

Our ref: D23/30605



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

Mr Leo Hopsick
Authorised Holders Representative
Kestrel Coal Resources
leo.hopsick@kestrelcoal.com

7 March 2023

Dear Mr Hopsick

Further requirement notice

RPI22/008 Kestrel – LW500

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

I refer to your application received on 31 October 2022 for a regional interests development approval (RIDA) under section 29 of the RPI Act for resource activity: Mining and other resource activities associated with the Kestrel coal mine. The application seeks approval for resource activities within the strategic cropping area (SCA).

I also refer to the requirement notice given on 14 November 2022 and to the response to the requirement notice received on 16 December 2022.

You are advised that further information is required in order to assess the application against the assessment criteria contained in Schedule 2, Part 4 of the Regional Planning Interests Regulation 2014 (RPI Regulation).

Application details

Applicant	Kestrel Coal Resources Pty Ltd
Project description	Kestrel longwall mining panel (LW500)

Site Details

Real property description	Lot 11 SP178401
Site address	Lilyvale Road
Area of regional interest	SCA
Proposed SCA disturbance area	85.9 ha
Local government area	Central Highlands Regional Council

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Brisbane Qld 4000
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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 further requirement notice does not provide sufficient information to assess and decide the application.

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 who will be pleased to assist.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Phil Joyce', is centered on the page.

Phil Joyce
Director
Development Assessment Division
Planning Group

Enc Attachment A

ATTACHMENT A

Information required for assessment against SCA criteria – Schedule 2, Part 4 of the RPI Regulation

<p>1.</p>	<p><u>Issue:</u></p> <p>Prescribed solution (PS) 11(a) for required outcome (RO) 2 requires the application to demonstrate that <i>‘if the applicant is not the owner of the land and has not entered into a voluntary agreement with the owner—the applicant has taken all reasonable steps to consult and negotiate with the owner of the land about the expected impact of carrying out the activity on strategic cropping land.’</i></p> <p>Lot 23 SP220221, which is not subject to this application, and which is not owned by the applicant, has been included in the calculation of property area.</p> <p><u>Actions:</u></p> <p>(a) Clarify the ownership of Lot 23 SP220221. (b) Confirm if this lot was intended to be included in ‘property (SCL)’ calculations.</p> <p><i>Note:</i> <i>‘Property (SCL)’ is defined in Schedule 2 Part 1 s1(1) of the RPI Regulation.</i></p>
<p>2.</p>	<p><u>Issue:</u></p> <p>The application indicates the potential for a mitigation deed to be entered into post subsidence impact, if monitoring demonstrates that the strategic cropping land (SCL) is unable to be restored to pre-activity condition, thereby constituting a permanent impact.</p> <p>The RPI Act requires applications to identify whether the proposed activity will have a permanent impact on SCL, with PS13(1)(d) requiring the application to demonstrate <i>‘either—</i></p> <p>(i) <i>the activity will not have a permanent impact on the strategic cropping land in the area; or</i></p> <p>(ii) <i>the mitigation measures proposed to be carried out if the chief executive decides to grant the approval and impose an SCL mitigation condition’.</i></p> <p>Additionally, s50 of the RPI Act includes that <i>‘(1) A regional interests condition may—</i></p> <p>(a) <i>...</i></p> <p>(c) <i>for a resource activity or regulated activity to be carried out in an area that is the strategic cropping area—require the applicant to have mitigation in place before carrying out the activity on land in the area’.</i></p> <p>From the information provided and the nature of the resource activity to be undertaken on the property, it is considered that the proposed activity will have a permanent impact on SCL.</p> <p>If it is likely that the activity will result in a permanent impact, either:</p> <ul style="list-style-type: none"> • demonstrate what parts of the area can be restored to its pre-activity condition <p><i>Note: The application must:</i></p> <ul style="list-style-type: none"> ○ <i>clearly state, with evidence, the extent of the area to which restoration can be achieved to pre-impact condition</i> ○ <i>identify areas to which restoration is expected to be unachievable and result in a permanent impact, in order for a mitigation condition to be considered to offset the possible permanent impact, should the application be approved.</i>

	<p>or</p> <ul style="list-style-type: none"> • enter into a mitigation agreement. <p>s66 of the RPI Act states that <i>'The strategic cropping land mitigation fund (the mitigation fund) established under the repealed Strategic Cropping Land Act 2011 is continued in existence under this Act'</i>. If the applicant is to pursue a mitigation agreement under s143 Part 2 Division 1 (143) of the <i>Strategic Cropping Land Act 2011</i> it states <i>'[t]he source authority holder must not wilfully carry out, or allow the carrying out of, the development, unless there is in place mitigation for the identified permanently impacted land'</i>.</p> <p><u>Actions:</u></p> <p>Demonstrate:</p> <p>(a) how the proposed activity will not have a permanent impact on SCL</p> <p>(b) whether restoration will be pursued via a restoration plan, or alternatively, whether a mitigation deed will be required, along with measures to minimise impacts from soil erosion (e.g., via a soil conservation plan) and subsidence induced scouring and ponding.</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> • <i>RPI Statutory Guideline 09/14 How to determine if an activity has a permanent impact on Strategic Cropping Land (RPI Guideline 09/14) includes that pre-activity condition is 'the condition of the land's soil as identified and analysed within one year before the making of an assessment application ...'</i> • <i>If mitigation is pursued, further information may be required to ensure impacts from soil erosion and subsidence-induced scouring and ponding can be minimised. This may need to be factored in to meet the intended deadlines for construction and operation activities.</i>
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Restoration Plan: LW500 Revision: 1.1 (15.12.2022) (Restoration Plan)

3.	<p><u>Issue:</u></p> <p>PS13(1)(d) for RO3 requires that <i>'either—</i> <i>(i) the activity will not have a permanent impact on the strategic cropping land in the area; or</i> <i>(ii) the mitigation measures proposed to be carried out if the chief executive decides to grant the approval and impose an SCL mitigation condition'</i>.</p> <p>Section 3.2 of the Restoration Plan includes that <i>'Removal of surface infrastructure will be undertaken once the service life of the infrastructure has passed and the mining area is rehabilitated and returned to its former productive capacity'</i>.</p> <p>Restoration to pre-activity condition is required, not rehabilitation.</p> <p>Section 3.2 of the Restoration Plan also includes that <i>'The only permanent infrastructure that would remain at the end of mine life would be anything identified as beneficial for any future potential land uses'</i>.</p> <p>It is unclear whether built infrastructure will remain outside of the footprint (Figure 5).</p> <p><u>Actions:</u></p> <p>Clarify how the removal of surface infrastructure will be completed to ensure reinstatement of pre-activity condition (restoration), rather than to rehabilitation standards.</p> <p>(a) Clarify how beneficial permanent infrastructure will be identified and not result in a permanent impact to mapped SCL.</p>
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	(b) Clarify whether built infrastructure will remain outside of the LW500 footprint post mining.
4.	<p><u>Issue:</u></p> <p><u>Impacts of longwall mining and requirements for restoration</u></p> <p>PS13(1)(d) for RO3 requires that ‘either—</p> <p>(i) <i>the activity will not have a permanent impact on the strategic cropping land in the area; or</i></p> <p>(ii) <i>the mitigation measures proposed to be carried out if the chief executive decides to grant the approval and impose an SCL mitigation condition’.</i></p> <p>RPI Guideline 09/14 states that ‘<i>The requirement in the RPI Act for the restoration of the land to its pre-activity condition constitutes requires an extremely high standard for land repair’.</i></p> <p>For restoration, RPI Act Guideline 09/14 provides information to be included in a restoration plan:</p> <ol style="list-style-type: none"> 1) <i>information on the nature of impact on the land and methods used to determine impact</i> 2) <i>characterisation of the pre-activity (current) condition of the land and soils</i> 3) <i>evaluation of the nature and risk of any predicted impacts on the land</i> 4) <i>evidence that scientifically proven and practical methods do exist for restoring the land</i> 5) <i>detail on the application of the restoration methods including timeframes</i> 6) <i>a monitoring program including benchmarking and progress milestones</i> 7) <i>a fully costed estimate of identified restoration works</i> 8) <i>restoration criteria against which successful restoration can be demonstrated’.</i> <p>An activity or even a project may need to be substantially altered, postponed or even abandoned, if, after having identified the likely impacts and assessed the potential for full restoration, any of the following apply:</p> <ul style="list-style-type: none"> • successful restoration is not feasible, or it is questionable if it can be achieved • restoration would take an uncertain or indefinite period of time • the technology does not currently exist to allow restoration • practical and economic limitations make restoration unviable. <p>Items are missing or inadequately described in the Restoration Plan, including the pre-activity condition of the land and soils, proposed monitoring program, restoration costs and restoration criteria. There is insufficient evidence to prove that restoration is feasible; can occur within a certain time frame; the technology exists; and practical and economic limitations do not make restoration unviable. <i>Note: Restoration was proven not to be possible on the adjacent lot, included in RPI16/002.</i></p> <p>The Restoration Plan indicates subsidence mitigation practices/commitments if the impacted area is unable to meet restoration completion criteria. However, the mitigation practices and commitments provided in the application are not satisfactory for restoration purposes (for example, specific changes to slope and slope complexity across the site, soil depth in areas requiring soil re-profiling, scouring in the water courses, predicted areas of exacerbated ponding that may require drainage).</p> <p>Limited evidence has been provided which demonstrates that scientifically proven and practical methods exist for the restoration of each area of impacted land to its pre-activity condition, and there is limited specific detail of how the identified</p>

restoration methods are to be applied and the time period in which restoration will be completed.

There is insufficient evidence of soil profile information that has been used to correlate areas that may be impacted by subsidence, requiring drainage, stripping, cut/fill, or re-profiling and the respective soil depth/physicochemical limitations—a rigorous statistically valid assessment is required for restoration purposes. This is relevant to the establishment of pre-activity condition, and to the site-specific management that is required to manage and mitigate impacts during the developmental, operational and decommissioning stages of the activity.

Many of the works required for restoration do not appear to have been fully costed.

Actions:

If restoration rather than a mitigation deed is proposed:

- (a) confirm all subsidence-related predictions (including tilt) using an independent third party suitably qualified expert
- (b) provide evidence that scientifically proven and practical methods do exist to allow for the restoration of each area of impacted land to its pre-activity condition
- (c) provide a detailed slope analysis (a description and spatial representation on a series of maps) demonstrating predicted changes to slope and slope complexity. The detailed slope analysis should include prediction of pre- and post-subsidence slopes and be categorised as <1%, 1-2%, 2-3% and >3%
- (d) describe the methodology used to predict subsidence induced changes in topography (include all changes in elevation and in slope, not just changes >3%, slope complexity and areas that may be prone to ponding)
- (e) provide advice regarding all predictions of subsidence induced changes in topography. This should include slope, for all predicted changes in slope and not only those areas where post subsidence slope will be >3% (i.e., <1%, 1–2%, 2–3% and >3%_slope, changes to slope complexity and ponding)
- (f) provide further information on soil erodibility (See Issue 10 below)
- (g) provide specific detail of how the identified restoration methods are to be applied and the time in which restoration will be completed in each of the affected areas
- (h) spatially identify soils that can be restored using the strip and cut method to rectify the impact of subsidence (i.e., those that do not have physicochemical limitations) and those that cannot be restored using this method. Detail what methods will be used to restore these areas to pre-activity condition
- (i) describe if any additional/imported fill will be required for recontouring in subsided areas
- (j) spatially identify the watercourses/drainage lines on site that may be at risk of subsidence-induced scouring and ponding and identify soils that may require drainage works to alleviate increased ponding post-subsidence
- (k) provide information on how the impacts of ponding will be managed to ensure that changes in surface water and soil hydrology as a result of subsidence do not materially increase deep drainage, cause an abnormal rise in shallow water tables or produce an increased salinity risk
- (l) provide further information on methods to rectify and stabilise any subsidence-induced scouring and streambank erosion
- (m) provide details of a monitoring program that will clearly demonstrate benchmarked, time-bound restoration progress in areas of affected land, including detailed methodology on how to minimise and monitor the impacts of rainfall on suspended sediment levels in runoff

	<p>(n) provide further information about monitoring change in elevation (See "Change in elevation and slope monitoring" below)</p> <p>(o) provide reporting requirements, including details to report any failures/breaches of any soil conservation works and monitoring performance requirements</p> <p>(p) provide a fully costed estimate of identified restoration works prepared by a suitably qualified person – this is to include any land re-profiling, soil drainage measures, stabilisation of scouring, soil erosion maintenance and controls, any soil survey and laboratory analysis, decommissioning and removal of all infrastructure, specific and detailed monitoring requirements, etc.</p> <p>(q) provide a set of restoration completion criteria that will need to be met to demonstrate restoration to pre-activity condition has been achieved</p> <p>(r) provide all necessary maps and shapefiles/feature datasets in ArcGIS geodatabase format and provide copies of any LiDAR DEMs used in the analyses above.</p> <p><i>Note:</i> Some of these issues are discussed in more detail in Issues below.</p>
5.	<p><u>Issue:</u></p> <p><i>Pre-activity Condition</i></p> <p>RPI Guideline 09/14 includes that an application should demonstrate pre-activity condition of the impacted SCL, being <i>'the condition of the land's soil as identified and analysed within one year before the making of an assessment application ...'</i></p> <p>Section 5.2.1 of the Restoration Plan refers to the 2022 (Highlands Environmental) report on agricultural land evaluation, land suitability and SCL criteria, however this report is not supplied. Instead, the sections 7.2.1 and 7.2.2 state that the <i>'Report is available to the Administering Authority'</i>.</p> <p>Section 5.2.2 of the Restoration Plan has used soil information from 2002 and 2011 MWH studies, while Section 5.3 refers to studies from 1996 to 2011 before again mentioning the 2022 Highlands Environmental report.</p> <p>Most items listed in the RPI Guideline 09/14 that demonstrate pre-activity condition are missing or described in insufficient detail, for example:</p> <ul style="list-style-type: none"> • microrelief – nothing is provided in the Restoration Plan or the Subsidence Management Plan (SMP) • soil depth (including depths >1m) - Table 2 at section 5.2.2 in the Restoration Plan includes generic soil profile class type descriptions. Table 1 at section 3.4.2 of the SMP, which references the 2022 Highlands Environmental Report, lists different soil depths but only uses >100cm or </>60cm. Figure 5 of the SMP suggests (outline of LW500 not shown on figure) that the soils of LW500 section would be 'Orion' (>60cm) and 'Jimbaroo' (<60cm). No detailed bore logs have been provided • soil profile descriptions (including for each horizon or layer) – while RP section 5.2.2 of the Restoration Plan and reports are referenced in section 5.2.1, neither the reports nor detailed soil profile descriptions have been included. <p><i>Note:</i> A complete list of the issues to be included in a Restoration Plan is identified in RPI Guideline 09/14.</p> <p><i>For restoration, the use of surface observations rather than a fully exposed soil profile is not suitable. The RPI Guideline 09/14 refers to 'The higher density of assessment sites then allows 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> <p><u>Actions:</u></p> <ul style="list-style-type: none"> (a) Provide additional information, on impacted SCL, collected within one year before the making of this assessment application. <i>Guideline 09/14</i> states 'Pre-activity condition is the condition of the land's soil as identified and analysed within one year before the making of an assessment application for a resource activity or regulated activity to be carried out on the land for a resource activity or regulated activity to be carried out on the land'. (b) Each analytical site should be individually discussed along with high resolution photographs. <i>Note: See the RPI Act Statutory Guideline 08/14 How to demonstrate that land in the strategic cropping area does not meet the criteria for strategic cropping land (RPI Guideline 08/14) and the Queensland Soil and Land Resource Survey Information Guideline (Department of Resources 2021).</i> (c) Include detailed descriptions for all components described in 'Understanding the condition of land' of RPI Guideline 09/14'. (d) Provide all necessary maps and shapefiles/feature datasets in ArcGIS geodatabase of any soil map units and sites (check sites, analytical sites, detailed sites). (e) Provide evidence (soil profile data) that supports the effectiveness of the proposed restoration methodologies including stripping and cutting soil and drainage alleviation following subsidence. This evidence must show that restoration works can be undertaken while maintaining the integrity of the soil profile in all soil types.
6.	<p><u>Issue:</u></p> <p><i>Change in elevation and slope monitoring</i></p> <p>PS13(1)(d) for RO3 requires that 'either—</p> <ul style="list-style-type: none"> (i) <i>the activity will not have a permanent impact on the strategic cropping land in the area; or</i> (ii) <i>the mitigation measures proposed to be carried out if the chief executive decides to grant the approval and impose an SCL mitigation condition'.</i> <p>The Restoration Plan indicates the use of LiDAR for surface elevation monitoring purposes, however there is insufficient methodology detail provided about whether it will be aligned to permanent survey markers to ensure future LiDAR data can be aligned to baseline monitoring.</p> <p>Accurate and repeatable LiDAR surface elevation monitoring will be required over the life of operations to detect potential changes to overland sheet flow and drainage resulting from subsidence.</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> (a) Confirm if past (and future) LiDAR monitoring has been aligned to permanent survey markers of a known and recorded location e.g., the network of geodetic permanent survey markers, and referencing on a common geodetic datum e.g., GDA2020. (b) Provide details of the surface elevation monitoring strategy pre- and post-subsidence to inform soil conservation planning and restoration (e.g., a spatial analysis at the property scale to compare change in elevation and slope between proposed different years of LiDAR capture (e.g., a DEM of difference).

	<p>(c) Provide the methodology to monitor change in surface elevation, investigation triggers, and actions if breaches are detected. Include details of any other inspection frequencies.</p> <p>(d) Detail any changes in elevation due to changes in soil moisture e.g., drought or unseasonably high rainfall, differences in cropping systems, waterlogged/ponded areas</p> <p>(e) Provide maps at a suitable scale (and raster files) of baseline land surface elevation/slope (including the base LiDAR DEM used).</p> <p>(f) Provide maps showing the location of any proposed permanent monitoring points to detect any change in elevation and slope/slope complexity (e.g., using RTK LiDAR).</p>
<p>7.</p>	<p><u>Issue:</u></p> <p><i>Restoration Criteria</i></p> <p>There are no specific restoration criteria established for the application area, nor a process that details any meaningful and reliable statistical probability that can be applied to assess the success of restoration. Instead, a post subsidence soils characterisation is proposed, along with an assessment of the productive capacity of the land, to make a determination if any restoration activities and/or mitigation payments will be required.</p> <p>RPI Guideline 09/14 states that a higher density of assessment sites allows for meaningful and reliable statistical probabilities to be applied when assessing the success of restoration.</p> <p><u>Actions:</u></p> <p>Provide a set of restoration criteria that will allow meaningful and reliable statistical probabilities that will be applied when assessing the success of restoration.</p> <p><i>Note:</i> <i>Pre-activity cropping yield/pasture biomass/plant vigour may provide useful information to inform restoration criteria, along with other measures that may be proposed.</i></p>
<p>Erosion and Sediment Control Plan: LW500 Revision: 1.2 (15.12.2022) (ESCP)</p>	
<p>8.</p>	<p><u>Issue:</u></p> <p>The ESCP appears to be focused on the whole 500 longwall series, not just the LW500 area, and its scope refers to the completion of all works in accordance with the requirements of the Environmental Authority (EA). An ESCP specifically tailored to the needs of this application (LW500 are) is required.</p> <p>It is also noted that in Response 3.1 to Issue 3 (Response to DSDILGP Requirement Notice (received 14 Nov 2022) - LW500 RIDA Application) it is proposed that the Restoration Plan be used to incorporate relevant subsidence restoration requirements rather than the ESCP 'to avoid regulatory overlap'.</p> <p><u>Actions:</u></p> <p>Clarify the intent and scope of the ESCP and focus it more directly on the requirements of the proposed activities subject of this application. Alternatively, these issues need to be adequately addressed in the Restoration Plan.</p>
<p>9.</p>	<p><u>Issue:</u></p> <p><i>Erosion, sheet flow, stormwater runoff and drainage systems and soil conservation works</i></p> <p>Any increases in slope and slope complexity have the potential to increase the risk of erosion and impact on the productive capacity of SCL. Altering sheet flow, stormwater runoff and drainage systems can increase erosive soil loss, particularly</p>

	<p>if compromised waterways must re-establish their bed gradient or discharge capacity. Within the disturbance area for this application, there is one drainage line to the north of the site that currently discharges directly into a series of larger watercourses. There is no information provided that specifically deals with minimising and monitoring the impact of rainfall on suspended sediments in runoff within this watercourse and any discussion of whether this is required for the larger watercourses across the remainder of the 500 series area.</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> (a) Clarify proposed methods to minimise and monitor the impact of rainfall on suspended sediment levels in runoff, including establishment of baseline and ongoing monitoring during the developmental, operational and decommissioning stages of the activity. (b) Confirm if there are any existing soil conservation works present on the property. If any soil conservation works are present, provide the following information: <ul style="list-style-type: none"> (i) location and design of suitable and effective soil conservation measures and soil conservation works (ii) how the integrity and functional efficiency of all soil conservation measures and soil conservation works will be effectively monitored and their performance assessed. (c) Where they are found not to provide the necessary level of control, detail how any required changes to those measures or works will be implemented. (d) Confirm whether any new soil conservation works will be required to manage erosion, post subsidence.
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Attachment 5 – Kestrel RIDA Application Item 6 Response: Soil erodibility and soil loss rates, dated 20 November 2022 (Item 6 Response)

10.	<p><u>Issue:</u></p> <p><i>Erosion modelling</i></p> <p>Erosion has been modelled using the RUSLE soil loss equation and unusually low rates of erosion has been predicted. The input datasets used in the RUSLE modelling for the L and S factors were Qld Government datasets downloaded from QSPATIAL and were derived from the smoothed 3 second (~90 m) shuttle Radar Topography Mission (SRTM) DEM. Data at such a broad scale is not appropriate to use for erosion modelling in an application for a RIDA.</p> <p>It would be more accurate and reliable to calculate L and S factors based on available site-specific LiDAR DEM information. This would provide a more accurate baseline, and allow more accurate monitoring against the baseline, once underground mining begins, and predicted subsidence occurs.</p> <p>Post subsidence L and S factors input datasets appear to have been based on the same input dataset. This is not considered appropriate for a post-subsidence scenario due to changes in slope, slope length and slope complexity.</p> <p>No soil erosion rates for cropping scenarios are considered.</p> <p>There is no documentation provided for calculations of soil erodibility (K Factor).</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> (a) Provide further information on proposed methods to monitor the impact of soil erosion within the property. (b) Update the RUSLE modelling using more appropriately scaled input datasets for L and S factors. (c) Provide justification for why modelling of soil erosion rates using cropping values was discussed but not included. in Attachment 5.
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	<p>(d) Re-run post subsidence RUSLE modelling (using predicted, post subsidence, changes to slope and slope complexity) for each soil map unit.</p> <p>(e) Describe the land management practices that will be implemented prior, during and after subsidence has occurred to limit the land's exposure to erosive forces.</p> <p>(f) Provide supporting information on calculations of soil erodibility (K Factor).</p>
SMP	
11.	<p><u>Issue:</u></p> <p>Much of the detail that would be required to confirm possible restoration of subsidence induced erosion and ponding is missing from the SMP. An SMP should contain detailed discussion and guidelines for implementation of appropriate, reliable and repeatable subsidence monitoring and subsequent management.</p> <p>It is noted that in Response 3.2 to Issue 3 (Response to DSDILGP Requirement Notice (received 14 Nov 2022) - LW500 RIDA Application) it is proposed that the Restoration Plan be used to incorporate relevant subsidence restoration requirements rather than the SMP 'to avoid regulatory overlap'.</p> <p><u>Actions:</u></p> <p>Should restoration be pursued, the SMP will need to be improved to guide the higher standard of land repair as set out in RPI Guideline 09/14 and will need to address all subsidence related issues described below. Alternatively, these issues will need to be adequately addressed in the Restoration Plan.</p> <p><i>Note:</i> <i>Comments are focused on issues relevant to this application only. Some of the issues have also been raised in the discussion of the Restoration Plan.</i></p>
12.	<p><u>Issue:</u></p> <p>Section 2 refers to mining lease (ML) 704851 and ML70481.</p> <p><u>Actions:</u></p> <p>Confirm if ML704851 was intended to be ML70451 in section 2 of the SMP.</p>
13.	<p><u>Issue:</u></p> <p>The SMP discusses LW500 land suitability and soils, but reports detailing these have not been provided with the application.</p> <p><u>Actions:</u></p> <p>Provide all relevant supporting information.</p>
14.	<p><u>Issue:</u></p> <p>The SMP discusses different predictions of subsidence and tilt to other parts of the application.</p> <p><u>Actions:</u></p> <p>Ensure subsidence and tilt figures are accurate and consistently described in all supporting material.</p>
15.	<p><u>Issue:</u></p> <p>Section 4.1 of the SMP states '<i>The slopes and troughs formed as a result of subsidence are subtle and not easily distinguishable from the surrounding topography, as the range of movement associated with subsidence is well within the range of natural elevation variation. In other words, the topography of subsidence</i></p>

	<p><i>areas is not inconsistent with the surrounding un-subsided topography (i.e., gently rolling country with low relief)</i>'.</p> <p>While subsidence is generally more obvious in flatter landscapes, in gently undulating landscapes such as the property, trough development may still change surface hydrology, with the troughs potentially disrupting established stormwater flows of that occur by way of either natural drainage systems, or man-made ones (e.g., soil conservation works). Trough development, and any increase in slope, may also increase the risk of soil erosion and interfere with routine farming practices due to a checkerboard landscape post subsidence.</p> <p>The SMP, while downplaying the significance of subsidence (Section 4.1), acknowledges subsidence-induced erosion impacts and ponding and scouring of watercourses.</p> <p><u>Actions:</u></p> <p>Amend Section 4.1 of the SMP to more accurately reflect the impacts of longwall panel subsidence on topography, surface erosion, surface hydrology, ponding and scouring of watercourses.</p>
16.	<p><u>Issue:</u></p> <p>Section 4.1.2 of the SMP refers to the undertaking of regular stream condition surveys across the whole of the Kestrel ML using an 'Index of Diversion Condition method since 2003'. However, there is no detail provided on this form of monitoring, or its applicability to watercourse scouring.</p> <p>The watercourse that is relevant to this application in the north-east of the application area, is mapped as SCL. The SMP incorrectly identifies this area as not being SCL.</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> (a) Provide further information on the 'Index of Diversion Condition Method' and its applicability to measuring stream condition. (b) Amend the wording in the SMP to acknowledge the watercourse that is mapped as SCL in the north-east of the application area.
17.	<p><u>Issue:</u></p> <p>Section 4.1.2 of the SMP discusses predictions of subsidence changes on the existing topography, however there is no detail regarding the methodology used to predict subsidence induced changes in topography (for changes in slope, slope complexity and ponding), and this information has not been provided elsewhere in the application.</p> <p>The SMP acknowledges that '<i>In some cases, ponding may constitute a permanent impact on SCL</i>'.</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> (a) Describe the methodology used to predict subsidence changes in topography for changes in slope (for all changes in slope, not just changes >3%, slope complexity and areas that may be prone to ponding). (b) Describe all predictions of subsidence on changes in topography (slope for all predicted changes in slope and not only those areas where post subsidence slope will be >3% (i.e., <1%, 1–2%, 2–3% and >3% slope, changes to slope complexity and ponding). (c) Ponding in areas of SCL where there was none previously would likely constitute permanent impact and must be mitigated.
18.	<p><u>Issue:</u></p>

	<p>Figures 6 and 7 in the SMP have spatially depicted areas of SCL with post-subsidence predicted slopes of >3%. This has not accounted for all increases in slope (i.e., <1%, 1–2%, 2–3% and >3% which will increase the risk of erosion and alter conditions compared to pre-activity condition).</p> <p>Figures 6 and 7 display '<i>predicted 20mm subsidence extent</i>'. However, the application has stated that there will be maximum vertical subsidence between 1.6–2.3m mid-panel to 0.1–0.3m over longwall inter-panel pillars.</p> <p><u>Actions:</u></p> <p>(a) Provide maps displaying pre-subsidence topography (all slope i.e., <1, 1–2%, 2–3% and >3%) and slope complexity) and predicted subsidence changes to topography (all changes to slope (<1%, 1–2%, 2–3% and > 3% and slope complexity) derived from LiDAR DEM.</p> <p>(b) Provide these maps in ArcMap geodatabase, and include the LiDAR DEM used.</p> <p>(c) Clarify the inconsistencies between discussions on maximum vertical disturbance and '<i>predicted 20 mm subsidence extent</i> in Figures 6 and 7.</p>
19.	<p><u>Issue:</u></p> <p>Section 5.1 of the SMP states '<i>Pre-and post-subsidence survey monitoring via Light detection and ranging (LiDAR) or other methods) will continue to be undertaken to assess and validate subsidence predictions</i>'. Other methods that might be used to determine subsidence have not been specified.</p> <p><u>Actions:</u></p> <p>Clarify what methods may also be used in addition to LiDAR to monitor pre-and post-activity subsidence</p>
20.	<p><u>Issue:</u></p> <p>Restoration requires the land to be restored to its pre-activity condition, not '<i>pre-mining agricultural capability as required by the relevant conditions of the RIDA and Environmental Authority</i>' as stated in Section 5.2 of the SMP.</p> <p>RPI Guideline 09/14 states '<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. It does not simply mean 'revegetated', 'rehabilitated' or 'reclaimed' which are all commonly used terms under other state government permit and approval processes ... The requirement in the RPI Act for the restoration of the land to its pre-activity condition constitutes an extremely high standard for land repair</i>'.</p> <p>There is insufficient detail provided on how this extremely high standard for land repair (restoration) will be undertaken. The methodology proposed is more consistent with rehabilitation, a lower form of land repair, than restoration.</p> <p><u>Actions:</u></p> <p>Provide further information on how subsidence-induced erosion impacts will be restored, ensuring consistency with any Restoration Plan.</p> <p><i>Note:</i> <i>The RPI Act requires a higher standard of land repair, not a return to pre-mining agricultural capability that may be required under the EA.</i></p>