DEPARTMENT OF AGRICULTURE, WATER AND THE ENVIRONMENT

To: Andrew McNee, Assistant Secretary, Environment Assessments Queensland and Sea Dumping Branch (for decision)

Referral Decision Brief – Towrie Gas Development, Arcadia Valley within the Surat Basin, Queensland (EPBC 2021/8979)

Timing: (28 July 2021) - Statutory timeframe.

Recommended Decision	**NCA** ☐ **NCA(pm)** ☐ **CA** ☒
Designated Proponent	Santos CSG PTY LTD ABN: 72 121 188 654
Controlling Provisions triggered or matters protected by particular manner	World Heritage (s12 & s15A) Yes ☐ No ☒ No if PM ☐ National Heritage (s15B & s15C) Yes ☐ No ☒ No if PM ☐ Ramsar wetland (s16 & s17B) Yes ☐ No ☒ No if PM ☐ Threatened Species & Communities (s18 & s18A) Yes ☒ No ☐ No if PM ☐ Migratory Species (s20 & s20A) Yes ☐ No ☒ No if PM ☐ C'wealth marine (s23 & 24A) Yes ☐ No ☒ No if PM ☐ Nuclear actions (s21 & 22A) Yes ☐ No ☒ No if PM ☐ C'wealth land (s26 & s27A) Yes ☐ No ☒ No if PM ☐ C'wealth actions (s28) Yes ☐ No ☒ No if PM ☐ GBRMP (s24B & s24C)* Yes ☐ No ☒ No if PM ☐ A water resource – large coal mines and CSG (s24D & s24E) Yes ☒ No ☐ No if PM ☐ C'wealth heritage o/s (s27B & 27C) Yes ☐ No ☒ No if PM ☐
Public Comments	Yes ☒ No ☐ Number: 6, See Attachment C1
Ministerial Comments	Yes ☒ No ☐ Who: See Attachment C
Assessment Approach Decision	Yes ☒ No ☐ What: Preliminary Documentation with RFI Bilateral Applies ☐

Recommendation/s:

1. Consider the information in this brief, the referral (Attachment A) and other attachments.

Considered / Please discuss

2. Agree to accept the referral, even though the proposed action is a component of a larger action.

Agreed / Not agreed

3. Agree with the recommended decision under section 75 of the EPBC Act.

Agreed / Not agreed

4. Agree the action be assessed on Preliminary Documentation under Division 4 of the EPBC Act

Agreed / Not agreed

5.If you agree to recommendations 2 to 4 above, indicate that you accept the reasoning in the departmental briefing package as the basis for your decision.

Accepted / Please discuss

6. Agree to the designated proponent.

Agreed / Not agreed

7. Agree to the fee schedule with justifications (Attachment D) and that the fee schedule without justifications (Attachment E) be sent to the person proposing to take the action.

Agreed / Not agreed

8. Note the letter notifying the person proposing to take the action of your referral and assessment approach decisions will include an invoice for Stage 1 assessment fees. A letter requesting further information under section 95A(2) of the EPBC Act will be prepared for your signature within 10 business days of the Stage 1 payment.

Noted / Please discuss

9. Sign the notice at Attachment F (which will be published if you make the recommended decision).

Signed / Not signed

10. Sign the letters at Attachment G.

Signed / Not signed

s. 11C(1)(a)

Andrew McNee
Assistant Secretary
Environmental Assessments (QLD) and Sea-dumping Branch

Date: 28 July 2021

Comments:

KEY ISSUES:

- The department considers that the proposed action is likely to have significant impacts on listed threatened species and communities and water resources.

- Public comments noted impacts on water resources, threatened listed species and communities and migratory species have been underestimated, and that the project should be a controlled action.
- Only limited on-ground information has been collected and the referral notes that potential impacts to listed threatened species will be managed through an environmental constraints protocol.
- The proposed action includes groundwater extraction, water management infrastructure and hydraulic fracturing. Without appropriate management the proposed action is likely to result significant impact to water resources. The department notes that there are existing management frameworks that may be suitable to apply to the proposed action.

The action described in this referral was previously referred on 27 November 2020 (EPBC 2020/8851) and deemed a controlled action, it was subsequently withdrawn by the proponent on 27 May 2021.

BACKGROUND:

Description of the referral

A referral was received on 29 June 2021. The action was referred by Santos CSG Pty Ltd, which has stated its belief that the proposal is not a controlled action for the purposes of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Description of the proposal (including location)

The Towrie Gas Development is located within the Surat Basin, approximately 50 km north of Injune and 350 km southwest of Gladstone in central Queensland.

Santos CSG Pty Ltd (the proponent) proposes to develop petroleum lease 1059 on behalf of its joint venture partners; Australia Pacific LNG (CSG) Pty Ltd, PAPL (Upstream) Pty Ltd, Total E&P Australia III and KGLNG E&P Pty Ltd.

The proposed action involves progressive construction, operation, decommissioning and rehabilitation of up to 116 new vertical gas wells and supporting infrastructure within the 8,678 ha proposed action area, for an operational life of approximately 30 years. The final disturbance footprint is still to be determined. The department will seek clarification from the proponent on the size of the disturbance footprint within the proposed action area during the assessment process

The gas extracted as part of the proposed action will supply commercial markets through existing infrastructure developed as part of the Gladstone Liquefied Natural Gas (EPBC 2008/4059) and Gas Field Development (EPBC 2012/6615) projects.

The proposed action will target the Bandanna formation of the Permo-Triassic Bowen Basin. It is predicted that the total groundwater abstracted for the duration of the project is approximately at 2.3GL.

Each well footprint will range from 1 ha to approximately 2.5 ha dependent upon the requirement for additional infrastructure or multiple wells. Well construction involves a drill rig, flare, flare sump and storage for fuel, chemicals, drilling fluids, produced water and raw water supply. Hydraulic fracture stimulation will be used to complete the wells.

Each well requires access tracks from 8 m–15 m wide accommodating both heavy and light vehicles. A gas and water gathering network is to be connected to main lines of gas and water management facilities off tenure. The gas and water gathering network requires a construction

right of way of approximately 10-25 m wide for standard gathering pipeline construction including excavation of a trench.

Other ancillary infrastructure and incidental petroleum activities include a temporary accommodation facility, storage tanks, power & communication lines (with supporting water & energy infrastructure), borrow pits and fencing.

Description of the environment

The proposed action area contains cleared farming and grazing land and areas of contiguous tracts of remnant vegetation predominately along an escarpment or in association with a watercourse (Public Reserve, Middle Hill and Western Ridgeline) (Attachment A). Habitat is described as occurring in disjunct patches of regrowth or advanced regrowth, with remnant areas generally associated with modified wetlands or mapped watercourses or drainage lines (Attachment A). The terrain is characterised as rugged on coarse sandstones with eucalypt woodland communities or broad valleys of undulating plains. Where clay soils occur, vegetation is dominated by *Acacia harpophylla* (Brigalow) and softwood scrub and by *Eucalyptus populnea* where soils are alluvial.

The proposed action area is located within the Comet River catchment (forming part of the larger Fitzroy Basin), bounded by Expedition and Shotover Ranges in the east, the Carnarvon Range in the south and the Buckland Tableland in the west. Most watercourses are ephemeral and typically flow during and immediately after rainfall events. Key watercourses include Spring Creek, Arcadia Creek and Station Creek. These watercourses merge with each other to join the Brown River which subsequently becomes the Comet River. The project area includes lacustrine, riverine and minor palustrine wetlands. Lacustrine wetlands are open water dominated systems and typically provide water for agricultural use and habitat for flora and fauna. An inland seasonal and intermittent freshwater floodplain, Lake Nuga, is located approximately 25 km north of the proposed action area. The nearest spring complex is located approximately 6 km northwest of the proposed action area.

State Assessment

The proponent has an Environmental Authority under the *Environmental Protection Act* 1994 (Qld) for exploration activities (ATP 2033) and is applying for a further Environmental Authority for the proposed resource activities for the proposed action (PL 1059).

In a letter dated 14 July 2021, the Queensland Department of Environment and Science (DES) noted that the proposed action will not be assessed as per schedule 1 of the Bilateral arrangement between the Commonwealth and Queensland and will not be assessed using an environmental impact statement or as a coordinated project (Attachment C).

SECTION 74A – REFERRAL OF A LARGER ACTION

Section 74A(1) of the EPBC Act states that if the Minister (or delegate) is satisfied the action that is the subject of the referral is a component of a larger action, the Minister (or delegate) may decide not to accept the referral. This is a discretionary decision and, as such, you are not obliged to exercise the power.

The *Environment Protection and Biodiversity Conservation Act 1999 (Cth) Policy Statement: Staged Developments – Split referrals: Section 74A of the EPBC Act* states that "[a] referred action that is part of a larger action can be refused only if there is a reasonable basis for doing so. The key question for the Minister is: does the splitting of the project reduce the ability to achieve the objects of the Act?"

The proponent does not consider the proposed action to be part of a staged development of a larger action, but notes the proposed action is related to the Gladstone Liquified Natural Gas (GLNG) and Gas Field Development (GFD) projects. The proposed action is being delivered under separate commercial arrangements to GLNG and GFD and the proponent has received advice indicating that individual blocks around the Surat Basin outside of the GLNG/GFD, including Towrie, were not covered by existing approvals and therefore future proposed actions would require separate referrals.

The GLNG (EPBC 2008/4059) and GFD projects (EPBC 2012/6615) were approved with conditions by the Minister on 21 October 2010 and 22 March 2016 respectively. The proponent proposes to utilise the existing infrastructure of the GLNG and GFD projects to maximise efficiency and reduce the impacts of the proposed action.

Given that the GLNG and GLNG GFD projects have already been approved and is currently being taken by Santos, for the purposes of s 74A, it is no longer an action which the proponent is proposing to take. Accordingly, the department recommends that you agree that section 74A does not apply to the proposed action and agree that this referral should be accepted.

RECOMMENDED DECISION:

Under section 75 of the EPBC Act you must decide whether the action that is the subject of the proposal referred is a controlled action, and which provisions of Part 3 (if any) are controlling provisions for the action. In making your decision you must consider all adverse impacts the action has, will have, or is likely to have, on the matter protected by each provision of Part 3. You must not consider any beneficial impacts the action has, will have or is likely to have on the matter protected by each provision of Part 3.

The department recommends that you decide that the proposal is a controlled action because there are likely to be significant impacts on the following controlling provisions:

- Listed threatened species and communities (section 18 & section 18A);
- A water resource, in relation to coal seam gas development and large coal mining development (section 24D & section 24E).

These impacts are discussed respectively below.

Listed threatened species and communities (s18 & 18A)

The department's Environment Reporting Tool (ERT) (dated 23 July 2021) identifies 25 species and 5 communities that may occur within 10 km of the proposed action (Attachment B1). Based on the location of the proposed action and likely habitat present in the area of the proposed action, the department considers that impacts will potentially arise.

The referral states that the presence and extent of listed threatened species and communities within the project area was estimated using predictive modelling informed by desktop analysis, high resolution aerial imagery, Lidar data (both ground and canopy) and limited ecological field validation surveys. The following table outlines the indicative total potential habitat modelled within the project area:

Protected Matter	Listing Status	Total potential habitat (ha)
*Brigalow (*Acacia harpophylla dominant and co-dominant*)	Endangered	254.63
Poplar Box Grassy Woodland on alluvial plains	Endangered	41.05
Semi-Evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	534.49
Acacia grandifolia	Vulnerable	920.37
Bertya opponens	Vulnerable	1,450.39
*Ooline (*Cadellia pentastylis*)	Vulnerable	772.43
**Xerothamnella herbacea*	Endangered	250.45
*Australian Painted Snipe (*Rostratula australis*)	Endangered	297.24
Grey Falcon *(Falco hypoleucos)*	Vulnerable	841.43
*Painted Honeyeater (*Grantiella picta*)	Vulnerable	411.53
Red Goshawk (*Erythrotrorchis radiatus*)	Vulnerable	1,694.43
Squatter Pigeon (southern) (*Geophaps scripta scripta*)	Vulnerable	2,122.63
White-throated Needletail (*Hirundapus caudacutus*)	Vulnerable/Migratory	2,122.64
Greater Glider (*petauroides Volans*)	Vulnerable	2,006.77
*Koala (*Phascolarctos cinereus*)	Vulnerable	1,173.67
Large-eared Pied Bat (*Chalinolobus dwyeri*)	Vulnerable	864.23
Northern Quoll (*Dasyurus hallucatus*)	Endangered	1,628.75
*South-eastern long-eared Bat (*Nyctophilus corbeni*)	Vulnerable	1,868.1
Adorned Delma (*Delma torquata*)	Vulnerable	920.37
Dunmall's Snake (*Furina dunmalli*)	Vulnerable	1,216.43
*Ornamental Snake (*Denisonia maculata*)	Vulnerable	273.4
*Yakka Skink (*Egernia rugosa*)	Vulnerable	1,104.89

Habitat clearance is listed in the referral documentation as the primary impact mechanism to listed threatened species and communities. The department considers the proposed action has the potential of further impacts to listed species and communities which include habitat degradation, reduction in habitat connectivity, noise, dust and light, changes to hydrological regimes, impacts to water quality and chemical risk.

The proponent has applied their existing Environmental Constraints Protocol (ECP) to avoid and minimise disturbance and provided estimated maximum direct disturbance limits for listed threatened species and communities (Attachment A9).

After the application of the ECP, the proponent has identified a potential risk to several of the species listed and indicates further assessment may be required. For example, 4 ha of roosting and foraging habitat critical for the South-eastern long-eared bat will be directly impacted via clearing and uncertainty exists as to the density of the population due to minimal survey efforts undertaken.

The department notes that the ECP method has been used for other CSG operations and has been proven as a useful framework for managing impacts to listed threatened species and communities. Through the application of the ECP, uncertainty regarding habitat will be reduced, however, the department notes that there are a number of preliminary observations about the information used in the ECP to date, for example:

- Habitat mapping rules for the Squatter Pigeon do not include highly modified or degraded habitats as dispersal habitat.
- The southern portion of the project area currently contains both High and Moderate constraints areas and is mapped as suitable habitat for several listed threatened species (Figure 1 – Towrie MNES constraints). This area has been deemed uncertain by the proponent as constraints categories have not been field validated and may be subject to change.
- Inconsistencies in the mapping of vegetation communities occur within the project area between desktop RE mapping (figure 6) and assessed RE extent (figure 7) in the *MNES – Ecology Assessment Report*.

Without further assessment of the ECP (Attachment A9), and conditions to ensure that it is appropriately implemented, the action may have a significant impact on listed species and communities due to:

- A reduction in the area of occupancy of an important population of a vulnerable species;
- A reduction of the area of occupancy of an endangered species;
- The potential to modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline; and
- A reduction in the extent of an endangered ecological community.

Conclusion

Based on the information available, including the ERT, Species Profile and Threats (SPRAT) Database, OWS advice and the information in the referral documentation, and with consideration of the *Significant impact guidelines 1.1* (2013), the department considers there is a real chance or possibility that the proposed action will reduce the area of occupancy of an endangered species, adversely affect habitat critical to the survival of a vulnerable species and reduce the extent of an endangered ecological community.

Therefore, the department is of the view that the proposed action is likely to have a significant impact on listed threatened species and communities. For these reasons, the department considers that sections 18 and 18A are controlling provisions for the proposed action.

A water resource, in relation to a large coal mining development or coal seam gas development (s24D & 24E)

The proponent has stated that they do not believe that the proposed action will have a significant impact on water resources.

The Project is located within the Comet River catchment; a sub-basin of the Fitzroy Basin. Key watercourses within the vicinity of the Project include Nogoa, Comet, Mackenzie and Dawson Rivers. Watercourse flows in the Project area forms stable single channels bounded by the Expedition and Shotover Ranges in the east, the Carnarvon Range in the south and the Buckland Tableland in the west. Watercourses that flow through the project area support the flow of the major downstream watercourses.

The target gas producing formation for the Project is the Bandanna Formation, of the Permo-Triassic Bowen Basin. Groundwater systems in the Project include: Quaternary deposits comprising alluvium associated with the Arcadia Creek; Cenozoic sediments; Triassic Clematis Group and Rewan Group; and Permian coal measures.

Groundwater is predominantly used for stock and domestic purposes, with most third-party bores (within a 25 km radius) screened within the Quaternary alluvium located to the north of the Project. Potential GDEs have been mapped both within and adjacent to the project area. The Office of Water Science (OWS) provided advice on 13 July 2021 (Attachment B2). based on the advice from the OWS and information in the referral, the department considers that impacts may potential arise in relation to:

- Groundwater
- Groundwater dependent ecosystems
- Surface water
- Chemicals used in CSG extraction, and
- Cumulative impacts with other CSG operations in the region

These impacts are discussed further below:

Groundwater

The magnitude and extents of impacts on water resources by the proposed action are largely determined by groundwater drawdown predictions. Groundwater drawdown predictions are estimated from predictive modelling derived from the OGIA median hydraulic parameter values for the hydrogeological units in the area. The department notes that local hydraulic parameters may differ from the calibrated values of the OGIA model and therefore may result in different predicted drawdown ranges and extents from those predicted and relied upon in the referral documentation (Attachment A). The department notes further that OGIA also provides 95th percentile predictions, for which impacts will be greater.

OWS notes, given the presence of GDEs within and adjacent to the project area, the proponent should develop an ecohydrological conceptual model (contingent on the results of a GDE assessment) outlining the hydrogeological connectivity and impact pathways between drawdown within the Rewan Group, alluvium and potential GDEs. The conceptual model should also include spring complexes, including those 10 to 25 km to the west of Towrie associated with the Clematis Group and Precipice Sandstone.

Groundwater-dependent ecosystems

Potential GDEs are mapped within and adjacent to the proposed project area. The proponent considers that the proposed action will not have an impact on potential GDEs as predictive

groundwater modelling identify that drawdown is not predicted within the alluvium, although drawdown of up to 1m is predicted for the Rewan group. The methodology adopted by OGIA identifies outcrop areas where drawdown of more than 0.2m, but less than 1m, as a low risk impact.

In their advice, OWS notes, that should local data indicate that hydraulic parameters are outside of the calibrated values of the OGIA model, drawdown within the alluvium may be systematically underpredicted. Should this be the case, in accordance with the *Coal Seam Gas – Joint Industry Framework* (JIF) (2021), the risk of the proposed project on these potential GDEs may subsequently increase to moderate or high, triggering a site-specific assessment.

Should groundwater drawdown occur outside of the current modelled predictions in the outcropping Clematis Group, Rewan Group and Quaternary alluvium as a result of the action, flows within Spring Creek, Arcadia Creek, Station Creek, Brown River, its tributaries and the major wetland on site may be impacted.

Surface water

The proponent considers impacts on surface water flows or quality are not likely, as no abstractions or discharges from watercourses are planned, no diversions, most waterways are ephemeral, and there is little connectivity between groundwater and surface water.

Proposed tracks, gas and water flow pipelines cross these water courses as provided by figure 6 – *Towrie (PL 1059) indicative development – first phase*, of the proponents Water Assessment Report. Although these water courses are ephemeral, they form part of the catchment for the wetland. Should these watercourses be modified or disturbed, the timing, duration, magnitude and frequency of flows into the wetland may be materially changed. The proponent notes the riparian vegetation associated with the mapped watercourses are highly important for the movement of fauna across the landscape and to higher quality habitat.

In their advice, OWS notes, that flood modelling indicates that at least one well pad, access roads and some project infrastructure including storage tanks are potentially impacted in a 1% AEP flood event. The department notes that clarification as to how this potentiality will be mitigated and managed will be sought during the assessment process. The department will also require access to water balance data so as the adequacy may be assessed.

Chemical used in CSG extraction

Drilling and hydraulic simulation is to be used during operations requiring the lifecycle of chemicals to be identified and managed throughout the lifetime of the proposed action.

The proponents chemical risk assessment is declared to align with national guidance and chemical risk assessment framework (CRAF) in the assessment and management of stored chemicals, handling, use and/or disposal during or following drilling and hydraulic fracturing activities. The department notes that accidental release scenarios have not been included in the chemical risk assessment (Attachment A15) and depend upon assessment outcomes to inform emergency response actions.

Cumulative Impacts

The proposed action is part of the broader development of CSG resources by the proponent and other developers. The department notes additional individual tenures within the Surat basin from other developers are anticipated in future, including potential future developments by Santos, for example, ATP1191 (PLA1062) located immediately north of Towrie (Attachment A).

The department notes cumulative impacts are not discussed in the referral documentation and therefore the extent of the impacts on water resources are unknown.

The proponent has rationalised the decision not to consider the cumulative impact of two existing coal mines in the area and the department notes the uncertainty assessment derived from the OGIA modelling appears not to detail the cumulative impact contributions to the maximum predicted draw down from adjacent developments.

Conclusion

Impacts based on predictive modelling can change over time, including the intensity, nature and magnitude of those impacts. There are mechanisms in place that could be suitable to apply to the project to address these risks including the application of the JIF for the management of impacts to groundwater caused by Coal Seam Gas developments within the Surat Cumulative Management Area, and the CRAF.

Based on the information available, including the ERT (Attachment B1), SPRAT Database, referral documentation, Significant impact guidelines 1.3 (2013) and OWS advice (Attachment B2). The department considers that the proposed action is likely to result in a significant impact to groundwater and surface water. There is a real chance or possibility that the action will directly or indirectly result in a change to the hydrology and water quality of a water resource that is of sufficient scale or intensity as to reduce the current or future utility of the water resource for third party users, including environmental or other public benefit outcomes.

Therefore, the department is of the view that the proposed action is likely to have a significant impact on a water resource. For these reasons, the department considers that sections 24D and 24E are controlling provisions for the proposed action.

PROTECTED MATTERS THAT ARE NOT CONTROLLING PROVISIONS:

Listed migratory species (s20 & 20A)

The department's ERT (dated 23 July 2021) identifies 11 listed migratory species that may occur within 10 km of the proposed action (Attachment B1). Based on the location of the action, likely habitat present within the project site and database records, the department considers that six (6) of the listed migratory species have the potential to occur, or are likely to occur, within the proposed action area.

Latham's Snipe (Gallinago hardwickii) and Glossy Ibis (Plegadis falcinellus)

Habitat for Latham's Snipe and the Glossy Ibis has been identified within the project area. Six individuals of the Glossy Ibis have been recorded in the constructed wetland in the north east corner of the project site. The potential habitat for the Glossy Ibis has been characterised as foraging and dispersal habitat only.

The proponent has noted the constructed wetland in the north east corner of the project site may be of sufficient size and condition to support an ecologically significant proportion of the population of Latham's Snipe. Significant impacts are only likely to occur to the Latham's Snipe if areas support at least 18 individuals of the species. Targeted surveys, including within the constructed wetland and surrounding vegetation, were undertaken with no individuals recorded on site, the nearest known records of the species occur within 50 km of the project area.

The department considers that the proposed project area is not an area of important habitat and does not contains an ecologically significant proportion of the population of these species. Therefore, the department considers the proposed action will not substantially modify, degrade, destroy or isolate an area of important habitat and will not seriously disrupt the lifecycle of an ecologically significant portion of a population of the Glossy Ibis or Latham's Snipe.

Rufous Fantail (Rhipidura rufifrons) and Satin Flycatcher (Myiagra cyanoleuca)

Habitat for the Rufous Fantail and Satin Flycatcher has been identified within the project area. Actions which constitute substantial loss or modification of important habitat and therefore likely significant impact, are those actions that are likely to meet or exceed the upper thresholds (1%) of habitat areas of international significance. The referral indicates that the total potential habitat for the species within the project area is less than upper threshold (1%) and therefore impacts are unlikely to be significant.

Conclusion

Based on the information available to the department, including SPRAT and the information from the referral documentation, the proposed action is unlikely to substantially impact an area of important habitat or an ecologically significant portion of the population of a migratory species. The department therefore considers that significant impacts to migratory species are unlikely.

Ramsar Wetlands (s16 & 17B)	The ERT did not identify any Ramsar listed wetland of international importance within or adjacent to the proposed action area. The nearest Ramsar Wetland is Shoalwater and Corio Bays Area, approximately 292 km northeast from the proposed action area. Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to Ramsar listed wetlands of international importance, the proposed action is unlikely to have a significant impact on Ramsar listed wetlands of international importance. For these reasons the Department considers that sections 16 and 17B are not controlling provisions for the proposed action.
World Heritage properties (s12 & 15A)	The ERT did not identify any World Heritage properties located within or adjacent to the proposed action area. The nearest World Heritage Area is the Great Barrier Reef approximately 245 km northeast from the proposed action area. Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to World Heritage properties, the proposed action is unlikely to have a significant impact on World Heritage properties. For these reasons the Department considers that sections 12 and 15A are not controlling provisions for the proposed action.
National Heritage places (s15B & 15C)	The ERT did not identify any National Heritage places located within or adjacent to the proposed action area. The nearest World Heritage Area is the Great Barrier Reef approximately 245 km northeast from the proposed action area. Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to National Heritage places, the proposed action is unlikely to have a significant impact on National Heritage places.

	For these reasons the Department considers that sections 15B and 15C are not controlling provisions for the proposed action.
Commonwealth marine environment (s23 & 24A)	The proposed action does not occur in a Commonwealth marine area. The nearest Commonwealth Marine area is approximately 317 km northeast from the proposed action area. Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to a Commonwealth marine area, the proposed action is unlikely to have a significant impact on the environment in a Commonwealth marine area. For these reasons the Department considers that sections 23 and 24A are not controlling provisions for the proposed action.
Commonwealth action (s28)	The referring party is not a Commonwealth agency. For this reason, the Department considers that section 28 is not a controlling provision for the proposed action.
Commonwealth land (s26 & 27A)	The proposed action is not being undertaken on Commonwealth land. The nearest Commonwealth land is the Tin Can Bay training area (Defence), approximately 384 km southeast from the proposed action area. Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to Commonwealth land, the proposed action is unlikely to have a significant impact on the environment on Commonwealth land. For these reasons the Department considers that sections 26 and 27A are not controlling provisions for the proposed action.
Nuclear action (s21 & 22A)	The proposed action does not meet the definition of a nuclear action as defined in the EPBC Act. For this reason, the Department considers that sections 21 and 22A are not controlling provisions for the proposed action.
Great Barrier Reef Marine Park (s24B & 24C)	The proposed action is not being undertaken in the Great Barrier Reef Marine Park. The Great Barrier Reef Marine Park is approximately 262 km northeast from the proposed action area. Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to the Great Barrier Reef Marine Park, the proposed action is unlikely to have a significant impact on the Great Barrier Reef Marine Park. For these reasons the Department considers that sections 24B and 24C are not controlling provisions for the proposed action.
Commonwealth Heritage places	The proposed action is not located overseas. For this reason, the Department considers that sections 27B and 27C are not controlling provisions for the proposed action.

overseas (s27B & 27C)	

SUBMISSIONS:

Public submissions

The proposal was published on the Department's website on 29 June 2021 and public comments were invited until 13 July 2021. Six public submissions were received on the referral (Attachment C1). The submissions raised a number of issues including:

- The proposed action is a controlled action that should be assessed by PER/EIS.
- The proposed action is likely to have a significant impact on several threatened fauna and flora species, migratory species and water resources. These should be considered as controlling provisions.
    - Key species impacts raised include inadequate surveys, underestimation of impact on habitat and habitat fragmentation.
    - Key water impacts raised include underestimation of impacts to water, inadequate cumulative impact assessment, impacts on habitat from changes to hydrology and water quality, water impacts to Lake Nuga, impacts to adjacent water bores and impacts to downstream users.
    - Key migratory species impacts raised include underestimation of impact to habitat (wetlands) from hydrological changes and water quality.
- Chemicals used in petroleum drilling and production should be clearly identified, including their characteristics. Chemicals when broken down should be fully accounted for in the EIA process.
- A cumulative hydrological impact assessment should be undertaken.
- The proposed action requires a detailed rehabilitation plan and CSG wastewater treatment plan.
- Santos has a track record of incidents involving contamination, failure to meet conditions and breaches of the law.

Comments from Commonwealth Ministers

By letter 29 June 2021, the following ministers were invited to comment on the referral:

- The Hon David Littleproud MP, Minister for Agriculture, Drought and Emergency Management,
- The Hon Ken Wyatt AM MP, Minister for Indigenous Australians; and
- The Hon Keith Pitt MP, Minister for Resources, Water and Northern Australia.

On 13 July 2021, Anthony Bennie, on behalf of Minister Littleproud, responded that they had no further comments (Attachment C).

On 13 July 2021, on behalf of Minister Wyatt, comments were received from the National Indigenous Australians Agency (Attachment C). The NIAA noted:

- Various native title determinations and Indigenous Land Use Agreements are formed between the proponents and traditional owners of the project area. However it is

recommended that relevant parties seek advice as to whether the future acts regime of the *Native Title Act 1993* applies to the adjoining tenure that is not freehold.

- A Cultural Heritage Management Plan (CHMP) has been negotiated for the project area and adjoining tenure, although it is unconfirmed if all relevant traditional owners were included in the process. An undertaking has been confirmed by the proponent that the action will not impact upon the three registered Aboriginal heritage site that are located within the project site.

- That the proponent continues to engage with all relevant traditional owners, including the Brown River, Karingbal and Bidjara Peoples, to ensure the ongoing protection and management of all cultural heritage values and culturally significant species throughout the life of the project.

- Santos is encouraged to engage with Supply Nation to assist in the engagement of Indigenous employees and businesses for this gas development project.

On 8 July 2021, on behalf of Minister Pitt, comments were received from Geoscience Australia (Attachment C). Geoscience Australia notes:

- While the proposed action is not part of a staged or larger action, it is related to other actions in the region, including the GLNG (EPBC 2008/4059) and GFD (EPBC 2012/6615) projects. It is noted that additional development blocks utilising infrastructure from this action and the GLNG and GFD projects will be referred separately, including additional piecemeal referrals from other developers are anticipated in the future.

- The groundwater assessment does not include an assessment of cumulative impacts from the regional modelling of OGIA. It is unclear why uncertainty assessment does not detail the cumulative impact contributions to maximum predicted drawdown from adjacent developments, when the information is available.

- It is unclear if the proponent has considered the implications of UWIR section 6.5.8 Model Complexity, assumptions and limitations and the statement regarding local scale geological complexity.

- It is not possible to rule out the potential for direct and cumulative impacts to water resources to be significant at the local scale.

Comments from State/Territory Ministers

By letter dated 29 June 2021, Mr Chris Loveday, delegate contact for the Hon Meaghan Scanlon MP, Queensland Minister for the Environment and the Great Barrier Reef and Minister for Science and Youth Affairs, was invited to comment on the referral.

On 14 July 2021, Mr Loveday responded, advising that the proposed action will not be assessed in a manner under which the bilateral agreement between the Commonwealth and Queensland would apply (Attachment C). Further, the response noted:

- Santos has submitted an application for an Environmental Authority for tenure PL 1059. The application is currently in information request as DES await Santos' response.

- The application to DES includes a number of impacts on matters of state environmental significance that are also MNES. These matters have not been assessed under the *Environmental Protection Act 1994* and *Offsets Act 2014*.

- Santos has provided information noting that there would be potential risk to a number of MNES (a number of which are also MSES) and that further assessment is required.

ASSESSMENT APPROACH:

If you agree that the action is a controlled action, you must also decide on the approach for assessment in accordance with section 87 of the EPBC Act. The matters for consideration in making a decision on assessment approach are outlined in section 87(3) of the EPBC Act (see the table below). Under section 87(5) of the EPBC Act, you may decide on an assessment on preliminary documentation only if you are satisfied that the approach will enable an informed decision to be made about whether or not to approve the taking of the action.

The department recommends that this proposal be assessed on preliminary documentation with further information required under section 95A of the EPBC Act. The department considers there are a number of existing management frameworks that have been developed to manage CSG extraction in Queensland which may be directly applicable to this project including a refined ECP, the JIF and CRAF. While there is uncertainty and complexity, the use of these frameworks is likely to ensure that significant impacts can be appropriately managed.

The department considers assessment via preliminary documentation with further information required represents an appropriate method that will ensure the impacts on protected matters are appropriately assessed.

In making your decision you must consider the matters summarised in the table below:

Matter to be considered	**Comment**
Information relating to the action given to the Minister in the referral of the proposal to take the action – s87(3)(a)	The referral is at Attachment A.
Any other information about the impacts of the action considered relevant (including information in a report on the impacts of the action under a policy, plan or program under which the action is to be taken that was given to the Minister under an agreement under Part 10) - s87(3)(b)	Relevant information is discussed in the Department's advice on relevant impacts contained in the referral decision brief (at Attachment A).
Any comments received from a State or Territory minister relevant to deciding the appropriate assessment approach – s87(3)(c)	One comment was received in response to an invitation under s74(2) for this proposal. On 14 July 2021, the Queensland Department of Environment and Science (DES) responded (Attachment C), noting the action will not be

	assessed in a manner under which the bilateral agreement between the Commonwealth and Queensland would apply.
Guidelines (if any) published under s87(6), and matters (if any) prescribed in the regulations – s87(3)(d) and (e)	No guidelines have been made and no regulations have been prescribed.

OTHER MATTERS FOR DECISION-MAKING:

Significant impact guidelines

The Department has reviewed the information in the referral against the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance* (December 2013) and other relevant material. While this material is not binding or exhaustive, the factors identified are considered adequate for decision-making in the circumstances of this referral. Adequate information is available for decision-making for this proposal.

Precautionary principle

In making your decision under section 75, you are required to take account of the precautionary principle (section 391). The precautionary principle is that a lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.

Bioregional Plans

In accordance with section 176(5), you are required to have regard to a bioregional plan in making any decision under the Act to which the plan is relevant. There is no bioregional plan that is relevant to your decision.

Management Plans for Commonwealth Reserves

In accordance with section 362(2), the Commonwealth or a Commonwealth agency must not perform its functions or exercise its powers in relation to a Commonwealth reserve inconsistently with a management plan that is in operation for the reserve. There is no Commonwealth reserve management plan that is relevant to your decision.

Cost Recovery

The fee schedule (with justifications) for your consideration is at Attachment D. The fee schedule (without justifications) at Attachment E will be sent to the person taking the action, including an invoice for Stage 1, seeking fees prior to the commencement of any further activity.

s. 22(1)(a)(ii)
Director
Queensland North
Environment Assessments Queensland and Sea Dumping branch
s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Queensland North
s. 22(1)(a)(ii)

July 2021

ATTACHMENTS

A: Referral documentation

B1: ERT Report dated 23 July 2021

B2: OWS Line Area Advice dated 13 July 2021

C: Ministerial comments

C1: Public comments

D: Fee schedule (with justifications)

E: Fee schedule (without justifications)

F: Decision notice FOR SIGNATURE

G: Letters to the proponent & Ministers FOR SIGNATURE

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Friday, 27 August 2021 4:25 PM
To: s. 47F(1)
Cc: s. 47F(1) s. 47F(1)
Subject: RFI - Towrie Gas Development (EPBC 2021/8979) [SEC=OFFICIAL]
Attachments: 2021-8979 Towrie Gas Development RFI.pdf

Dear s. 47F(1)

Please find attached the department's Request for Further Information as part of the assessment of the Towrie Gas Development, Queensland (EPBC 2021/8979).

Please get in touch if you wish to discuss or have any questions.

Kind regards
s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Queensland North Assessments
Environment Assessments Queensland and Sea Dumping
Department of Agriculture, Water and the Environment

s. 22(1)(a)(ii) | : John Gorton Building, King Edward Terrace, Parkes | : GPO Box 858, Canberra ACT 2601
s. 22(1)(a)(ii) : awe.gov.au

Additional information required for assessment by preliminary documentation

Towrie Gas Development, Arcadia Valley within the Surat Basin, Queensland (EPBC 2021/8979)

On 28 July 2021 the delegate of the Minister for the Environment determined the above project is likely to have a significant impact on the following matters protected under Part 3 of the Environment Protection and Biodiversity Act 1999 (EPBC Act):

- Listed threatened species and communities (section18 & section18A); and
- A water resource, in relation to coal seam gas development and large coal mining development (section 24D & section 24E)

It has been determined that the proposed action will be assessed by preliminary documentation. Preliminary documentation for the proposal will include:

- The information contained in the original referral;
- The further information you provide on the impacts of the action and the strategies you propose to avoid, mitigate and offset those impacts (as described below); and
- Any other relevant information on the matters protected by the EPBC Act.

The preliminary documentation should be sufficient to allow the Minister (or delegate) to make an informed decision on whether to approve, under Part 9 of the EPBC Act, the taking of the action for the purposes of each controlling provision.

The preliminary documentation must address the matters set out below and follow the content, style and formatting requirements set out in Appendix A.

1. DESCRIPTION OF THE ACTION

Information required	
1.1	Include updated information if any changes have been made to the project since the referral documentation was submitted

2. HABITAT ASSESSMENT

Background

Based on the information provided in your referral, and other available information, the department considers that the listed species identified below may be significantly impacted by the proposed action.

It is the proponent's responsibility to be aware of any changes to the distribution of listed threatened and migratory species, and information available in the Species Profile and Threats (SPRAT) Database. The proponent must ensure that a recent Protected Matters Search Tool (PMST) report has been generated and considered before finalising the draft preliminary documentation.

Habitat assessments must be informed by desktop and field surveys (in accordance with departmental guidelines or as defined by best practice surveys), and with reference to relevant departmental documents (e.g. approved Conservation Advices, Recovery Plans, draft referral guidelines and Listing Advices, and SPRAT Database), including published research and other relevant sources.

The department does not accept the consideration of only Queensland Regional Ecosystem (RE) mapping to determine habitat for listed threatened species.

Listed threatened species includes, but is not limited to:

- Brigalow (*Acacia harpophylla dominant and codominant*) - Endangered
- Poplar Box Grassy Woodland on alluvial plains - Endangered
- Semi-Evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions - Endangered
- *Acacia grandifolia* - Vulnerable
- *Bertya opponens* - Vulnerable
- Ooline (*Cadellia pentastylis*) - Vulnerable
- *Xerothamnella herbacea* - Endangered
- Australian Painted Snipe (*Rostratula australis*) - Endangered
- Grey Falcon *(Falco hypoleucos)* - Vulnerable
- Painted Honeyeater (*Grantiella picta*) - Vulnerable
- Red Goshawk (*Erythrotrorchis radiatus*) - Vulnerable
- Squatter Pigeon (southern) (*Geophaps scripta scripta*) - Vulnerable
- Greater Glider (*petauroides Volans*) - Vulnerable
- Koala (*Phascolarctos cinereus*) - Vulnerable
- Large-eared Pied Bat (*Chalinolobus dwyeri*) - Vulnerable
- Northern Quoll (*Dasyurus hallucatus*) - Endangered
- South-eastern long-eared Bat (*Nyctophilus corbeni*) - Vulnerable
- Adorned Delma (*Delma torquata*) - Vulnerable
- Dunmall's Snake (*Furina dunmalli*) - Vulnerable
- Ornamental Snake (*Denisonia maculata*) - Vulnerable
- Yakka Skink (*Egernia rugosa*) – Vulnerable

2.1 Species general information

Information required	
2.1.1	Include an assessment of the adequacy of any surveys undertaken (including survey effort and timing). In particular, the extent to which these surveys were appropriate for the listed species or community and undertaken in accordance with relevant departmental survey guidelines. The referral documentation states that 'there would be potential risk to a number of MNES and further assessment is required'. Provide clarification in the PD if further assessments and/or survey effort have been undertaken for MNES.

2.1.2	Habitat clearance is listed in the referral as the primary impact mechanism to listed threatened species and communities. The department considers the proposed action has the potential of further impacts to listed species and communities that may include habitat degradation, reduction in habitat connectivity, noise, dust and light, changes to hydrological regimes, impacts to water quality and chemical risk. Provide further discussion regarding mitigation and avoidance of other potential impacts to MNES, including but not limited to, the above.
2.1.3	Habitat, particularly Threatened Ecological Communities (TEC), have been characterised within the project site. Clarification is required regarding the extent of the habitat/TEC beyond the project boundaries. For example, if an area of TEC within the project boundary continues beyond the boundary (part of a larger patch), any impacts to that TEC may increase in significance.

2.2 Species specific information

The preliminary documentation must address the following matters in addition to the general information listed above.

Information required	
Greater Glider (*Petauroides volans*) – Vulnerable	
2.2.1	The Greater Glider habitat mapping rules only includes remnant woodland. Greater Glider habitat also occurs in non-remnant woodland with sufficient hollows. This may require a re-assessment of total Greater Glider within the project area.
2.2.2	Pre-clearance survey efforts should include an analysis of tree hollow size and density suitable for use by the Greater Glider (e.g. denning) in the identified areas of Eucalypt forest and woodland containing hollow-bearing trees within and adjacent to the project site.
Koala (*Phascolarctos cinereus*) (combined populations of Qld, NSW and the ACT) – Vulnerable	
2.2.3	Include ‘shelter trees’ in the habitat mapping rules for the Koala.
Ooline (*Cadellia pentastylis*) - Vulnerable	
2.2.4	Referral documentation states that *Ooline* records pre-dating 1980 are determined ‘historical’. Given the longevity of the *Ooline*, provide clarification regarding the investigation that has occurred into historical records.
Squatter Pigeon (southern) (*Geophaps scripta scripta*) - Vulnerable	
2.2.5	Habitat mapping rules for the Squatter Pigeon do not include ‘highly modified or degraded habitats’ as dispersal habitat.

South-eastern long-eared Bat (*Nyctophilus corbeni*) - Vulnerable	
2.2.6	Referral documentation states 4 ha of roosting and foraging habitat critical for the South-eastern long-eared bat will be directly impacted via clearing, however uncertainty exists as to the density of the population due to minimal survey efforts undertaken.
Ornamental Snake (*Denisonia maculata*) - Vulnerable	
2.2.7	Habitat mapping rules for the Ornamental Snake should be expanded to include; floodplains, undulating clay pans and along the margins of swamps, lakes and watercourses. It also occurs on adjoining areas of elevated ground and has been recorded in woodlands and open woodlands of coolabah, poplar box, and brigalow, and in fringing vegetation along watercourses. Is known to prefer woodlands and open forests associated with moist areas, particularly Gilgais and depressions, but also lake margins and wetlands.
Adorned Delma (*Delma torquata*) - Vulnerable	
2.2.8	Suitable habitat can also occur between grazed or cropped areas, along road reserves and travelling stock routes. Maintaining connectivity between habitat patches is important. Habitat description of 'Eucalypt dominated woodland and open forests and exposed rocky areas' are not confined by reference to Remnant or HVR qualifiers.

2.3 Constraints Protocol

The PD must include a detailed, *Environmental constraints planning and field development protocol* (constraints protocol), that outlines the process for ensuring the proposed action adequately:

- considers MNES when siting gas field infrastructure; and
- avoids, minimises, mitigates, rehabilitates and/or offsets impacts to MNES.

The constraints protocol must provide constraints categories for MNES with consideration of their values (e.g. listing status), including proposed constraints, permitted activities and management measures under each category. Detailed discussion must be provided that links field survey, remote sensing data and habitat validation processes with avoidance, mitigation, reporting and offsetting requirements.

The preliminary documentation must address the following matters in addition to the general information listed above.

Information required	
2.3.1	Pre-disturbance surveys must be supervised by a suitably qualified person and undertaken in accordance with the department's survey guidelines in effect at the time of the survey or other equivalent survey methodology. Clarification is required regarding the role and pre-clearance survey procedures undertaken by the field scout.
2.3.2	The southern portion of the project area currently contains both High and Moderate constraints areas and is mapped as suitable habitat for several listed threatened species (Figure 1 – Towrie MNES constraints). This area has been deemed uncertain by the proponent as constraints categories have not been field validated and may be subject to change. Constraints categories are required to be well defined for assessment.
2.3.3	Inconsistencies in the mapping of vegetation communities occur within the project area between desktop RE mapping (figure 6) and assessed RE extent (figure 7) in the *MNES – Ecology Assessment Report*. Provide clarification of habitat descriptions and vegetation communities.
2.3.4	Both of the High and Moderate Constraints areas allow for 'Linear Infrastructure', and the Moderate Constraints area additionally allows for 'all petroleum activities'. Both of these constraints areas contain high quality habitat for MNES, including potential fauna corridors for movement across the project site i.e. riparian vegetation along waterways. Clarification and discussion are required regarding avoidance and mitigation strategies of the potential impacts of habitat fragmentation under the constraints protocol.
2.3.5	The Low Constraints category is described as areas of 'non-remnant vegetation without potential to contain MNES and its habitat'. This definition may exclude MNES habitat i.e. squatter pigeon dispersal habitat, Gilgai, isolated Koala food/shelter trees and small patches of habitat that may be used for movement of fauna across the landscape. The definition of the Low Constraints category needs to include the potential habitat for MNES and clarification is required of the pre-clearance survey effort to be undertaken before any activities occur within the Low Constraints area.
2.3.6	Review the habitat mapping rules and specific survey requirements, informing the Constraints Protocol, to ensure that they contain complete habitat descriptions and survey requirements for each MNES, as outlined in relevant documents, including, but not limited to, SPRAT, conservation advice and recovery plans.
2.3.7	As vegetation communities/habitat are clarified and further defined within the project site, update all reports, including the Constraints Protocol, as appropriate.

2.4 A water resource in relation to coal seam gas development and large coal mining development

Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development

Under section 131AB of the EPBC Act, the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC), which is a statutory body under the EPBC Act, will provide advice to the Minister on the referral.

The information guidelines for IESC advice on coal seam gas and large coal mining development proposals (IESC guidelines) providing guidance on the IESC's information needs can be found at the following website: http://www.iesc.environment.gov.au/publications/information-guidelines-independent-expert-scientific-committee-advice-coal-seam-gas.

The information provided in the draft PD will be reviewed by the IESC. The draft PD must cross-reference the IESC checklist, found in the IESC guidelines, to ensure that the IESC's information guidance has been considered and addressed.

The final PD must include the IESC advice and the proponent's response to that advice in the PD package that will be published for public comment.

The IESC provides a number of publications and resources, including the *IESC explanatory notes*, which can be used as guidance material in drafting the PD. These publications can be found at the following website: http://iesc.environment.gov.au/publications. Where the approach to assessment of impacts and management of water resources differs from that outlined in the IESC guidance documentation, provide detailed reasoning and justification.

Joint Industry Framework

The purpose of the joint industry framework (JIF) is to establish a consistent post-approval framework for the management of impacts on groundwater caused by coal seam gas (CSG) developments within the Surat Cumulative Management Area (Surat CMA) that are subject to approvals under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act).

The JIF provides a risk management framework to achieve stated outcomes for relevant matters of national environmental significance (MNES), also referred to as protected matters, and is intended to reduce duplication between the regulation of groundwater at a Commonwealth and State level.

The JIF relates only to groundwater and all aspects of the groundwater resource (including groundwater, organisms and other components and ecosystems that contribute to the physical state and environmental value of the groundwater resource). The management of surface water and other impacts to a water resource unrelated to groundwater is outside the scope of the JIF.

The significance of impacts by an action on a water resource is determined by the reduction in the value of the water resource. The key factor in determining the value of a water resource is its utility for third party users, including environmental and other public benefit outcomes. Consequently, the significance of impacts to a water resource is determined through the reduction in the current or future utility of the water resource to third party users

(associated users) caused by changes to hydrology and water quality from CSG and large coal mining developments. For the purposes of the JIF, associated users are water supply bores and groundwater dependent ecosystems (GDEs).

The EPBC Act does not protect these associated users as MNES in their own right, but conditions controlling the impact of an action on these associated users are used to ensure the management of impacts on a water resource. The Department has established outcomes for each associated user, and the JIF establishes the management frameworks to achieve those outcomes. The application of the outcomes and management frameworks to projects through approval conditions aims to ensure the acceptability of impacts by an action on a water resource.

The JIF can be found here; https://www.environment.gov.au/epbc/publications/coal-seam-gas-joint-industry-framework

The hydrology relevant to the proposed action area, including surface water and groundwater

Provide a regional overview of the proposed action area, including a description of the geological basin, coal resource, surface water catchments, groundwater systems and water-dependent assets.

Describe any potential third-party users of water in areas potentially affected by the proposed action, including municipal, agricultural, industrial, recreational and environmental uses of water.

The PD must include a description and assessment of the impacts to water resources giving consideration to relevant departmental policies and guidelines, including the JIF and *Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments – impacts on water resources* (2013). These guidelines can be found at the following website: http://environment.gov.au/resource/significant-impact-guidelines-13-coal-seam-gas-and-large-coal-mining-developments-impacts.

The PD must provide robust scientific information and supporting evidence for every assertion, assumption and/or conclusion made in the assessment of potential impacts, or lack of impacts, on *water resources* (*Water Act 2007*).

Monitoring, mitigating and managing impacts

The PD must outline methodologies and commitments for ongoing monitoring, identifying, assessing (including incorporation of a risk assessment) and managing impacts to *water resources* for the life of the project. Methodologies should be specific to the particular water resource component.

The preliminary documentation must address the following matters in addition to the general information listed above.

Groundwater	
2.4.1	The groundwater model uses median hydraulic parameter values for the hydrogeological units in this area. Results from drilling may indicate that different hydraulic parameters should be used which would likely change the predicted

	drawdown ranges and extents. The department notes further that OGIA also provides 95th percentile predictions, for which impacts will be greater. The calibrated hydraulic parameters used in the OGIA groundwater model should be validated prior to the commencement of the commercial extraction of gas.
2.4.2	Should local-scale data indicate that hydraulic parameters are outside the calibrated values of the OGIA model, provide information outlining how the new local-scale data will affect model predictions.
Groundwater dependent ecosystems	
2.4.3	Given the presence of potential GDEs both within and adjacent to the proposed project area, although not required by the JIF, as a precautionary measure, it may be prudent to assess the groundwater dependency of riparian vegetation, including Gilgai and Brigalow on alluvial sediments using direct techniques (e.g. stable isotopes, leaf and soil water potential). Based on the results of a GDE assessment, an ecohydrological conceptual model should be developed, which outlines the potential hydrogeological connectivity and impact pathways between drawdown within the Rewan Group, alluvium and potential GDEs. The ecohydrological model should also include spring complexes, including those identified 10 to 25km to the west of the project area, associated with the Clematis Group and Precipice Sandstone.
2.4.4	Should these potential GDEs be confirmed as groundwater dependent, the ecohydrological conceptual model could be used to inform the locations and screening depths of additional monitoring bores which should be located near these potential GDEs. The Ecohydrological conceptual model should inform a GDE management plan, which includes the mitigation and monitoring measures used to protect the ecological values of these GDEs.
2.4.5	GDE assessment should consider relevant IESC guidance. The desktop and field assessments must consider the *Australian GDE toolbox* *part 1* *and* *part 2* (2011) and the *IESC GDE explanatory note* (2019).
Modified Wetlands	
2.4.6	Modified wetlands have been identified across the project site. A large wetland located adjacent to the public reserve in the northeast portion of the project site, is highlighted as an important habitat. This modified wetland is a confluence of several watercourses, including Station Creek. Proposed tracks, gas and water flow lines cross these water courses (Figure 6 – Towrie indicative development – first phase). Although these watercourses are ephemeral, they form part of the catchment for the wetland. Should these watercourses be modified or disturbed, the timing, duration, magnitude, and frequency of flows into the wetland may be materially changed. Narrow riparian vegetation associated with these watercourses may provide a corridor for movement of fauna to higher quality habitat.

	Clarification is required regarding the design of this infrastructure, including how impacts to flow and riparian vegetation is avoided or mitigated.
Surface water	
2.4.7	Flood modelling maps for a flood extent for 1% Annual Exceedance Probability (AEP) indicates that for a 1 in 100 year flooding event. Flooding may occur within the Brown River, as well as Arcadia Creek, Moolayember Creek and Station Creek. According to Figure 6 (Towrie indicative development – first phase) at least one proposed well lease and several access roads fall within this flood prediction area. Clarification is required regarding how potential impacts to project infrastructure, including well pads and storage tanks, caused by a 1% AEP flood event, will be mitigated and managed.
Produced water management	
2.4.8	The referral documentation notes that site water balances have been undertaken to ensure water management facilities provide adequate storage and treatment capacity. Water balances need to be provided to the department to enable further assessment.
Stygofauna	
2.4.9	It is stated within the referral guidelines that it is unlikely to be Stygofauna present within the targeted coal seams. However, Stygofauna may be present within the alluvium. Sampling of Stygofauna within the alluvium should be undertaken in accordance with the Department of Science, Information Technology and Innovation (DSITI) guidelines (2015). Stygofauna assessment guidance is available through the IESC guidelines explanatory note *Assessing groundwater-dependent ecosystems* (2019).
Cumulative Impacts	
2.4.10	The proposed action is part of the broader development of CSG resources by the proponent and other developers. The department notes additional individual tenures within the Surat basin from other developers are anticipated in future, including potential future developments by Santos, for example, ATP1191 (PLA1062) located immediately north of Towrie (Attachment A). The department notes cumulative impacts are not discussed in the referral documentation and therefore, the extent of the impacts on water resources are unknown. The department notes the uncertainty assessment derived from the OGIA modelling appears not to detail the cumulative impact contributions to the maximum predicted draw down from adjacent developments.

	The PD must identify and assess the scale and extent of all the potential and likely cumulative impacts on water resources from the proposed action and other nearby resource projects. Where cumulative impacts are predicted, avoidance, mitigation and management measures must be proposed.

2.5 Chemical Risk

Drilling and hydraulic simulation is to be used during operations requiring the lifecycle of chemicals to be identified and managed throughout the lifetime of the proposed action.

The proponents chemical risk assessment is declared to align with national guidance and includes a chemical risk assessment framework (CRAF) in the assessment and management of stored chemicals, handling, use and/or disposal during or following drilling and hydraulic fracturing activities.

The terms of the CRAF must include, but is not limited to:

a. Details of how the risks will be assessed consistent with best practice risk assessment methodology, and how for the assessment of the potential impacts of the chemicals proposed to be used in coal seam gas extraction on matters of national environmental significance. Will address:

i. the process lifecycle for chemicals;
ii. how risk from geogenic chemicals in produced water and recovered drilling fluids will be managed to prevent adverse impacts to protected matters; and
iii. minimum mitigation and management measures to be undertaken as part of coal seam gas operations.

b. Details of the criteria by which chemicals will be categorised, based on the properties of each chemical. Criteria must include, but not be limited to:

i. combined persistence, bioaccumulative and toxicity assessment;
ii. chemical database of concern assessment; and
iii. specific persistence, bioaccumulative and toxicity assessment.

c. Detail a risk assessment process for each chemical to determine risk to protected matters from the chemical's use. This process must:

i identify the risk assessment requirements based on the chemical's category;
ii consider the chemical's intended use and function, and an estimation of the quantity of the chemical likely to be used, and at what concentration, in a typical year;
iii consider the likely environmental fate of the chemical; and
iv consider what, if any, mitigation and management measures are needed to prevent adverse impacts to protected matters from that chemical for the duration of this approval.

d. Details of the process by which risk assessments for low risk chemicals will be peer reviewed by an independent chemical risk assessment expert. This process must:

i consider any checklists completed by the independent chemical risk assessment expert, to demonstrate that risks have been adequately assessed; and

ii include provision of a signed and dated statement from the independent chemical risk assessment expert confirming that the chemical has been correctly categorised.

e. Details of the process for recording each chemical's risk assessment in a register on the approval holder's website and for the provision of each chemical's risk assessment to the Department.

f. Details of a process to monitor and report on the implementation of any mitigation and management measures undertaken during use and handling of chemicals, to demonstrate no adverse impacts to protected matters, including:

i a monitoring and reporting framework that can measure and monitor the scale of hydraulic fracturing; and

ii to notify the Department if an adverse impact to protected matters is detected.

g. Details of the process by which information in the risk assessments will be adaptively used to address any accidental release of a chemical to prevent adverse impacts to protected matters.

The preliminary documentation must address the following matters in addition to the general information listed above.

Information required	
2.5.1	The department notes that accidental release scenarios have not been included in the chemical risk assessment and depend upon assessment outcomes to inform emergency response actions.

3. IMPACT ASSESSMENT

Background

The proposed action is considered likely to have impacts to listed threatened species and to water resources. The preliminary documentation must describe and assess all relevant impacts (direct, indirect, cumulative and facilitated) including the magnitude, duration and frequency of the impacts, and must be assessed in accordance with relevant departmental policies and guidelines, including the SPRAT Database.

Impacts during the construction, operational and decommissioning stages of the action are to be addressed, and the following information provided.

Information required	
3.1.1	Any technical data and other information used or needed to make a detailed assessment of the relevant impacts.
3.1.2	Include the direct and indirect loss and/or disturbance of MNES individuals and habitat as a result of the proposed action. This must include the quality of the habitat impacted and quantification of the individuals and habitat area (in hectares) to be impacted.
3.1.3	An assessment of the impacts of habitat fragmentation in the proposed action area and surrounding areas, including consideration of species' movement patterns
3.1.4	An assessment of the likely duration of impacts to MNES as a result of the proposed action; including a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts.
3.1.5	A discussion of whether the impacts are likely to be repeated, for example as part of maintenance.
3.1.6	A discussion of whether any impacts are likely to be unknown, unpredictable or irreversible.
3.1.7	Justification, with supporting evidence, how the proposed action will not be inconsistent with: • Australia's obligations under the Biodiversity Convention, the Convention on Conservation of Nature in the South Pacific (Apia Convention), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and • a recovery plan or threat abatement plan.

4. AVOIDANCE, MITIGATION AND MANAGEMENT MEASURES

Background

Avoidance and mitigation measures are the primary methods of eliminating and reducing significant impacts on MNES. Where possible and practicable, it is best to avoid impacts. If impacts cannot be avoided, then they should be minimised or mitigated as much as possible. Avoidance and mitigation measures must be investigated thoroughly as a part of the assessment and be supported by evidence to demonstrate likely success.

Management commitments by the person proposing to take the action must be clearly distinguished from recommendations or statements of best practice made by the document author or other technical expert.

The SPRAT Database, and associated statutory documents, may provide relevant mitigation measures for listed threatened species and ecological communities.

The department notes the referral includes a detailed description of the proposed avoidance, mitigation and management measures to be implemented by the proponent during the construction, operation and maintenance stages of the proposed action.

Information required	
4.1	A detailed summary of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of the proposed action on relevant MNES.
4.2	The proposed measures must be based on best available practices, appropriate standards, evidence of success for other similar actions and supported by published scientific evidence.
4.3	All proposed measures for MNES must be drafted to meet the 'S.M.A.R.T' principle: • S – Specific (what and how) • M – Measurable (baseline information, number/value, auditable) • A – Achievable (timeframe, money, personnel) • R – Relevant (conservation advices, recovery plans, threat abatement plans) • T – Time-bound (specific timeframe to complete)
4.4	Any management plans as committed by the proponent, are to be provided (in approved or draft format) as appendices to the preliminary documentation.
4.5	Details of specific and measurable environmental outcomes to be achieved for relevant MNES. All commitments must be drafted using committal language (e.g. 'will' and 'must') when describing the proposed measures.
4.6	Details of the proposed measures to be undertaken to avoid, mitigate and manage the relevant impacts of the proposed action, including those required through other Commonwealth, State and local government approvals.
4.7	Information on the timing, frequency and duration of the proposed avoidance, mitigation, management and monitoring measures, and corrective actions to be implemented.

4.8	An assessment of the expected or predicted effectiveness of the proposed measures.
4.9	Any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans.
4.10	Details of ongoing management, including monitoring programs to support an adaptive management approach, that validate the effectiveness of the proposed measures and overall demonstrate that environmental outcomes will be achieved.
4.11	Details of tangible, on-ground corrective actions that will be implemented in the event the monitoring programs indicate that the environmental outcomes have not or will not be achieved.
4.12	Details of any measures proposed to be undertaken by Queensland and local governments, including the name of the agency responsible for approving each measure.

5. REHABILITATION REQUIREMENTS

Describe the options, strategies and methods for progressive and final rehabilitation of the environment disturbed by the proposed action, including

Information required	
5.1	Decommissioning and/or rehabilitation that includes, but is not limited to, drilling and well sites, gas and water pipelines, areas of associated infrastructure (including access roads) and water storage sites.
5.2	Rehabilitation acceptance criteria, including for the restoration of habitat for relevant listed threatened species and communities.
5.3	A summary of the procedures, including contingency measures, that will be undertaken to achieve the rehabilitation acceptance criteria.
5.4	A summary of a monitoring program to determine the success of rehabilitation activities implemented by the proponent.
5.5	The details of any rehabilitation activities proposed to be undertaken as required by Commonwealth, State or Territory, and local government legislation. Attach relevant Commonwealth, State or Territory, and local government approvals and permits as supporting documents to the preliminary documentation.

6. OFFSETS

Background

Environmental offsets are measures that compensate for the residual significant impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after consideration of avoidance and mitigation measures. It is important to consider environmental offsets early in the assessment process. Correspondence with the department regarding offsetting is highly encouraged. The department's *EPBC Act Environmental Offsets Policy* (2012) (Offsets Policy) is available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy.

If appropriate, include a draft Offset Management Strategy (OMS) or a draft Offset Area Management Plan (OAMP) as an appendix in the preliminary documentation for assessment and approval. If an offset area has been nominated, then provide an OAMP. If not, provide an OMS. Further, the department is likely to recommend to the Minister (or delegate) that the conditions of approval require the environmental offset/s or the OAMP be approved and implemented prior to the commencement of the proposed action.

Information required	
6.1	An assessment of the likelihood of residual significant impacts occurring on relevant MNES, after avoidance, mitigation and management measures have been applied.
6.2	A summary of the proposed environmental offset and key commitments to achieve a conservation gain for each protected matter.
6.3	If an offset area has not been nominated, include a draft OMS as an appendix to the PD. The draft OMS must meet the information requirements set out in Appendix B.1.
6.4	Where offset area/s have been nominated, include a draft OAMP as an appendix to the PD. The draft OAMP must meet the information requirements set out in Appendix B.2, and must be prepared by a suitably qualified ecologist and in accordance with the department's *Environmental Management Plan Guidelines* (2014), available at: www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines.

7. ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

Information required	
7.1	A description of how the proposed action meets the principles of ESD, as defined in section 3A of the EPBC Act. More information on ESD is available at www.environment.gov.au/about-us/esd/publications/national-esd-strategy.

8. ECONOMIC AND SOCIAL MATTERS

Information required	
8.1	An analysis of the economic and social impacts of the action, both positive and negative.
8.2	Details of any public consultation activities undertaken and their outcomes.
8.3	Details of any consultation with Indigenous stakeholders. **Indigenous engagement** Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for managing those impacts. Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. The department considers that best practice consultation, in accordance with the *Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act* (2016) includes: • identifying and acknowledging all relevant affected Indigenous peoples and communities; • committing to early engagement; • building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management; • setting appropriate timeframes for consultation; and • demonstrating cultural awareness. Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.
8.4	Projected economic costs and benefits of the project, including the basis for their estimate through cost/benefit analysis or similar studies.
8.5	Employment opportunities expected to be generated by the project (including construction and operational phases).

9. ENVIRONMENTAL RECORD OF THE PERSON PROPOSING TO TAKE THE ACTION

Information required	
Include 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:	
9.1	the person proposing to take the action;
9.2	for an action for which a person has applied for a permit, the person making the application;
9.3	if the person is a body corporate—the history of its executive officers in relation to environmental matters; and
9.4	if the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers.

APPENDIX A: Preliminary documentation content, style and formatting requirements

A1. Content requirements	
A1.1	Be a stand-alone document containing sufficient information to avoid the need to search out previous or supplementary reports.
A1.2	Enable interested stakeholders and the Minister to easily understand the consequences of the project on matters of national environmental significance (MNES).
A1.3	Be written so that any conclusions reached can be independently assessed. Include all key claims, findings, proposals and undertakings in the main document.
A1.4	Refer to all relevant standards, policies and other guidance material published by the department. Any instances where published guidance is not followed must be justified. Where no Commonwealth standards exist, state government and industry standards may be useful.
A1.5	Include the names, roles and qualifications (where relevant) of all persons involved in preparing the preliminary documentation.
A1.6	Include a copy of this request for information and a cross-reference table indicating where the information fulfilling this request is included in the preliminary documentation (e.g. Section 4.2.2 and Appendix A, Chapter 2.1).
A1.7	The preliminary documentation must state the following for all information provided: • The source and date of the information; • How the reliability of the information was tested; • The uncertainties (if any) in the information; • The guidelines, plans, and/or policies considered.
A2. Format and style requirements	
A2.1	Be in a suitable format to be published in hardcopy (A4 or A3 size, with maps and diagrams in A4 or A3 size and in colour) and published in electronic format (e.g. MSWord or PDF) on the internet.
A2.2	Include detailed technical information, studies or investigations necessary to support the information in the stand-alone document as appendices.
A2.3	Be objective, clear, succinct, avoid technical jargon and, where appropriate, be supported by maps, plans, diagrams, data or other descriptive detail.

A2.4	Reference all sources using the Harvard standard of referencing. Ensure that other supporting documents (e.g. academic studies, regulatory standards) are publicly accessible, with electronic links provided where possible.
A2.5	Redact the contact details of departmental officers.
A2.6	Not contain any commercial in confidence markings. If the preliminary documentation contains sensitive information, please discuss this with the assessment officer.
A3. Ecological data provision	
A3.1	The preliminary documentation must include an appendix of occurrence records (both sightings and evidence of presence) for all listed threatened species identified during field surveys for the proposed action. This data may be used by the department to update the relevant species distribution models that underpin the publicly available Protected Matters Search Tool (PMST).
A3.2	The species occurrence records must be provided in accordance with the department's *Guidelines for biological survey and mapped data* (2018) using the species observation data template provided with this request for additional information. Sensitive ecological data must be identified and treated in accordance with the department's *Sensitive Ecological Data – Access and Management Policy V1.0* (2016) or subsequent revision.

APPENDIX B: Information Requirements for EPBC Act Offset Proposals

B1. Minimum Requirements for a draft Offset Management Strategy:	
B1.1	Specific details of the nature of the conservation gain to be achieved for relevant MNES, including the creation, restoration and revegetation of habitat in the proposed offset area/s.
B1.2	Details of the environmental offset/s (in hectares) to compensate for the residual significant impacts of the proposed action on relevant MNES.
B1.3	Details of the potential offset area/s (including a map) to compensate for the residual significant impacts of the proposed action on relevant MNES.
B1.4	The methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to the project site for each relevant MNES, including: • total area of habitat (in hectares); and • habitat quality (e.g. using the Queensland Government Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy [2020]).
B1.5	Details, with supporting evidence, of how the environmental offset/s meets the requirements of the department's EPBC Act Environmental Offsets Policy (2012) (Offsets Policy), available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy.
B1.6	The methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to each potential offset area/s for each relevant MNES, including: • time over which loss is averted (max. 20 years); • time until ecological benefit; • risk of loss (%) without offset; • risk of loss (%) with offset; and • confidence in result (%).
B1.7	Evidence that the relevant MNES, and/or their habitat, can be present in the potential offset area/s.
B1.8	Information about how the potential offset area/s provides connectivity with other relevant habitats and biodiversity corridors.
B1.9	Details and execution timing of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the potential offset area/s against development incompatible with conservation.

B2. Minimum Requirements for a draft Offset Area Management Plan:	
B2.1	Specific, committal and measurable environmental outcomes which detail the nature of the conservation gain to be achieved for relevant MNES, including the creation, restoration and revegetation of habitat in the proposed offset area/s.
B2.2	Details, with supporting evidence, to demonstrate how the environmental offset/s compensate for residual significant impacts of the proposed action on relevant MNES, and/or their habitat, in accordance with the principles of the Offsets Policy and all requirements of the Offsets Assessment Guide including: • time over which loss is averted (max. 20 years); • time until ecological benefit; • risk of loss (%) without offset; • risk of loss (%) with offset; and • confidence in result (%).
B2.3	A description of the offset area/s, including location, size, condition, environmental values present and surrounding land uses.
B2.4	Baseline data and other supporting evidence that documents the presence of the relevant MNES, and the quality of their habitat within the offset area/s.
B2.5	An assessment of the site habitat quality for the offset area/s (e.g. using the Queensland Government *Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy* [2020]).
B2.6	Details of how the offset area/s will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the relevant MNES.
B2.7	Maps and shapefiles to clearly define the location and boundaries of the offset area/s, accompanied by the offset attributes (e.g. physical address of the offset area/s, coordinates of the boundary points in decimal degrees, the relevant MNES that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares).
B2.8	Specific offset completion criteria derived from the site habitat quality to demonstrate the improvement in the quality of habitat in the offset area/s over a 20-year period.
B2.9	Details of the management actions, and timeframes for implementation, to be carried out to meet the offset completion criteria.
B2.10	Interim milestones that set targets at 5-yearly intervals for progress towards achieving the offset completion criteria.

B2.11	Details of the nature, timing and frequency of monitoring to inform progress against achieving the 5-yearly interim milestones (the frequency of monitoring must be sufficient to track progress towards each set of milestones, and sufficient to determine whether the offset area/s are likely to achieve those milestones in adequate time to implement all necessary corrective actions).
B2.12	Proposed timing for the submission of monitoring reports which provide evidence demonstrating whether the interim milestones have been achieved.
B2.13	Timing for the implementation of tangible, on-ground corrective actions to be implemented if monitoring activities indicate the interim milestones have not been achieved.
B2.14	Risk analysis and a risk management and mitigation strategy for all risks to the successful implementation of the OAMP and timely achievement of the offset completion criteria, including a rating of all initial and post-mitigation residual risks in accordance with a risk assessment matrix.
B2.15	Evidence of how the management actions and corrective actions take into account relevant approved conservation advices and are consistent with relevant recovery plans and threat abatement plans.
B2.16	Details and execution timing of the mechanism to legally secure the proposed offset area/s, such that legal security remains in force over the offset area/s for at least 20 years to provide enduring protection for the offset area/s against development incompatible with conservation.
B2.17	All proposed management actions, monitoring approach and corrective actions must be written using committed language (e.g. ‘will’ and ‘must’).

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Thursday, 2 September 2021 1:15 PM
To: s. 47F(1) s. 22(1)(a)(ii)
Cc: s. 47F(1)
Subject: RE: Towrie Gas Development (EPBC 2021/8979) - RFI [SEC=OFFICIAL]

Hi s. 47F(1),

Sounds good, just to let you know I will be on leave from Wed, 15th Sept to Wed, 22nd Sept inclusive. FYI - I currently have an open schedule after 10.30am on both Mon (13th) and Tues (14th) Sept, if that timing suits.

Thank you,
s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Queensland North Assessments
Environment Assessments Queensland and Sea Dumping
Department of Agriculture, Water and the Environment

s. 22(1)(a)(ii) | : John Gorton Building, King Edward Terrace, Parkes | : GPO Box 858, Canberra ACT 2601
s. 22(1)(a)(ii) : awe.gov.au

From: s. 47F(1)
Sent: Thursday, 2 September 2021 12:49 PM
To: s. 22(1)(a)(ii)
Cc: s. 47F(1)
Subject: RE: Towrie Gas Development (EPBC 2021/8979) - RFI [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Thanks for your reply. I'm on leave next week so we might gather our thoughts a bit more and then try to meet the following week if that's OK. We'll come back to you on it.

Thanks

From: s. 22(1)(a)(ii)
Sent: Thursday, 2 September 2021 7:57 AM
To: s. 47F(1)
Subject: ![EXT]: RE: Towrie Gas Development (EPBC 2021/8979) - RFI [SEC=OFFICIAL]

Hi s. 47F(1),

I am happy to set up a meeting to discuss, but unfortunately I will not have availability until at least Tuesday (7th) next week. If you have preferred times next week, let me know and I will send an invite.

Cheers,
s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Queensland North Assessments

Environment Assessments Queensland and Sea Dumping
Department of Agriculture, Water and the Environment

s. 22(1)(a)(ii) | : John Gorton Building, King Edward Terrace, Parkes | : GPO Box 858, Canberra ACT 2601
s. 22(1)(a)(ii) : awe.gov.au

From: s. 47F(1)
Sent: Wednesday, 1 September 2021 4:51 PM
To: s. 22(1)(a)(ii)
Subject: Towrie Gas Development (EPBC 2021/8979) - RFI

Hi s. 22(1)(a)(ii)

Do you have availability this week to discuss the Towrie RFI with s. 47F(1) and I? We will likely need to have another chat at a later date but we just wanted an initial discussion to get an idea of the format you would like.

Thanks

s. 47F(1)

Onshore Oil & Gas
Santos Limited, 32 Turbot Street, Brisbane QLD 4000
s. 47F(1)

santos.com

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Wednesday, 15 September 2021 6:28 PM
To: s. 47F(1)
Subject: Towrie Gas development (2021/8979) - RFI queries [SEC=OFFICIAL]

Hi s. 47F(1) and s. 47F(1)

Thank you for the meeting yesterday, apologies again about the IT difficulties.

I have included references to relatively recent PDs that have been published, as requested. Please note that each project's PD are tailored specifically to their project, but they should provide for a range of examples. I have included a link to the Vulcan Complex Project below; please let me know if you have any issues finding the other ones.

- Vulcan Complex Project (2020/8676) https://www.buysearchsell.com.au/notices/public-notices/vulcan-complex-project/5772602/
- Cleveland Bay Industrial Park (2020/8810)
- Wangetti Trail (2020/8722)

I am still confirming our preferred approach to clarifying the constraints categories located in the southern part of the project site. Perhaps we could discuss further next time we meet.

I am on leave, returning to the office on Thursday, 23 September. I am happy to arrange a meeting upon my return.

Kind regards,
s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Queensland North Assessments
Environment Assessments Queensland and Sea Dumping
Department of Agriculture, Water and the Environment

s. 22(1)(a)(ii) | : John Gorton Building, King Edward Terrace, Parkes | : GPO Box 858, Canberra ACT 2601
s. 22(1)(a)(ii) : awe.gov.au