



Our ref: WR21/35440

Ensham Joint Venture
c/o Shane Wright
Executive General Manager - Operations & Development
Idemitsu Australia
e-mail: Shane.Wright@idemitsu.com.au

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

29 March 2022

Dear Mr Wright

Requirement notice

RPI22/002 Ensham – Life of Mine Extension Zones 2 and 3 (Given under s44 of the *Regional Planning Interests Act 2014 (RPI Act)*)

I refer to your application received on 17 March 2022 for a regional interests development approval (RIDA) under section 29 of the *Regional Planning Interests Act 2014 (RPI Act)* for resource activity: mining activities associated with the Ensham – Life of Mine Extension Zones 2 and 3 project. The application seeks approval for resource activities within the priority agricultural area (PAA) and strategic cropping area (SCA).

Application details

Applicant	Ensham Joint Venture
Project	Ensham – Life of Mine Extension Zones 2 and 3

Site Details

Street address	Duckponds Road Emerald QLD 4720
Real property description	Lot 31 CP864573 Lot 32 RP908643 Lot 30 CP864574 Lot 33 RP864576
Mining Lease (ML)	ML 70326, ML 70365, ML 7459, ML 7459 and ML 70366
Local government area	Central Highlands
Areas of regional interest	PAA and SCA
Proposed PAA disturbance area	0.64 ha
Proposed SAA disturbance area	0.16 ha

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Public notification requirement

Pursuant to section 34(4) of the RPI Act, it has been determined that the application requires notification. In accordance with section 35 of the RPI Act, you are required to publish a notice about the application in the way prescribed in section 13 of the Regional Planning Interests Regulation 2014 (RPI Regulation) and give the owners of the land notice about the application.

Public notification must commence within 10 business days of providing the information required to assist in the assessment of the application.

The notification period is 15 business days, with the closing date being the day that is after the end of the notification period. The approved form for public notification is available on the Department of State Development, Infrastructure, Local Government and Planning's website at <https://planning.statedevelopment.qld.gov.au/planning-issues-and-interests/areas-of-regional-interest>

You are also referred to the RPI Act Statutory Guideline 06/14 Public notification of assessment applications at <https://dsdmipprd.blob.core.windows.net/general/rpi-guideline-06-14-notification-requirements-under-rpi.pdf> for further information.

Information requirement

Further information is required to assist in the assessment of the application against the assessment criteria contained in the RPI Act and RPI Regulation.

The further information required is detailed in **Attachment A**. The period in which the information must be provided is a maximum of three months from the date of this notice. An extension to this period may be requested if necessary.

Another requirement notice may be given if, for example, the response to this requirement notice does not provide sufficient information to assess and decide the application, or in response to matters raised in any submission.

If you require any further information, please contact Ms Morag Elliott, Manager, Planning Group, Department of State Development, Infrastructure, Local Government and Planning, by telephone on (07) 3452 7653 or by email at morag.elliott@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely



Phil Joyce
Director
Development Assessment Division
Planning Group


Enc Attachment A

ATTACHMENT A

Information required for assessment against PAA and SCA criteria

In relation to the Schedule 2, Part 2 and Part 4

1	<p><u>Issue:</u></p> <p>The legend for Figure 12 in the application form indicates dryland cropping. This is inconsistent with other parts of the assessment materials that state that this area is use for grazing modified pastures.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
2	<p><u>Issue:</u></p> <p>Section 4 of the RPI Act Assessment Application Form (application form) states that areas for Mining Lease (ML) 73026 is 2,766 hectare (ha) and ML 70365 is 26 ha, whereas ML 73026 is 26 ha and ML 70365 is 2,766 ha.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
3	<p><u>Issue:</u></p> <p>Section 4 for the application form details that the existing Ensham Mine operates under Environmental Authority (EA) EPML00732813. The EA was not provided to confirm that it covers the various MLs the subject of the application.</p> <p><u>Actions:</u></p> <p>Provide an extract of the EA to confirm the holder of the EA, its currency and coverage of MLs detailed in the assessment application.</p>
4	<p><u>Issue:</u></p> <p>Section 4 for the application form details that the Ensham Mine operates under seven MLs. However, no supporting material was provided to confirm the ownerships of these MLs.</p> <p><u>Actions:</u></p> <p>Provide extracts of the listed MLs to confirm that these cover the operation of the existing and proposed activities at the Ensham Mine.</p>
5	<p><u>Issue:</u></p> <p>Section 5 of the application form states the applicant is Ensham Joint Venture. However, no supporting material was provided to confirm this entity.</p> <p><u>Actions:</u></p> <p>Provide supporting materials to confirm the entity Ensham Joint Venture, for example extract copies of the partnership agreement and articles of association, or other appropriate documents etc.</p>
6	<p><u>Issue:</u></p> <p>Section 1 of the Regional Interests Development Approval Supporting Document (supporting document) details company structure and corporate relationships</p>

	<p>between various corporate entities. This Section details that the ACN for Idemitsu Australia Resources Pty Ltd is the same as Idemitsu Australia Pty Ltd. It is unclear whether Idemitsu Australia Resources Pty Ltd is the same entity as Idemitsu Australia Pty Ltd.</p> <p>Idemitsu Australia Pty Ltd is detailed in many parts of the assessment application as one of the Ensham Joint Venture partners and the Applicant. It is unclear whether Bligh Coal Limited Pty Ltd a subsidiary (partially or wholly owned) of Idemitsu Australia Pty Ltd.</p> <p><u>Actions:</u> Confirm and update relevant assessment material.</p>
7	<p><u>Issue:</u> Section 1.1 of the supporting document details the proposed project activities. These activities do not include the expansion of open cut mining activities. However, spatial data provided detail a future open cut pit at the northern end of Lot 31 CP864573 outside of Zone 2 (Refer to image below).</p>  <p><u>Actions:</u> Confirm if the proposed activities include the expansion open cut pits including one at the northern end of Lot 31CP864573. Confirm and update relevant assessment material.</p>
8	<p><u>Issue:</u> Section 1.1 of the supporting document details the footprint areas of the proposed underground mining activities as 346 ha in Zone 2 and 175 ha in Zone 3. However, the spatial data details that the footprint of the underground mining activities in Zone 2 is approximately 117 ha, and in Zone 3 approximately 60 ha, with an overall total area of approximately 177 ha.</p> <p><u>Actions:</u> Confirm and update relevant application material.</p>

9	<p><u>Issue:</u></p> <p>Section 1.1 of the supporting document details that the mining technique for the expansion of the underground mining activities will be the continuation of bord and pillar mining. This technique is often referred to as first workings of a coal deposit. Section 4.2 in Appendix A details that an extension to MLs 7459, 70326 and 70365 to 2050 would be sought to accommodate additional underground mining.</p> <p><u>Actions:</u></p> <p>(a) Confirm the long-term plans for underground mining up to 2050 and if the proposed bord and pillar mining the subject of the assessment application is intended to be first workings with subsequent workings to remove the pillars at a later date.</p> <p>(b) Update relevant application material as required.</p>
10	<p><u>Issue:</u></p> <p>The third row of Table 3 of the supporting document details that Ensham is an eligible person. However, no supporting materials have been provided that Ensham is the holder of the EA or relevant resource authorities.</p> <p><u>Actions:</u></p> <p>Provided extracts of:</p> <p>(a) the EA to confirm the holder of the EA, its currency and coverage of MLs detailed in the application material</p> <p>(b) the listed MLs to confirm that these cover the operation of the existing and proposed activities at the Ensham Mine.</p>
11	<p><u>Issue:</u></p> <p>Section 4.1 of the supporting document details priority agricultural land use (PALU) identification and states that a portion of Zone 2 may qualify for land as used for a PALU – irrigated pastures. It is stated, based on advice from the Superintendent Environment for the Ensham Mine, that the area mapped in Zone 2 as irrigated pasture has been utilised for cattle grazing on Leucaena (a woody fodder plant) since 2011, and has not been irrigated. However, apart from two satellite images taken in 2017 and 2019 (provided as Figures 8 and 9), no other supporting information such as site photographs, site management plans, site inspection or observation records from staff at Ensham Mine, or forage frequency mapping is provided to confirm that no cultivation or cropping activities were undertaken during the period of 2012 to 2021.</p> <p><u>Actions:</u></p> <p>Provide a table and with accompanying narrative and evidence to support the view that no PALU, as defined in Section 8(2) in the <i>Regional Planning Interests Act 2014</i>, has been undertaken in this area or other areas in Zones 2 and 3 for the period 2012-2021 (Refer to Schedule 2, Section 1(1) in the <i>Regional Planning Interests Regulation 2014</i>).</p>
12	<p><u>Issue:</u></p> <p>Figure 9 provided in the supporting document includes Dryland cropping in its legend. However, this is inconsistent with Issue 13 above.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
13	<p><u>Issue:</u></p>

	<p>Figure 10 provided in the supporting document includes priority agricultural land use (irrigated cropping) in its legend. However, this is inconsistent with Issue 13 above.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
14	<p><u>Issue:</u></p> <p>Figure 11 provided in the supporting document</p> <p>(a) is titled as Figure 12 in the legend</p> <p>(b) includes Dryland cropping in its legend, which is inconsistent with Issue 13 above.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
15	<p><u>Issue:</u></p> <p>Figure 12 provided in the supporting document includes Dryland cropping in its legend. However, this is inconsistent with Issue 13 above.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
16	<p><u>Issue:</u></p> <p>Section 5.2 provided in the supporting document details that the lots the subject of the assessment application is operated as a single agricultural enterprise. However, the nature, scope and extent of the agricultural enterprise is not discussed.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
17	<p><u>Issue:</u></p> <p>Section 1 of the application form provides the real property descriptions of land the subject of the application. The lots on plan provided detail the land on which the proposed activities will be located on or underneath. Figure 13 of the supporting document supports that information. However, this is insufficient for the extent of the 'property' the subject of the application (Refer to Schedule 1 Dictionary of the <i>Regional Planning Interest Act 2014</i> for definition of 'property'), for example, it does include Lot 1 on RL203458 or Lot 34 on RP804576.</p> <p><u>Action:</u></p> <p>Confirm and update relevant assessment application material.</p>
18	<p><u>Issue:</u></p> <p>Section 6.1 of the supporting document details that flare exclusion zones will be restored to the pre-activity condition. However, no detail is provided on the pre-activity condition or reference made to where such information is provided.</p> <p><u>Actions:</u></p> <p>Confirm and update relevant assessment application material.</p>
19	<p><u>Issue:</u></p> <p>Section 1.1 in Appendix C of the supporting document states that <i>"this level of subsidence (less than 10 mm) and compared to natural soil movement of approximately 50 mm (IESC, 2015), subsidence will not impact land resources for the</i></p>

	<p><i>Project. Accordingly, subsidence is not considered further in this Assessment</i>'. However, this is not included in the supporting document itself.</p> <p><u>Actions:</u></p> <p>(a) Provide adequate explanation to support this statement in the supporting documents</p> <p>(b) Update relevant assessment application material to inform that impacts from subsidence is not considered in the assessment of surface disturbance.</p>
20	<p><u>Issue:</u></p> <p>Figure 10 in Appendix C of the supporting document is titled 'Soil Unit Map'.</p> <p><u>Actions:</u></p> <p>Confirm whether Figure 10 should be titled 'Soil Map Units' and update the Figure 10 as required.</p>
21	<p><u>Issue:</u></p> <p>The photograph provided in Appendix B (Detailed Profile Descriptions) to Appendix C of the supporting document for detailed site BH16 appears to be of Leucaena growing in Zone 2. However, there is no data or geo-stamp on this photograph to confirm when it was taken and as such it does not assist in the identification of land uses undertaken in that area.</p> <p><u>Actions:</u></p> <p>Confirm the data the photograph was taken and if it is of Leucaena growing in Zone 2, the subject of PALU identification detailed in Section 4.1 of the supporting document.</p>
22	<p><u>Issue:</u></p> <p>Section 4.8 in Appendix E (Subsidence Management Plan) of the supporting document details mitigation measures that may be required if a significant detection of subsidence occurs. There is insufficient information to consider if these measures are appropriate.</p> <p><u>Actions:</u></p> <p>Confirm what significant detection means and provide mitigation strategies and measures that detail actions and compensation (if required) to ensure there is no agricultural loss in affected areas, in terms of capacity, productivity and area used.</p>

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Issue:

The spatial data provided for the underground mining activities details that these activities encroach subterranean areas under both Lot 06TT309 and a road reserve parcel adjacent to Zone 2. This encroachment occurs in eight locations. These activities also were identified to exceed the boundary of Zone 2 in two other instances (Refer to images below).

Actions:

Confirm and update relevant assessment application material.



24	<p><u>Issue:</u></p> <p>The applicaion material does not include a plan which clearly demonstrates the location of the proposed activities within the areas of regional interest, or coordinates.</p> <p><u>Actions:</u></p> <p>Provide and update relevant assessment application material.</p>
25	<p><u>Issue:</u></p> <p>The application has not demonstrated how permanent impacts will be avoided in accordance with the RPI Statutory Guideline 03/14.</p> <p>In section 6.1 of the supporting document, it states that the impact of the flares will not be permanent as these impacts can be restored to the pre-activity condition. In section 6.1.1 it then states that post mining, each flare structure will be rehabilitated in accordance with the EA. This is inconsistent with the requirements of the RPI Statutory Guideline 03/14, which requires 'Restoration' (defined in RPI Statutory Guidelines 09/14) for areas contained within the SCA. There is only one Flare identified within SCA (Flare 3) shown on Figure 3 of the supporting document, and it is described as disturbing a small area of SCA (0.16 ha). As the straegic cropping land (SCL) status has not been challenged, this small area of SCA will require 'Restoration', and not rehabilitation.</p> <p><i>'For land to be restored to pre-activity condition, it will require an adequate restoration to the former or original condition of the land, including the productive capacity of the land.</i></p> <p><i>It does not simply mean 'revegetated', 'rehabilitated' or 'reclaimed' which are all commonly used terms under other state government permit and approval processes.</i></p> <p><i>Restoring the land means that the land is not only returned to its pre-activity use but that it is also returned to its pre-activity productive capacity or potential productive capacity.'</i></p> <p><i>'In the context of SCL, the productive capacity refers to the intrinsic capability of the land and soil to store and supply the water and nutrients required to sustain crops in the future.</i></p> <p><u>Actions:</u></p> <p>Should restoration be required, amend section 6.1.1 to include the 'restoration' of Flare 3 in accordance with the RPI Statutory Guidelines 03/14.</p>
26	<p><u>Issue:</u></p> <p>Underground bord and pillar mining also has the potential to cause permanent impacts on SCL, therefore, accurate management and detection measures must be implemented to ensure that there is limited subsidence and the SCL is restored to its pre-activity condition.</p> <p>While many of the measures proposed in the Subsidence management plan (manaement plan) may be adequate for rehabilitation requirements under the EA, there is a concern that some of the measures are inadequate to detect, monitor or manage permanent impacts on the SCL.</p> <p>Several issues have been identified in the information provided by the proponent relating to restoration associated with subsidence and erosion this includes:</p> <ul style="list-style-type: none"> • the accuracy of detection used to measure any changes in elevation (more accurate methods are now available)

	<ul style="list-style-type: none"> • the use of trigger levels for subsidence management to be based on inaccurate LiDAR monitoring (Table 4-1) • commitment in the management plan to rehabilitate (not restore) any SCL that has been impacted by underground mining • the lack of monitoring/management for soil erosion as a result of any surface elevation change-these may be considered an erosion event, and may warrant sediment and erosion control • limited detail to establish/confirm the pre-activity condition of the soils within the SCA. <p>The restoration should be broad enough to include the nature and risk of any predicted impacts on the SCA (e.g., any associated impacts caused by subsidence and soil erosion, if relevant), a monitoring program and restoration criteria, among other details listed in the RPI Statutory Guidelines 09/14. While much of the information submitted in the assessment application goes to addressing these requirements (e.g., the land resource survey and subsidence management plan), it is evident that there are gaps and errors within these reports that require amendment to ensure compliance with restoration standards.</p> <p><u>Actions:</u></p> <p>Should restoration be required, provide a restoration plan in accordance with the requirements of the RPI Statutory Guideline 09/14. Given that the SCL status has not been challenged, it will need to include considerations of subsidence management and address any resulting soil erosion management/monitoring (within the SCA) and include restoration criteria that will satisfy the requirements of the RPI Act Statutory Guidelines.</p>
27	<p><u>Issue:</u></p> <p>'Negligible impacts' are mentioned frequently throughout the assessment application material (including the management report).</p> <p><u>Actions:</u></p> <p>Update the assessment application material to include a definition of 'negligible impacts.'</p>
28	<p><u>Issue:</u></p> <p>The spatial information data provided for the underground component of the bord and pillars for Zone 3 appears to extend into the adjoining reserve.</p> <p><u>Actions:</u></p> <p>Clarify whether the spatial data is incorrectly displaying encroachment into the adjoining reserve.</p>
29	<p><u>Issue:</u></p> <p>Figure 5 of Appendix C Soil and Land Resource Assessment shows the location of 'BH01' twice in Zone 2, once in the SCA part of Soil Map Unit 2A, and secondarily in the non-SCA component of the unit. The soil descriptions and photographic evidence provided in the supporting document appear to suggest that BH01 is more likely in the non-SCA component of Zone 2, however no GPS coordinates have been provided</p> <p><u>Actions:</u></p> <p>Confirm the location of BH01 and confirm whether this site has been used to assess land suitability for the SCA component of Zone 2 within Soil Map Unit 2A.</p>

	<p><i>Note: Should restoration be required, further scientific evidence to confirm the pre-activity condition of the SCA component of zone 2 is likely to be required.</i></p>
30	<p><u>Issue:</u></p> <p>Section 3.7.1.1 Soil classification of Appendix C indicates that Hansen Consulting found “Endohypersodic, or Epipedal Black, Grey or Brown Vertosols which occur at the southern boundary of Zone 2 and across the centre and north of Zone 3” while the most recent Land Resource report does not indicate the presence of any Vertosols in Zone 3.</p> <p><u>Actions:</u></p> <p>Clarify the differences between the two reports, as the Hansen report describes soils that are more consistent with soils that would have a higher land suitability classification that of C2.</p> <p><i>Note: This will be an important clarification, should restoration be required.</i></p>
31	<p><u>Issue:</u></p> <p>Section 5.1 of Appendix C Soil and Land Resource Assessment indicates that the suitability framework used to assess land suitability-in Zones 2 and 3 for the Ensham extension application-was the Suitability Framework for the Inland Fitzroy and Southern Burdekin the results of which have been presented in Appendix E. From the results provided it is unclear how limitation sub-classes were calculated (e.g. the Moisture (M) limitation and wetness (W) limitations for soil map unit 1) and subsequent suitability class and Agricultural Land Class (ALC).</p> <p>The report states that the Soil Map Unit 1 (Brown Vertosol) is Class 4 for cropping, but later states that this map unit has an ALC of A2 (A2 appears to be an error, and the text indicates that it should be A1, or in some parts of the report C2). As stated above, more evidence will be required to confirm the pre-activity condition of the SCA component of Map Unit 2A (around the BH01 discussed above, mapped as C2, not A2).</p> <p><u>Actions:</u></p> <p>Review the presentation of the land suitability assessment report to clearly show the steps taken and inputs used to arrive at a final suitability and ALC.</p> <p>Clarify the inconsistency of conclusions regarding land suitability, ALC and SCL status for Soil Map Unit 1 and part of Soil Map Unit 2A in Zone 2, and for Zone 3 that fall within the SCA.</p> <p><i>Note: If restoration is required, this will be important for the SCA component.</i></p>
32	<p><u>Issue:</u></p> <p>Several recurrent issues have been identified with the detailed site descriptions provided in Appendix B of the Soil and Land Resources Assessment Report, including:</p> <ul style="list-style-type: none"> • poor site photographs where either soil, depth, site board or all three cannot be clearly seen. • majority of sites report sampling depths that cross horizon boundaries or depths not contained within that horizon. • coarse fragment abundance and lithology are not reported. • slopes shown as a range rather than a single value and slope determination method is not given. • surface characteristics (e.g. surface coarse fragments, surface condition) have not been reported. • location (GPS) information not provided.

	<p>Issues identified specific sites include:</p> <ul style="list-style-type: none"> • BH16 – Classification reported as both a Crusty Brown Dermosol and a Crusty Brown Vertosol. Site is located in Soil Map Unit 1 (Crusty Brown Vertosol). • BH03 – no reason given for ending hole at 40cm. • BH05 and BH11 – textures show wide variation. Light medium clay over sandy clay loam over medium clay. Reason for drop then increase in texture not discussed. • BH06 - no reason given for ending hole at 20cm, unlikely to be a Rudosol due to presence of B horizon. • BH07 – Reason for termination appears to be underlying rock but unlikely to be a Rudosol due to presence of B horizon. Missing description of depth between 20 and 40cm. • BH12 – Incorrectly identified as a Red Dermosol • the majority of check sites do not contain sufficient evidence to support decisions made. <p><u>Actions:</u></p> <p>As a minimum, the detailed soil descriptions should be revised to address the above concerns for the boreholes within the SCA, but preferably all sites if this report is to be re-submitted as part of the RPI Act approval process. The GPS coordinates should also be provided, as a minimum for the SCA detailed and check sites.</p> <p><i>Note: This will be required within the SCA, should restoration be required.</i></p>
33	<p><u>Issue:</u></p> <p>The application states that the Subsidence Report and the Subsidence Management Plan (managemnt plan) have been peer reviewed. Peer reviews are not include in the assessment application material.</p> <p><u>Actions:</u></p> <p>Provide a copy of the peer reviews.</p>
34	<p><u>Issue:</u></p> <p>It is recommended that subsidence monitoring be continued for five years after mining completion. This time period is similar to requirements placed on other bord and pillar underground mining operations that have required approvals under the RPI Act.</p> <p><u>Actions:</u></p> <p>Amend the management plan to include a subsidence monitoring period of five years post-mining and delete the other options.</p>
35	<p><u>Issue:</u></p> <p>The management plan includes LiDAR measured subsidence investigation trigger values with large margins of error (± 0.5 m for rigid soils, and ± 0.4 m for non-rigid soils).</p> <p><u>Actions:</u></p> <p>Provide scientifically based evidence to explain these discrepancies that are inconsistent with the movement of non-rigid and rigid soils (outside of flooding events, where soils on a floodplain are likely to move). Alternatively (preferably), remove reference to them from the supporting information of the application, and</p>

	utilise more reliable/scientifically robust trigger values for vertical subsidence, that could also consider mining induced change in current tilt of the land.
36	<p><u>Issue:</u></p> <p>The management plan proposes the continued use of annual LiDAR surveys to measure subsidence in areas not represented by RTK GPS monitoring poles. It is recommended that more accurate and easily repeatable methods of measuring subsidence be investigated for the broader area (especially where mining is occurring).</p> <p><u>Actions:</u></p> <p>Use accurate and site-wide measurements to detect changes in surface elevation due both to natural variation and subsidence (e.g. RTK Drone LiDAR).</p>
37	<p><u>Issue:</u></p> <p>The management plan specifies that a suitably qualified fish passage biologist will be responsible for investigating changes in elevation that is associated with underground mining. It is recommended that a subsidence specialist would be more qualified to investigate changes in elevation due to underground mining</p> <p><u>Actions:</u></p> <p>Clarify, correct and/or update the management plan.</p>
38	<p><u>Issue:</u></p> <p>The management plan discusses secondary workings panels at Ensham. The subsidence management plan also discusses mining under the Nogoia River.</p> <p><u>Actions:</u></p> <p>(a) Confirm where/whether the management plan has accurately predicted subsidence for any secondary workings.</p> <p>(b) Clarify in the management plan whether underground mining will encroach under the Nogoia River.</p>
39	<p><u>Issue:</u></p> <p>Land Resource Report Section 4.1.3 Kandosols. <i>“The Kandosols on site generally consisted of brown to black clayey sand to light medium clay A horizons (topsoil) with weak to strong structure, overlying a sandy clay loam to medium clay B2 horizon with weak to strong angular to sub angular blocky structure”</i>. There is also reference to Kurosols in this section.</p> <p>Land Resource Report Section 4.2.4 Soil Map Unit 3 (SMU 3). This section indicates that this map unit contains “Magnesian Brown Kandosols and the subdominant soil types included Dystrorphic Brown Kandosols”, Figure 11 shows it contains “Brown Kandosols” and sites are classified as Kandosols. However, Figure 10 indicates that SMU 3 has the soil type Magnesian-Natric Brown Kurosol</p> <p><u>Actions:</u></p> <p>(a) Clarify whether soils described and mapped in the Land Resource Report are Kandosols or Kurosols, as the descriptions are inconsistent with the Australian Soil Classification, and these soils are different.</p> <p>(b) Clarify the soil type assigned to SMU 3.</p> <p><i>Note: This issue is likely to be of more interest to the Environmental Authority component of this land resource survey. If this report is to be re-submitted as part of the RPI Act approvals, then it is recommended that every effort be made to fix obvious errors, even if they are of more relevant to a different regulatory approval.</i></p>

Issue:

There are several errors or omissions in the Land Resource Report, including:

- Section 2.3.1. states that “*Soil profiles were assessed in accordance with the Australian Soil and Land Survey Field Handbook (NCST, 2009) soil classification procedures.*” (page 18). Soil classification is guided by The Australian Soil Classification (Isbell & NCST 2021).
- horizons or horizon depths do not have distinctiveness -these are characteristics of horizon boundaries.
- the report does not specifically state the intended scale of the Soil Map Unit mapping
- gravel and larger non-soil elements within a profile are known as coarse fragments not “stones”. Stones are a category of coarse fragments with a size between 200 and 600mm. Using this term infers soils contain large coarse fragments, which may have been used to downgrade land suitability. Additionally, while this section indicates coarse fragment abundance was recorded, no evidence of abundance is provided in Appendix B
- Reference Section – no references were listed to soil texts/guides used e.g. Soil and Land Survey Field Handbook (NCST 2009), Guidelines for Surveying Soil and Land Resources (McKenzie et al. 2008), The Australian Soil Classification (Isbell and NCST 2021).

Actions:

Amend the assessment application material.