



Our ref: D22/166803

Department of  
**State Development, Infrastructure,  
Local Government and Planning**

Mr Andrew Hall  
Team Lead Access Approvals  
Arrow Energy

e-mail: [andrew.hall@arrowenergy.com.au](mailto:andrew.hall@arrowenergy.com.au)

28 March 2023

Dear Mr Hall

## **Further requirement notice**

### **RPI21/028 Arrow – Wells and Gathering Lines**

*(Given under s44 of the Regional Planning Interests Act 2014 (RPI Act))*

I refer to your application received on 20 September 2021, amended on 15 July 2022, for a regional interests development approval (RIDA) under section 29 of the *Regional Planning Interests Act 2014* (RPI Act) for the Wells and Gathering Lines project associated with the Surat Gas Project.

I also refer to the requirement notices dated 5 October 2021 and 27 October 2021, and to the response to the requirement notices received on 29 June 2022.

### **Application details**

Applicant Arrow Energy Pty Ltd – ABN 73 078 521 936  
Arrow (Tipton) Pty Ltd – ABN 17 114 927 507  
Arrow (Tipton Two) Pty Ltd – ABN 36 117 853 755  
Arrow CSG (Australia) Pty Ltd – ABN 54 054 260 650

Project Arrow – Wells and Gathering Lines project

### **Site Details**

Real property description Lot 57 SP193329, Lot 36 DY45, Lot 1 RL2451, Lot 1 DY931, Lot 70 DY138, Lot 1 RP154777, Lot 1 DY787, Lot 60 DY802, Lot 2 RP106958, Lot 12 SP193328, Lot 2 RP99387 and Lot 2 DY787

Street address Daandine-Nandi Rd, Ranges Bridge 4405; Moonie Highway, Nandi 4405; 1662 Daandine-Nandi Rd, Nandi 4405; 194 Hoadleys Rd, Ducklo 4405

1 William Street  
Brisbane Qld 4000  
PO Box 15009 City East  
Queensland 4002 Australia  
**Telephone** 13 QGOV (13 74 68)  
**Website** [www.dsdilgp.qld.gov.au](http://www.dsdilgp.qld.gov.au)  
**ABN** 25 166 523 889

Local government area	Western Downs Regional Council
Area of regional interest	Priority agricultural area (PAA) Strategic cropping area (SCA)
Proposed area to be disturbed	49 ha of PAA 47 ha of SCA

### Information requirement

More detailed information is required to assess your application against the assessment criteria. The identified issues and recommended actions are set out in **Attachment A**.

Your response to this requirement notice must be provided within three months from the date of this notice. An extension to this period may be requested if necessary.

If you have any queries, please contact Ms Morag Elliott, Manager, Planning Group, Department of State Development, Infrastructure, Local Government and Planning (DSDILGP), by telephone on (07) 3452 7653 or by email at [RPIAct@dsdilgp.qld.gov.au](mailto:RPIAct@dsdilgp.qld.gov.au) who will be pleased to assist.

Yours sincerely



Phil Joyce  
**Director Development Assessment  
Planning Group**

Enc Attachment A

**ATTACHMENT A**

**Further information required for assessment against PAA and SCA criteria**

In relation to Schedule 2, Part 2 and Part 4 of the Regional Planning Interests Regulation 2014 (RPI Regulation)

<b>Consultation</b>	
<b>Priority Agricultural Area (PAA)</b>	
1.	<p><b><u>Issue:</u></b></p> <p>The proposed activity must be consistent with the Darling Downs Regional Plan 2013 (regional plan) which seeks to maximize opportunities for co-existence of resource and agricultural land uses within PAAs.</p> <p><b><u>Actions:</u></b></p> <p>Provide further details of how the proposed activity would be undertaken to maximize opportunities for coexistence with surrounding agricultural land uses.</p>
2.	<p><b><u>Issue:</u></b></p> <p>The submitted information indicates that Arrow Energy has developed a program to incorporate landholder knowledge into development plans and will seek to work with landholders to identify locations for well pads, gathering lines and access tracks.</p> <p>Further detail is required to demonstrate compliance with several prescribed solutions under RO1 and RO2 that relate to potential impacts on the PAA and RO3 for the SCA.</p> <p><b><u>Action:</u></b></p> <p>Provide further information on engagements with landowners in the Nandi / Duleen / Kupunn area.</p>
3.	<p><b><u>Issue:</u></b></p> <p>The Figure titled ‘Wells and Gathering Infrastructure on Warakirri Properties’ on page 17 of Arrow’s Updated report identifies well paths on lots not subject to the RIDA application.</p> <p><b><u>Actions:</u></b></p> <p>Update the abovementioned ‘Figure’ to only show activities on lots subject to the application.</p>
4.	<p><b><u>Issue:</u></b></p> <p>The application material indicates the proposed gathering lines would be buried to a depth of 900mm.</p> <p><b><u>Actions:</u></b></p> <p>In accordance with PS (3)(d) of RO1, provide further information to demonstrate that the depth of the gathering lines would not impact on farming practices, such as deep ripping of soil.</p>

5.	<p><b><u>Issue:</u></b></p> <p>The application material includes inconsistencies and a lack of detail on the surface distance of each well trajectory and the depths from the surface of entry, exit and terminal points.</p> <p><b><u>Actions:</u></b></p> <p>Provide the following detailed information for each well trajectory:</p> <ul style="list-style-type: none"> <li>• updated tables and shapefiles as required to ensure the surface distance lengths between the reference points correlate</li> <li>• confirm the length of each deviated well (surface distance).</li> </ul>
6.	<p><b><u>Issue:</u></b></p> <p>The application material includes inconsistencies on the widths for the proposed rights of way and a lack of information on the timing for associated management and restoration of the rights of way.</p> <p><b><u>Actions:</u></b></p> <p>Provide:</p> <ul style="list-style-type: none"> <li>• updated reporting and submit shape files to confirm the width of proposed rights of way</li> <li>• indicative timeframes for the management and restoration of the proposed rights of way.</li> </ul>
7.	<p><b><u>Issue:</u></b></p> <p>The application material indicates that construction of the proposed activity exceeds 2% of the land on Property 1.</p> <p><b><u>Actions:</u></b></p> <p>In accordance with PS (3)(a)(ii) for RO1, amend the proposal to ensure the carrying out of the activity (direct and indirect impacts) will not result in a loss of more than 2% of the land on the property used for PALU <b>and</b> the productive capacity of any PALU on the property.</p>
8.	<p><b><u>Issue:</u></b></p> <p>The application material indicates that agronomists have been engaged to determine the production and productive capacity of Lot 36 DY45 and the likely reduction in cropping yield.</p> <p><b><u>Actions:</u></b></p> <p>Provide details of the production and productive capacity of each lot or alternatively provide:</p> <ul style="list-style-type: none"> <li>• details on any discussions with the relevant landowner on potential yield reduction</li> <li>• a copy of the agronomist's assessment of Lot 36 DY45, including the methodology, assumptions and data used for property wide yield assessments</li> <li>• details of cropping yields for similar cropping systems undertaken on similar soil types in the area.</li> </ul>

Strategic cropping area	
9.	<p><b><u>Issue:</u></b></p> <p>Several assessment criteria in the PAA and SCA require the construction and operational footprint of the proposed activity to be minimised.</p> <p><b><u>Actions:</u></b></p> <p>Provide further information to show how the operational and construction operations have been minimised. The information should include:</p> <ul style="list-style-type: none"> <li>• all proposed temporary and permanent infrastructure</li> <li>• comparisons with operational / construction footprints for other similar types of activities</li> <li>• Shape files that have been clipped to the property boundaries for the lots subject to the application.</li> </ul>
10.	<p><b><u>Issue:</u></b></p> <p>The submitted Phase 2 Soil Assessment, dated 22 June 2021 and prepared by AECOM ('Soil Report'), includes inaccuracies and lacks detailed information.</p> <p><b><u>Action:</u></b></p> <p>In accordance with the PS for RO2 and PS 1(d) for RO3, where practical, provide an updated and accurate Soil Report. The updated Soil Report should include:</p> <ul style="list-style-type: none"> <li>• soil profile descriptions and photographs of a suitable scale</li> <li>• shape files to include soil description locations</li> <li>• detailed analytical information for surface sites at a scale of 1:25,000 or 1:50,000</li> <li>• update the Linear Features Guideline (Table 1) to show a soil description sites for every 200–500m for linear infrastructure</li> <li>• where practical, provide direct site data for the gathering lines and well pads</li> <li>• update Table 9 (summary of the soil map unit morphology) to reflect the range of soils described in the soil logs in Appendix A</li> <li>• confirm the accuracy of the field textures, horizon nomenclature, structure, descriptions of mottles, coarse fragments, segregations and drainage (refer to the <i>Australian Soil and Land Survey Field Handbook</i>)</li> <li>• provide higher resolution photographs in Appendix A to confirm the attributes of the exposed profile to the final depth</li> <li>• update Table 10 to include all laboratory analysis results. For example Total Nitrogen (TN) and Total Potassium (TK) are discussed in the text, but not included in the table. Moreover, calcium and magnesium levels are described as high, but are not individually reported</li> <li>• confirm the reported exchangeable sodium capacity (ESP), chloride and electrical conductivity results of DS01 (usually increase with depth)</li> <li>• update Table 10 to address inconsistencies between pH, EC and CEC values in the text and table</li> <li>• provide laboratory results for all analysed profiles - not just DS01</li> <li>• provide a soils map which clearly delineates the range of soil types and their soil limitations that are relevant to restoration</li> </ul>

	<ul style="list-style-type: none"> <li>• provide the spatial file (in an ArcGIS compatible format using the geodetic datum GDA2020) of the soil map units, and the precise location of all check sites, detailed sites, and analytical sites</li> <li>• individually discuss each analytical site in the Soil Report using suitable resolution photographs.</li> </ul>
11.	<p><b><u>Issue:</u></b></p> <p>The description of soils in the Erosion Sediment Control Plan (ESCP) is inconsistent with the Soil Report.</p> <p><b><u>Actions:</u></b></p> <p>Amend the ESCP and Soil Report, as necessary, to ensure accuracy and consistency of information.</p>
12.	<p><b><u>Issue:</u></b></p> <p>The Soil Erosion, Subsidence and Restoration Management Plan, dated 17 March 2022, prepared by BeneTerra and ESCP shows unusually high soil loss (during topsoil removal) for a flat landscape.</p> <p>In addition, the ESCP does not include a clearly defined set of aims, performance requirements or a monitoring program.</p> <p><b><u>Actions:</u></b></p> <p>In accordance with the PS for RO2 and PS (1)(d) for RO3, provide amended reporting to include:</p> <ul style="list-style-type: none"> <li>• detailed information on aims, performance requirements and monitoring programs</li> <li>• further information on key risks and controls in Table 8.</li> </ul>
<b>Section 5 Subsidence Management Plan (SMP)</b>	
13.	<p><b><u>Issue:</u></b></p> <p>The description of soils in the Subsidence Management Plan (SMP) are inconsistent with the Soil Report.</p> <p>The SMP that relates to subsidence from surface impacts should be updated to include further information.</p> <p><b><u>Actions:</u></b></p> <p>In accordance with the PS for RO2 and PS (1)(d) for RO3, update the SMP to ensure consistency with the Soil Report and include the following:</p> <ul style="list-style-type: none"> <li>• update Table 13 to clarify or correct any inconsistencies between restoration requirements and 'controls' to reduce the risk of subsidence</li> <li>• the proposed inspection frequency</li> <li>• the methodology to monitor change in surface elevation, investigation triggers, and actions if breaches are detected</li> <li>• actions for situations when higher rainfall intensity occurs (e.g., 75 mm/day)</li> <li>• more detail regarding the items listed in Table 15.</li> </ul>

<b>Restoration Plan</b>	
14.	<p><b><u>Issue:</u></b></p> <p>EC for soils should be reported in units of dS/m. Figure 8 (page 17) reports EC1:5 in us/cm.</p> <p>Chloride values in Figure 10 (Chloride within soil profile; page 17) are not to scale.</p> <p><b><u>Actions:</u></b></p> <p>To demonstrate compliance with PS (1)(d)(i) for RO3, report all EC values in dS/m and present all chloride plots at a consistent scale.</p>
15.	<p><b><u>Issue:</u></b></p> <p>Field pH and EC results for all detailed sites in the Soil Report should be used in the Soil chemical data graphs at page 17.</p> <p>Other detailed sites (e.g., DS03 and 06) are closer to the gathering lines, and soils information from those sites would provide additional information for the establishment of pre-activity condition.</p> <p>The Restoration Plan should also use analytical data for the common soils in <i>Land Resource Areas from the Central Darling Downs Land Management Manual</i>.</p> <p><b><u>Actions:</u></b></p> <p>Revise the Soil chemical data graphs on page 17 of the Soil Report, as noted above. In addition, to demonstrate compliance with PS (1)(d)(i) for RO3, utilise additional available analytical and field data to provide a more thorough assessment of pre-activity condition in the Soil Report.</p> <p>Revise the Restoration Plan to incorporate the analytical data for the common soils, as noted above.</p>
16.	<p><b><u>Issue:</u></b></p> <p>The submitted Restoration Plan is inconsistent with the Soil Report and includes limited detail on specific mechanisms required to restore the SCL to its pre-activity condition and monitoring of restoration outcomes.</p> <p><b><u>Actions:</u></b></p> <p>In accordance with PS (1)(d) for RO3, where practical, update the Restoration Plan to ensure consistency with the Soil Report and in doing so, address the following:</p> <ul style="list-style-type: none"> <li>• clarify the description of pre-activity condition of the soil types as information provided does not appear to be based on any published land resource survey literature, existing Queensland Government publicly available soil data from Qld Globe/QSPATIAL, or the results of the site-specific Soil Assessment report</li> <li>• clarify specific timeframes for commencing and completing restoration, monitoring requirements/schedules and post-restoration monitoring.</li> </ul>
17.	<p><b><u>Issue:</u></b></p> <p>It is understood that drilling mud has high levels of Cl and EC. Using residual drilling mud as backfill carries the potential for soils to be</p>

	<p>detrimentally impacted. Spreading or backfilling with drill mud will create a hostile environment for plant germination and growth. A non-hostile environment is essential for successful restoration.</p> <p><b><u>Actions:</u></b></p> <p>To demonstrate compliance with PS (1)(d)(i) for RO3, update all relevant sections of the Restoration Plan to reflect that:</p> <ul style="list-style-type: none"> <li>• residual drilling mud will not be used as backfill</li> <li>• residual drilling mud will be removed from site.</li> </ul>
18.	<p><b><u>Issue:</u></b></p> <p>There are contradictions between the Updated report, the Soil Report and the Restoration Plan about whether the soils will be returned in the same order as extraction.</p> <p>The Restoration Plan specifies that soil will be removed, pipe set in place, and then excess (displaced) soil will be spread over the RoW beside the pipeline at a variable thickness. The Restoration Plan appears to be relying on ‘dilution is the solution’, as it is proposing that saline subsoil will be mixed with less saline topsoil to, in effect, ‘even it all out’.</p> <p>The Restoration Plan states (at section 6.4) that the soil profile is sodic below 90 cm, whereas the data shows the soils are sodic below 50 cm.</p> <p><b><u>Actions:</u></b></p> <p>To demonstrate compliance with PS (1)(d)(i) for RO3, update the commitments in all relevant sections to:</p> <ul style="list-style-type: none"> <li>• clarify contradictions between the Updated report, the Soil Report and the Restoration Plan about whether soil horizons will be returned in the same order as extraction</li> <li>• confirm that spreading of trench material in the RoW will not cause detrimental impacts to the soil and subsequent crop productivity</li> <li>• correct descriptions of the depth to sodic soil horizons.</li> </ul>
19.	<p><b><u>Issue:</u></b></p> <p>Page 20 of the Restoration Plan refers to the SCL threshold as the aim for restoration, not a set of defined restoration criteria (based on pre-activity condition). The SCL criteria are not designed as restoration criteria.</p> <p>Aiming for Cl values of 800 mg/kg at the surface is not appropriate. Further, 800 mg/kg of chloride at the surface is not recommended for successful germination and establishment of crops.</p> <p>The Restoration Plan is lacking assessment of plant vigor and yield, both before and after disturbance.</p> <p><b><u>Actions:</u></b></p> <p>To demonstrate compliance with PS (1)(d)(i) for RO3, revise the restoration criteria to increase focus on crop productivity and strategies to investigate and mitigate any areas of decreased productivity.</p>
20.	<p><b><u>Issue:</u></b></p> <ul style="list-style-type: none"> <li>• The information required to verify success for both the gathering lines and wells (Table 20 and 21) contains limited detail and poor linkages to the respective ‘assurance requirements’ (Table 23).</li> </ul>



	<ul style="list-style-type: none"> <li>• A major limitation to reinstatement of these clay soils is the compaction of the soil that would occur during the stripping, stockpiling, and replacement processes if undertaken at incorrect soil moisture contents.</li> <li>• There is insufficient detail on excavation, placement and mechanisms to ensure viability of the topsoil.</li> <li>• Some of the details for restoration are included in the ESCP and not the Restoration Plan.</li> <li>• Stockpiling timeframes proposed for the well heads are inappropriate.</li> <li>• A note under Table 23 refers to soil sample validation, the Linear Feature Guidelines and a scale of 1:25 000 without any context.</li> </ul> <p><b><u>Actions:</u></b></p> <p>To demonstrate compliance with PS (1)(d)(i) for RO3:</p> <p>(a) update Table 20, 21 and 23 of the Restoration Plan to include more detail, ensuring consistency with the commitments required to restore the land to its pre-activity condition</p> <p>(b) provide more detail on:</p> <ul style="list-style-type: none"> <li>(i) mechanisms to ensure viability of the topsoil, maximum heights of all stockpiles</li> <li>(ii) strategies to ensure stockpiles are not compacted, located in flooding areas, subject to water/wind erosion, and not disturbed by vehicles/human traffic/livestock/pest mammals/weeds</li> <li>(iii) strategies to ensure stockpiles will not cause/contribute to concentration of surface runoff, must have erosion and sediment control structures installed/maintained during and after rainfall events</li> <li>(iv) options to maintain the biological activity, infiltration, structural characteristics, and productivity, including alternate strategies to stockpiles</li> <li>(v) the appropriate soil moisture at which ripping will be undertaken to avoid further compaction</li> <li>(vi) re-contouring disturbed areas to a level consistent to that of the surrounding terrain</li> <li>(vii) all restoration details in the Restoration Plan MP - without referring to a separate table in the ESCP</li> <li>(viii) the proposed inspection schedule</li> <li>(ix) monitoring and reporting of failures of any of the above; and</li> <li>(x) the proposed soil sample validation method, including adjacent undisturbed areas.</li> </ul> <p><i>Note:</i></p> <p><i>For restoration investigations, fully exposed soil profile are preferred. Statutory Guideline 09/14 also refers to 'a higher density of assessment sites to allow for meaningful and reliable statistical probabilities to be applied when assessing the success of restoration, instead of relying on less objective means.'</i></p> <p><i>All samples analysed must meet requirements and minimum data for observations as detailed in the Queensland Soil and Land Resource Information Guideline (Department of Resources 2021).</i></p>
21.	<p><b><u>Issue:</u></b></p> <p>There is insufficient detail included for decommissioning and/or removal of well pads, gathering lines and all other ancillary built infrastructure</p>

associated with the project to adequately demonstrate that a permanent impact will not occur.

**Actions:**

To demonstrate compliance with PS (1)(d)(i) for RO3, provide more detailed information about the decommissioning and/or removal of all well pads, gathering lines and other CSG-related surface infrastructure.