary and Permian sediments. There are 16 registered bores within 5 km of the Project area, four of these are reported as abandoned or destroyed. Three of the eleven functional bores are constructed within the Tertiary sediments and the remaining eight are constructed within the Permian materials. Nine of the 11 functional bores are located within the project area. Within the Tertiary materials, yield and water quality information was only available from the one registered bore located within the Project area. The measured flow rate of RN121264 is 1.5 L/s and water quality is fresh (600 µS/cm). Groundwater yield is expected to be highly variable between bores within the tertiary sediments. Registered bores constructed in the Permian sediments have yields between 0.3 and 2.1 L/s. Flow rates measured during exploration drilling in Permian material ranges from <0.01 to 7 L/s, however, flow rates are generally less than 1 L/s. The higher flow rates are generally associated with shallow, thick coal seams. Water quality within the Permian sediments has been obtained from exploration drilling and indicates EC ranges from fresh (600 µS/cm) to highly saline (31,000 µS/cm) with a neutral pH and metals within ANZECC 2000 Livestock Drinking Guidelines. Preliminary, assessment of the Project area relative to potential for Groundwater Dependant Ecosystems (GDE) has been undertaken. Data	Application of a Water Resource Plan: The Project is within the catchment to which the Water Plan (Fitzroy Basin) applies. The potential for the Project to comply with the provisions of the plan is currently uncertain and requires further assessment which will be undertaken as part of the EIS assessment studies. Cumulative impacts: Relative to groundwater the Project is expected to be largely isolated from other major uses likely to impact values. However, relative to surface water, the associated cumulative impact within the Mackenzie River Sub –basin requires further understanding and therefore potential impacts remain uncertain. Timing: The potential for Project related impacts in the short and long term require further understanding relative to both groundwater and surface water resources and will be modelled as part of the EIS studies. Therefore, potential impacts remain uncertain. Scale: Whilst the scale of the Project is relatively small in the context of coal mining in the region, the scale of the potential impacts require further understanding relative to both groundwater and surface water resources and will be modelled as part of the EIS studies. Therefore, potential impacts remain uncertain. Avoidance and Mitigation: Strategies for avoidance and or mitigation are uncertain until a more detailed understanding of the water resource values and potential Project impacts are obtained through EIS studies.

Water Resource	Impact
derived from the Bureau of Meteorology GDE Atlas suggests that there are no areas within the Project are that rely on the surface expression of groundwater. Further, based on the post wet season terrestrial ecology survey, EcoSM concluded that there are no vegetation management wetlands within or adjacent to the study area. Surface Water Initial desktop analysis of the surface hydrology of the Project region area has been undertaken. Further detailed investigations into the surface water regime and potential Project impacts will be undertaken as part of the EIS studies. The detailed investigations will include modelling of potential flood impacts and development of a water balance for the Project. The Project area is located in the Fitzroy Basin between two major watercourses, Duckworth Creek (order 3 and 4) is located approximately 3 km to the north of the Project area and flows in a generally east north-easterly direction to join Springton Creek. Charlevue Creek (Order 5) is located approximately 3.5 km to the south of the Project area and flows in a north-easterly direction to Springton Creek. Springton Creek flows to the Mackenzie River which in turn flows to the Fitzroy River. Streams intersected by the Project area are order 1 or 2 and all flow in a north-easterly direction to Duckworth Creek, many through the Taunton National Park. The second order stream traversing the north of the MDL is named as Spectacle Creek while the stream to the south is unnamed. Both streams are ephemeral and anecdotal evidence suggests that they only flow on average of two weeks per year. The DNRM has determined that the streams within the Project area do not meet the definition of a watercourse under the Water Act 2000 and are therefore defined as “drainage features”. There are numerous small farm dams located within and surrounding the Project area. Mining activities and infrastructure areas will be located outside the flood plain and initial desktop studies demonstrate a minimal risk of flooding of the proposed pit and MIA, with the exception of the northern and southern	

Water Resource	Impact
pit extents where the pit intersects the Project area watercourses, see Figures 7, 8 and 9. Subsequently, diversion of the drainage features around the northern and southern pit extents is proposed.	

2.9.2 Do you consider this impact to be significant?

Yes

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The Project area and disturbance footprint is predominantly remnant vegetation, with the balance grassland cleared for pasture containing native and exotic grasses and areas of regrowth vegetation. The vegetation has been impacted by historic grazing activities and exploration activities relating to coal and gas. A post wet season terrestrial ecology survey was undertaken during April 2017 (EcoSM 2017 attached) within the MDL 505 component of the Project area. The survey included Flora and Fauna attributes with a focus on conservation significant communities and species.

Queensland Government Biodiversity Status RE mapping identifies the majority of the remnant vegetation as NC with the balance predominantly OC RE. One isolated patch (approximately 1.3 hectares) of E RE is mapped on the eastern boundary of MDL 505. Field-validation RE mapping undertaken in April 2017 found the vegetation to be broadly similar to the Queensland Government RE mapping. The proposed route by-passes areas of mapped (Queensland Government) regional ecosystems along approximately 92 % of the pipeline length. The remaining approximately 8 % of pipeline adjacent to MDL 505 is to be located within mapped regional ecosystems along existing tracks, fire breaks and adjacent to fence lines, see Figure 4.

Field validation mapping of vegetation within MDL 505 resulted in a reduction in OC RE. There are no vegetation communities within the proposed disturbance footprint and surrounding areas incorporated within the proposed MLs which comprise the species or structure representative of a TEC under the EPBC Act. No EPBC listed flora species has been recorded on site. One species of flora Cerbera dumicola, which is listed as Near Threatened (NT) under the NC Act was identified in two populations within broad patches of remnant and non-remnant RE 11.7.2 in the south-western portion of the study area. Database searches also identified the likelihood of flora species Bertya pedicellata, which is listed as NT under the NC Act. Targeted searches for this species were undertaken during the post-wet season survey, and it was not located, however further survey effort is required to discount this species from being present.

The results of database reviews, including identified EPBC LTS and LMS, were assessed using Likelihood Of Occurrence Table (LOOTs) methods based on mapping of identified habitats in the Project area and known species distributions. The outcomes of the LOOTs concluded a low likelihood of occurrence for all but four species. Habitat for the remaining four species (all LTS) is known to the area is present in the MDL 505 component of the Project and targeted survey effort was applied to these LTS during the April 2017 post wet season survey. Targeted LTS included: 1. Koala (Phascolarctos cinereus); 2. Squatter Pigeon, Southern Sub-species (Geophaps scripta scripta); 3. Bridled Nail-tail Wallaby (Onychogalea fraenata); and 4.

Ornamental Snake (Densonia maculata).

The survey concluded: 1. Koala – Present in the Project area; 2. Squatter Pigeon – Present in the Project area; 3. Bridled Nail-tail Wallaby – Highly likely to move into the Project area periodically; and 4. Ornamental Snake – Unlikely to be present in the Project area.

Other conservation significant fauna included the Short-beaked Echidna (Tachyglossus aculeatus) is listed as special least concern under the NC Act. It is not listed under the EPBC Act. This species, or evidence of this species, was identified at six locations in the study area, including at Trap Site 1 and Supplementary sites 14, 8, 7 and 6 (Figure 2 EcoSM). This species will occur in all remnant and non-remnant areas. However, all remnant communities are considered to provide habitat for this species as these treed areas provide foraging and shelter resources such as hollow logs and leaf litter.

3.2 Describe the hydrology relevant to the project area (including water flows).

Initial desktop analysis of the surface hydrology of the Project region area has been undertaken. The Project area is located in the Fitzroy Basin between two major watercourses, Duckworth Creek (order 3 and 4) is located approximately 3 km to the north of the Project area and flows in a generally east north-easterly direction to join Springton Creek. Charlevue Creek (Order 5) is located approximately 3.5 km to the south of the Project area and flows in a north-easterly direction to Springton Creek. Springton Creek flows to the Mackenzie River which in turn flows to the Fitzroy River.

Streams intersected by the Project area are order 1 or 2 and all flow in a north-easterly direction to Duckworth Creek, many through the Taunton National Park. The second order stream traversing the north of the MDL is named as Spectacle Creek while the stream to the south is unnamed. Both streams are ephemeral and anecdotal evidence suggests that they only flow on average of two weeks per year. The DNRM has determined that the streams within the Project area do not meet the definition of a watercourse under the Water Act 2000 and are therefore defined as “drainage features”. There are numerous small farm dams located within and surrounding the Project area.

Proposed mining activities and infrastructure areas will be located outside the flood plain which is shown in Queensland Government data mapping as potentially impacting in the order of 20 hectares in the far north east of the Project boundary, see Figure 7. Detailed Project specific flood modelling will be undertaken as part of the EIS process to further develop understanding of site specific flood risks. A preliminary flood study has been undertaken and the 1:100 year and 1:1,000 year ARI flood levels mapped for the project area, see Figures 8 and 9.

The groundwater resources of the Project area have been the subject of a high level desktop assessment undertaken by AGE in June 2017. Specific groundwater investigations and modelling are proposed for the Project as a component of the environmental impact assessment process.

The Project area is within the Highlands sub-artesian Groundwater Management Area. The

northern boundary of the GAB Mimosa Management Area is located approximately 9 km southwest of the Project area. The Mimosa Management Area is comprised largely of the Triassic Clematis Group which is considered a recharge area for the GAB.

The Project area is situated within the Taroom Trough on the western limb of the Mimosa Syncline. The basic stratigraphy of the target coal resource on site comprises Permian material of the Blackwater Group overlain by the Triassic Rewan Group sediments which subcrop in the central west of the Project area. Tertiary alluvial sediments of the Duaringa Formation, overly the Rewan Group sediments. A thin cover of Quaternary alluvial sediments is associated with the significant drainage features of the Project Region and there is potential for Quaternary alluvial sediments to also be associated with the minor drainage features of the Project area including Spectacle Creek and unnamed creek. The Yarrabee Fault Zone runs through the western central portion of the Project area and associated secondary faulting may be present at depth below the Project area. Within the Project area, several north-northeast to south-southwest trending reverse faults are present.

There is potential for groundwater to be present within quaternary alluvial sediments (where present) associated with the surface drainage features of the Project area. If present, these sediments would be expected to be unsaturated (except during and immediately following flow) and disconnected form the regional groundwater table.

The tertiary alluvium varies in thickness from less than two metres in the northeast of the Project area up to 54 m in the southern part of the Project area. The Tertiary sediments will only be saturated where they extend below the regional water table. Recharge to the Tertiary alluvium is expected to occur via direct rainfall on to the alluvial sediments and via seepage from the drainage features when flowing. Discharge is expected to occur via seepage into the underlying Permian sediments, and laterally into downstream alluvial sediments.

The Rewan Group comprises fine-grained, clay-bound sediments which are tight with limited interconnected fracturing. Where groundwater is encountered, it is generally very low yielding and of limited use.

Groundwater within the Permian coal measures typically occurs within the coal seams and the secondary porosity associated with the sandstone and siltstone interburden. Recharge to the Permian sediments is expected to occur via direct rainfall where they outcrop and via seepage from the overlying Tertiary sediments. Discharge is down gradient of the Project area.

Use of groundwater in the Project area and surrounds (within 5 km) is understood to be limited to Groundwater associated with the Tertiary and Permian sediments. There are 16 registered bores within 5 km of the Project area, four of these are reported as abandoned or destroyed. Three of the eleven functional bores are constructed within the Tertiary sediments and the remaining eight are constructed within the Permian materials. Nine of the 11 functional bores are located within the project area.

Within the Tertiary materials, yield and water quality information was only available from the one registered bore located within the Project area. The measured flow rate of RN121264 is 1.5 L/s and water quality is fresh (600 µS/cm). Groundwater yield is expected to be highly variable

between bores within the tertiary sediments.

Registered bores constructed in the Permian sediments have yields between 0.3 and 2.1 L/s. Flow rates measured during exploration drilling in Permian material ranges from <0.01 to 7 L/s, however, flow rates are generally less than 1 L/s. The higher flow rates are generally associated with shallow, thick coal seams. Water quality within the Permian sediments has been obtained from exploration drilling and indicates EC ranges from fresh (600 µS/cm) to highly saline (31,000 µS/cm) with a neutral pH and metals within ANZECC 2000 Livestock Drinking Guidelines.

Preliminary, assessment of the Project area relative to potential for GDE has been undertaken. Data derived from the Bureau of Meteorology GDE Atlas suggests that there are no areas within the Project are that rely on the surface expression of groundwater. Further, based on the post wet season terrestrial ecology survey, EcoSM concluded that there are no vegetation management wetlands within or adjacent to the study area.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

The basic stratigraphy of the target coal resource on site comprises Permian material of the Blackwater Group overlain by the Triassic Rewan Group sediments which subcrop in the central west of the Project area. Tertiary alluvial sediments of the Duaringa Formation, overly the Rewan Group sediments. A thin cover of Quaternary alluvial sediments is associated with the significant drainage features of the Project Region and there is potential for Quaternary alluvial sediments to also be associated with the minor drainage features of the Project area including Spectacle Creek and unnamed creek. The Yarrabee Fault Zone runs through the western central portion of the Project area and associated secondary faulting may be present at depth below the Project area. Within the Project area, several north-northeast to south-southwest trending reverse faults are present.

The Project area is not within the Strategic Cropping Land Trigger area, nor is it within Class A or Class B agricultural land. Detailed investigation into the soils and land capability / suitability will be undertaken as part of the EIS studies.

The Atlas of Australian Soils (Atlas – 4917) describes soils of the Project as “hard pedal mottled - yellow duplex soils and more specifically as duplex yellow-grey, hard setting A horizon, A2 horizon conspic bleached, neut pedal mottled B horizon”. Based on the above soils of the Project area are expected to be generally low in fertility and have low erosional stability.

Vegetation within the MDL 505 component of Project area is predominantly remnant woodland with areas of pasture and regrowth vegetation. The proposed raw water supply pipeline route predominantly (92 %) by-passes areas of remnant vegetation. Approximately 2.3 km (8 %) of the proposed pipeline route immediately adjacent to MDL 505 intersects remnant vegetation. The proposed pipeline will be located within existing disturbed areas, including road and track corridors, fence lines, fire breaks and cleared pasture along the entire length.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The northern boundary of the Project area is adjoined by Taunton National Park. A nature refuge, Wallaby Lane, is also present within the Project area, although predominantly to the west of the coal resource. The nature refuge intends to provide a corridor of native vegetation which links the Taunton National Park and the Walton State Forest located to the southeast of the Project area.

3.5 Describe the status of native vegetation relevant to the project area.

Vegetation within the MDL 505 component of the Project area is predominantly remnant woodland with areas of pasture and regrowth vegetation.

The remnant vegetation of the MDL 505 component of the Project area was mapped as part of the post wet season terrestrial ecology survey, attached (EcoSM 2017).

The remnant vegetation communities within MDL 505 component of the include:

- RE 11.3.2 - Eucalyptus populnea woodland on alluvial plains.

- RE 11.3.4 - Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains.

- RE 11.5.2 - Eucalyptus crebra, Corymbia spp., with E. moluccana woodland on lower slopes of Cainozoic sand plains and/or remnant surfaces.

- RE 11.5.3 - Eucalyptus populnea +/- E. melanophloia +/- Corymbia clarksoniana woodland on Cainozoic sand plains and/or remnant surfaces.

- RE 11.7.2 – Acacia spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone.

- RE 11.7.4 - Eucalyptus decorticans and/or Eucalyptus spp., Corymbia spp., Acacia spp., Lysicarpus angustifolius woodland on Cainozoic lateritic duricrust.

Regrowth Brigalow vegetation was identified during the field surveys in the central southern portion of the study area on a broad area of clay soils. This vegetation comprised only low regrowth; to a maximum height of approximately 1.5 m. None of this vegetation was of a height, cover, structure or quality that would meet the required condition thresholds for the Brigalow TEC. Patchily distributed regrowth Brigalow was also identified in the north-eastern portion of the study area, where it was found to subsist on lateritic soils. Although also failing the required condition thresholds, this community would have historically been representative of RE 11.7.1, which is not considered a component of the Brigalow TEC.

The approximately 2.3 km (8 %) of the proposed pipeline route immediately adjacent to MDL 505 intersects remnant vegetation mapped (Queensland Government) as 11.3.2 / 11.3.4 and 11.7.2.

One conservation significant flora species, Cerbera dumicola (no common name), was identified in the study area. An additional species, Bertya pedicellata (no common name), is considered to potentially occur in the study area. Both of these species are listed as near threatened under the Queensland NC Act and not listed under the EPBC Act. Non-remnant brigalow regrowth in the southern portion of the study area provides marginal habitat potential for two other threatened species, Solanum adenophorum (no common name) and Solanum elachophyllum (no common name), which are both listed as endangered under the Queensland NC Act. However, the condition of this Brigalow is such that the likelihood of these species occurring is very low. Nonetheless additional survey effort will be applied to these species during the dry season survey to more comprehensively discount their presence in the study area.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project area is gently undulating with an elevation ranging between 130 m to 160 m. The physiography of the region is characterised by a dissected tableland with a general relief variation of about 80 m. This tableland is formed by a sheet of lateralized Tertiary sediments, overlying the coal bearing Permian formations.

3.7 Describe the current condition of the environment relevant to the project area.

The landscape of the MDL 505 component of the Project area varies from pulled scrub, cleared and stick-raked scrub, regrowth and large areas of remnant vegetation. Property tracks, fence line tracks, fire breaks, dams and constructed drainage (contour banks) are also features of the altered landscape resulting from agricultural use. Approximately 30% of the MDL 505 component of the Project area has been disturbed by farming and grazing activities. Other disturbance includes tracks and drill pads which were created in undertaking historical coal and seam gas exploration activities.

The proposed pipeline comprises existing disturbed areas, including road and track corridors, fence lines, fire breaks and cleared pasture along the entire length.

Erosion within the Project area is present and generally associated with disturbance areas including property tracks and clearings and constructed water features such as contour banks and dams. The natural watercourses also exhibit erosion within and adjacent to the flow channels which is typical of the regions ephemeral drainage features, particularly where grazing is undertaken. No major erosion features have been reported within the Project area to date whilst undertaking activities relative to the Project.

Weeds are present within the Project area and are expected to be typical of those found within the region. During the post wet season terrestrial ecology survey observations included common exotic species associated with pasture within the area and only one weed species of significance being the Velvety Tree Pear (Opuntia tomentosa). As the soils of the Project area are low in fertility weeds are not expected to develop major areas of infestation. No areas of infestation have been reported to date whilst undertaking activities relative to the Project.

Common feral animals of the region include:

- Fox (Vulpes vulpes);

- Cat (Felis catus);

- Wild Dogs (Canis familiaris);

- Canetoad (Rhinella marinus); and

- Rabbit (Oryctolagus cuniculus)

These species are likely to occur within the Project area. During the post wet season terrestrial ecology survey presence of the Cane toad, Wild Dogs and Rabbits was confirmed.

Further detail relative to the condition of the existing environment will be developed as additional surveys/assessments are undertaken for the EIS process.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

The EPBC Protected Matters Report did not identify any World Heritage Properties or National Heritage places as relevant to the Project area or within a 30 km radius of the Project area centre point.

The EIS baseline studies will evaluate the significance of any European settlement features that may be present within the Project area.

3.9 Describe any Indigenous heritage values relevant to the project area.

The Project area has been the subject of previous exploration activity which has involved the creation of access tracks and drilling of exploration holes. During these exploration programs, cultural heritage investigations were carried out at all proposed drill sites and over proposed access tracks with the Kangoulu People #2 who held the most recently dismissed Native Title claim over the land. The investigations were carried out in accordance with a cultural heritage management agreement between Aquila and the Ghungalou Aboriginal Corporation as nominee for the Kangoulu People #2.

Historical use of the Project area by Indigenous inhabitants has occurred as evidenced by scattered finds of flakes and cores during the cultural heritage investigations undertaken during the exploration program. Investigations to date have not located any finds of cultural significance.

On proceeding with development of the Project and the commencement of the ML application process, a Cultural Heritage Management Plan (CHMP) will be required to be developed with

the current registered Native Title Claimant group Gaangalu Nation People (QC2012/009) who also constitute the relevant Aboriginal Party under the Cultural Heritage Act 2003.

The EIS studies will include further evaluation the significance of Indigenous heritage that may be present within the Project area.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The Project will be located over two Freehold properties: Lot 5 on Plan HT551; and Lot 100 on Plan RP882349.

Relevant Compensation and Conduct Agreements (CCAs) with landholders are in place which ensures access to the Project area is available for the studies to be undertaken on as part of the EIS process. Whilst the proposed boundaries for the MLs are yet to be finalised it is expected to be substantially similar to potential boundaries shown within referral figures. The southern project boundary will be aligned to the north of the Central Rail Line and Capricorn Highway. The MLs may include sections of Pine Grove Road which runs parallel to and on the northern side of the Central Rail Line. Sections of Pinegrove Road and Red Rock Park Road which are expected to be located outside ML boundaries will be impacted by the Project access route and relevant permitting and agreements would be required in consultation with the Central Highlands Regional Council (CHRC).

No easements have been identified as likely to be impacted by the Project. There is a Stock Route (identified as Minor and unused) associated with the Capricorn Highway. The EIS process will determine if there is likely to be any impacts to the Stock Route.

3.11 Describe any existing or any proposed uses relevant to the project area.

The Project area is presently used for relatively low yield cattle grazing, which is typical for the region. Coal exploration activities have occurred within the Project area since 2005 and continue relative to the resource definition for the Project. Nature conservation is also a current land use with the existence of Wallaby Lane Nature Refuge which is predominantly to the west of the coal resource. The intent of the nature refuge is to provide a corridor of native and regrowth vegetation which links the Taunton National Park located immediately to the north of the Project area and the Walton State Forest located to the southeast of the Project area. Coal seam gas exploration has also been historically undertaken within the Project area and an existing well and associated access infrastructure remains in the Project area and is operated by QGC Pty Limited.

The Project proposes to develop an open cut coal mine which will include an open cut pit (progressively backfilled), out of pit overburden dumps, roads, coal processing and train loading facilities, water management infrastructure, and support infrastructure such as workshops and offices. The proposed mine life is expected to be in the order of 8 years and rehabilitation will occur progressively as areas become available.

The general rehabilitation strategy for the site will focus on incorporating a mixture of land uses including nature conservation and grazing which is consistent with existing land use in the Project area. The site specific objectives and success criteria for rehabilitation will be determined throughout the EIS process.

Closure activities are expected to include the removal of all infrastructure not required by the post mining landholder and demonstration of rehabilitation success. Relinquishment of mining tenure and associated authorities would be undertaken on demonstration of successful rehabilitation in accordance with relevant approval criteria.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

Baseline Studies: As part of the EIS process numerous studies are proposed and information from these studies will be integrated into Project planning processes. Proposed EIS studies relevant to MNES include: air, noise and vibration; land, soils and rehabilitation; terrestrial and aquatic ecology; surface water and groundwater.

Project planning: Project planning will integrate information from the EIS studies and project design will reflect relevant measures to minimise potential impacts to MNES. Such measures may include modification of project features, infrastructure locations or activity timing. The planning process will also consider the conservation actions identified within the Approved Conservation Advice for conservation significant species.

Management of clearing: As part of the project planning phase clearing will be avoided wherever possible. Where clearing is required for infrastructure and operations it will be progressively undertaken as necessary to minimise erosion risk. Clearing will be managed via a land disturbance permitting system inclusive of signoff by the Site Environmental Officer. The land disturbance permitting system will consider:

- Clearing need;

- Legislative approval (EA requirements);

- Clearing method;

- Spotter catcher requirements;

- Drainage and erosion control requirements;

- Alternatives;

- Vegetation and topsoil recovery;

- Cultural heritage; and

- Rehabilitation.

Clearing of potential habitat for conservation significant species will include engagement of a spotter catcher.

Recovery of resources: Resources which are determined to have significant value to the rehabilitation activities will be recovered following clearing. Such resources are likely to include topsoil which will be utilised as it is stripped wherever possible, or alternately, stockpiled for later use. Topsoil stockpiles will be appropriately located and sized to minimise loss of biological and physiochemical integrity. An inventory of topsoil will be maintained on site which records details such as stripping and stockpiling date, quantity, stabilisation treatments, analysis results and usage location. Felled timber likely to provide significant enhancement value to conservation significant species habitat will be identified and recovered. Recovered timber may be used within rehabilitation areas or placed in undisturbed areas of the Project, for example, recovery of potential Bridled Nail-tail Wallaby resting habitat features such as hollow logs and large shelter timber.

Rehabilitation: The general rehabilitation strategy is expected to incorporate a mixture of land uses including nature conservation and grazing which is consistent with existing land use in the Project area. The general goals for the Project decommissioning, rehabilitation and closure are to ensure the site is:

- safe to humans and wildlife;

- non-polluting;

- stable; and

- able to sustain an agreed post-mining land use.

The site specific objectives of rehabilitation will be determined as background information is developed throughout the EIS process. Criteria for measuring rehabilitation success will also be developed as part of the EIS process and refined throughout operations to ensure acceptable outcomes are achieved. The rehabilitation of mining disturbance will occur progressively as it is integrated into the mining process. Infrastructure decommissioning and rehabilitation will occur as facilities are no longer required, but generally as the Project approaches the end of mine life. The process will include removal of structures, reshaping, topsoiling, seeding and soil amelioration, maintenance and monitoring. A final void will be retained in the landform following the cessation of mining at the southern end of the pit. The void will be rehabilitated to ensure it is safe, stable and non-polluting.

Pest management: Management of environmentally significant weeds will be routinely undertaken within the project area, including around infrastructure, within rehabilitation areas and within undisturbed areas providing potential habitat for conservation significant species. Management of feral animals on site will be undertaken in consultation will surrounding

landholders. Feral animal management will contribute to reducing predation pressures on conservation significant species of the area such as the Bridled Nail-tail Wallaby. Domestic animals will be prohibited on the MLs and livestock will be excluded during the life of mine. All vehicles and machinery entering and exiting site will be required to comply with cleaning and hygiene procedures to mitigate the potential spread of weeds and pathogens.

Offsets: Offset requirements relative to the EPBC Act Environmental Offsets Policy 2012 are expected to be applicable as a result of habitat clearing required for the Project. There are also a number of State Significant Values identified as potentially present within the proposed Project disturbance footprint and it is anticipated that offsets may be required for these areas, as per the requirements of the Queensland Environmental Offsets Act 2014. Baseline studies undertaken throughout the EIS process will refine regional ecosystem and habitat mapping to determine applicable offsets. As part of the offsets strategy to be developed, sourcing of appropriate areas to the west of the current Wallaby Lane Nature Refuge will be a focus in order to retain and enhance connectivity from Taunton National Park to Walton State Forest to the south.

Environmental Management Systems: An environmental Management System (EMS) consistent with the principles of ISO 14001 – 2015 will be developed and implemented. The EMS will provide for the assessment or risk, planning prioritisation, implementation of plans, performance evaluation and actions, review and continual improvement. The EMS will provide for appropriate operational management plans, including: water; rehabilitation; weed and pest; waste; and other specific plans identified as required during the EIS studies and approval process.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

The following outcomes are proposed Relative to Project impacts on EPBC Protected Matters.

World Heritage Property – No impact to values.

National Heritage Place – No impact to values.

Wetland of international Importance (Ramsar) - No impact to ecological character.

Listed threatened species or ecological communities – No impact to listed ecological communities and to minimise impacts to LTS through:

- Planning and management of habitat clearing activities;

- Enhancement of remaining habitat;

- Inclusion of habitat considerations in rehabilitation;

- Management of feral animals; and

- Provision of appropriate offsets to compensate for habitat loss.

Migratory species - No impact to migratory species or habitat.

Marine environment - No impact to marine values.

Commonwealth land - No impact on any part of Commonwealth land.

Great Barrier Reef Marine Park - No impact to Great Barrier Reef Marine Park values.

Water resource, related to a coal or gas mining development – Minimise potential impact to water resources through ensuring a detailed understanding of the existing values surrounding the Project and potential impacts on those values. Implement appropriate Project design and mitigation strategies to manage potential impacts.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

Listed threatened species and communities - Yes

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

A water resource, in relation to coal seam gas development and large coal mining development - Yes

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

Not Applicable

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Walton Coal has historically managed exploration operations within MDL 505 in accordance with the requirements of the EA. Subsequently, Walton Coal has not been the subject of any enforcement actions relative to activities in the Project area. Walton Coal's Parent Company, Aquila Resources, also has a sound environmental record and has not had any significant enforcement actions taken against its management.

Walton Coal will manage the Project in accordance with a site specific Environmental Policy which will be based on the principals of the Aquila Environment Policy. The Aquila policy commits to efficient use of natural resources and minimising environmental impacts. The Environment Policy also commits to compliance, management systems, planning, environmental risk management, environmental awareness, alignment of objectives with business partners, sufficient resourcing for achieving environmental objectives, carbon emission reduction and fostering an environmental culture, see attached.

All necessary regulatory permits, authorities and licences will be obtained and conditions of these instruments will be complied with.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

Not Applicable

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Aquila Environment Policy attached.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
1. Atlas of Australian Soils (Atlas – 4917), Viewed via Queensland Globe, 29 Aug 2017. 2. Australian and New Zealand Environment and Conservation Council (ANZECC), Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), 2000. Australian and New Zealand guidelines for fresh and marine water quality. Volume 1, The guidelines. No Publishing Information, ISBN 09578245 0 5 (set). 3. Australian Groundwater and Environmental Consultants Pty Ltd, 21 June 2017. Walton Coal Project Groundwater Desktop Review. 4. Lundie-Jenkins, G. and Lowry, J. 2005. Recovery plan for the bridled nailtail wallaby (Onychogalea fraenata) 2005-2009. Report to the Department of Environment and Heritage (DEH), Canberra. Environmental Protection Agency/Queensland Parks and Wildlife Service, Brisbane. 5. Australian Government, 29 April 2014. Approved Conservation Advice for Denisonia maculata (Ornamental Snake). 6. Australian Government (Threatened Species Scientific	1. Good 2. to 11. (inclusive) - Excellent	1. High level mapping scale – To be enhanced by site specific soil investigations. 2. to 11. (inclusive) - Nil

Reference Source	Reliability	Uncertainties
Committee), 16 December 2016. Conservation Advice Onychogalea fraenata bridled nailtail wallaby. 7. Australian Government (Threatened Species Scientific Committee), 27 October 2015. Conservation Advice Geophaps scripta scripta squatter pigeon (southern). 8. Australian Government, 30 April 2012. Approved Conservation Advice for Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory) (koala Northern Designatable Unit) 9. Ecological Survey and Management April 2017. Walton Coal Project - Preliminary findings of post-wet season baseline terrestrial flora and fauna surveys. 10. KPMG, February 2017. Coal Price and FX consensus forecasts December 2016/January 2017. (https://home.kpmg.com/content/dam/kpmg/au/pdf/2017/coal-price-fx-consensus-forecast-december-2016-january-2017.pdf), Viewed 10 May 2017. 11. Queensland Government, May 2017 https://www.business.qld.gov.au/industries/mining-energy-water/resources/applications-compliance/royalties/calculating/rates , Viewed 10 May 2017.		

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

There are no feasible alternatives available for the Project other than not taking the action.

There is a demand for metallurgical coal products throughout international markets, resulting in the Project being deemed viable. The Project will generate up to 100 construction jobs and an average of 169 full time operational and management jobs in the production of metallurgical coal for export. The Project will provide businesses within the local area and broader Central Queensland region increased goods and services supply opportunities. A recruitment and supply strategy will be developed for the Project and will hierarchically preference local, regional and state resourcing.

The Queensland Government is a significant benefactor from coal mining royalties, with coal the largest export commodity in the State. Additional royalty revenue will flow from the Project throughout the life of mine.

The consequences of not proceeding with the Project would result in a loss of royalties, loss of employment and training, loss of supply opportunities and loss of positive social impacts.

Loss of royalties: The Queensland Government would lose in the order of $173 M, (based on average five year forecast for low volatile matter PCI coal of $87 USD per tonne (KPMG 2017) over the life of mine and 7 % per tonne royalty (Queensland Government 2017)).

Loss of employment and training: Opportunities (direct and in-direct) in the local and regional area for employment and training.

Loss of supply opportunities: Opportunities for the local, regional and broader Queensland businesses to supply goods and services would be lost.

Loss of positive social impacts: The local and regional community benefits derived from the flow on effect of increased employment and business confidence generated by the Project would be lost.

The potential positive impact of not proceeding with the Project is avoidance of potential environmental impacts, which may include impacts to land, water and air (and associated physical, biological and social impacts) arising from the Project.

Alternatives to the Project design features will be further investigated as part of the EIS process.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Senior HSE Advisor

9.2.2 First Name

Ashley

9.2.3 Last Name

Sizeland

9.2.4 E-mail

asizeland@aquilaresources.com.au

9.2.5 Postal Address

Level 4

10 Eagle Street
Brisbane QLD 4000
Australia

9.2.6 ABN/ACN

ABN

91164474346 - WALTON COAL PTY LTD

9.2.7 Organisation Telephone

Australian Government
Department of the Environment and Energy

07 3229 5630

9.2.8 Organisation E-mail

asizeland@aquilaresources.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Ashley Sizeland, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 18/10/2017

I, _____, the person proposing the action, consent to the designation of _____ as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: .....

Australian Government
Department of the Environment and Energy

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Senior HSE Advisor

9.5.2 First Name

Ashley

9.5.3 Last Name

Sizeland

9.5.4 E-mail

asizeland@aquilaresources.com.au

9.5.5 Postal Address

Level 4

10 Eagle Street
Brisbane QLD 4000
Australia

9.5.6 ABN/ACN

ABN

91164474346 - WALTON COAL PTY LTD

9.5.7 Organisation Telephone

07 3229 5630

9.5.8 Organisation E-mail

asizeland@aquilaresources.com.au

Proposed designated proponent - Declaration

Australian Government
Department of the Environment and Energy

I, _____, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:..... Date: .....

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Senior HSE Advisor

9.8.2 First Name

Ashley

9.8.3 Last Name

Sizeland

9.8.4 E-mail

asizeland@aquilaresources.com.au

9.8.5 Postal Address

Level 4

10 Eagle Street
Brisbane QLD 4000
Australia

9.8.6 ABN/ACN

ABN

91164474346 - WALTON COAL PTY LTD

9.8.7 Organisation Telephone

07 3229 5630

Australian Government
Department of the Environment and Energy

9.8.8 Organisation E-mail

asizeland@aquilaresources.com.au

Referring Party - Declaration

I, Ashley Sizeland, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:..... Date: 18/10/2017

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. 170621_g1872_agegroundwater-review_v01.02.pdf
2. 20170809_mnes_report_30km_bufferpmst_evbtoc.pdf
3. 62610372_epbc_001_fig1.pdf
4. 62610372_epbc_002_fig2.pdf
5. 62610372_epbc_003_fig3.pdf
6. 62610372_epbc_004_fig4.pdf
7. 62610372_epbc_005_fig7.pdf
8. 62610372_epbc_006_fig8.pdf
9. 62610372_epbc_007_fig9.pdf
10. 62610372_epbc_008_fig5.pdf
11. 62610372_epbc_009_fig6.pdf
12. cor-hsec-po-004_environment_policy.pdf
13. post_wet_survey_prelim_report_ecosm.pdf
14. vol_eis_notice_walton_coal.pdf