

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project referred to in Schedule 1, subject to the conditions in Schedules 2, 3 and 4.

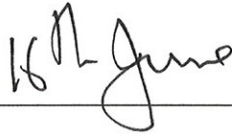
These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the on-going environmental management of the project.



Frank Sartor MP
Minister for Planning

Sydney



2008

SCHEDULE 1

| | |
|-----------------------------|---|
| Project Application: | 06_0213 |
| Proponent: | Integra Coal Operations Pty Ltd |
| Approval Authority: | Minister for Planning |
| Land: | See Appendix 1 |
| Project: | Glennies Creek Underground Coal Project |

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DEFINITIONS

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|-----------------------------|--|
| AEMR | Annual Environmental Management Report |
| AHIMS | Aboriginal Heritage Information Management System |
| Bettys Creek Diversion | Works approved by DWE on 11 May 2005 (Licence No. 20SL61386) (as amended) |
| Bore | Any bore or well or excavation or other work connected or proposed to be connected with sources of sub-surface water, and used or proposed to be used or capable of being used to obtain supplies of such water whether the water flows naturally at all times or has to be raised whether wholly or at times by pumping or other artificial means |
| Council | Singleton Council |
| DECC | Department of Environment Climate Change |
| Department | Department of Planning |
| Director-General | Director-General of the Department of Planning, or delegate |
| DPI | Department of Primary Industries |
| DWE | Department of Water and Energy |
| EA | The report titled Glennies Creek Colliery Longwalls 10 to 17 Part 3A Environmental Assessment for Integra Coal Operations Pty Limited dated 19 September 2007 (Ref. 0047481), and the response to submissions, prepared by Environmental Resources Management Australia Pty Ltd |
| EP&A Act | <i>Environmental Planning and Assessment Act 1979</i> |
| EP&A Regulation | <i>Environmental Planning and Assessment Regulation 2000</i> |
| Integra Underground Complex | All mining operations carried out within Mining Leases CL 382, ML 1437, ML 1525, ML 1518, ML 1551 and sub-lease MPL 343 or any subsequent additions or extensions to these Mining Leases |
| Land | Land means the whole of a lot in a current plan registered at the Land Titles Office at the date of this approval |
| Minister | Minister for Planning, or delegate |
| Privately-owned land | Land that is not owned by a public agency, or a mining company or its subsidiary |
| Project Area | The area outlined in a solid red line in the figures in Appendix 2 |
| Proponent | Integra Coal Operations Pty Ltd, or its successors in title |
| ROM | Run-of-Mine |
| Site | Land to which the project application applies. |
| Study Area | The yellow shaded area in Figure 1.2 in Appendix 3 |
| Subsidence | Subsidence of the land surface by more than 20mm/m caused by underground coal mining |
| Surface Disturbance | Earthworks associated with the installation of gas drainage boreholes and subsidence remediation works |

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
 - (a) EA;
 - (b) statement of commitments; and
 - (c) conditions of this approval.

Note:

- *The Glennies Creek Underground Coal Project, including the existing workings and extension area, is shown on the plans in Appendix 2.*
- *The statement of commitments is reproduced within Appendix 4.*

3. The Proponent shall carry out the project in accordance with the conditions of approval for Glennies Creek Coal Mine – Surface Facilities Project (MP 06_0057) as may be modified from time to time, and as may reasonably be applied to the project the subject of this approval.
4. All conditions of approval for MP 06_0057 apply to the project by way of extended application unless the contrary is clear. This should not be understood as a new requirement for the conditions of DA MP 06_0057 to be fulfilled afresh, only that those conditions are extended in their effect to the project the subject of approval. If there is any uncertainty about the effect or application of condition/s contained in MP 06_0057 to the project, the matter shall be referred to the Director-General who will determine the effect or application of the conditions to the project. For the avoidance of doubt, the criteria and requirements contained in the conditions to MP 06_0057 apply to the combined operations of the Glennies Creek Coal Mine – Surface Facilities Project and the project, unless otherwise noted.
5. If there is any inconsistency between Conditions 2 and 3, the conditions of this approval shall prevail to the extent of the inconsistency.
6. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.

Limits on Approval

7. Mining operations may take place for a period of 15 years from the date of this approval.
8. The Proponent shall not extract more than 4.5 million tonnes of ROM coal a year from the Integra Underground Complex.

Staged Submission of Management Plans/Monitoring Programs

9. With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.
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SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

SUBSIDENCE

Subsidence Management Plan

1. The Proponent shall prepare and implement a Subsidence Management Plan (SMP) for the project to the satisfaction of the Director-General of DPI. This plan must:
 - (a) be prepared in accordance with the latest version (or subsequent replacement) of the:
 - *New Approval Process for Management of Coal Mining Subsidence - Policy*; and
 - *Guideline for Applications for Subsidence Management Approvals*;
 - (b) be approved prior to the carrying out any underground mining that could cause subsidence;
 - (c) include a detailed program to monitor:
 - surface subsidence above the longwall panels, including all near and far field components of subsidence;
 - the impact of surface subsidence on surface features, including flora and fauna, threatened species, and any surface water quality and/or flows; and
 - the effectiveness of any subsidence mitigation measures; and
 - (d) a program to validate the subsidence prediction methodology for the project, and calibrate it to sit specific conditions.

Note: The project will generally be regulated under the approval process for managing the impacts of coal mining subsidence under the Mining Act 1992.

Bettys Creek Diversion

2. The Proponent shall:
 - (a) get a suitably qualified and independent expert, whose appointment has been approved by the Director-General, to carry out a detailed survey of the Bettys Creek Diversion:
 - prior to carrying out any mining that could subside the diversion to establish the geotechnical and geomorphic baseline condition of the diversion; and
 - within 6 months of completing the mining that could subside the creek diversion to accurately establish the geotechnical and geomorphic condition of the creek diversion following this mining; and
 - (b) if necessary, rehabilitate the creek diversion to the same condition it was in prior to any underground mining to the satisfaction of the Director-General.

End-of-Panel Report

3. Within 9 months of completing each longwall panel, the Proponent shall commission a suitably qualified and independent person(s) whose appointment is approved by the Director-General to:
 - (a) prepare an end-of-panel report which:
 - analyses the subsidence, surface water and groundwater impacts of the panel, and the cumulative impacts of this panel combined with any other longwall panels; and
 - recommends changes to the monitoring programs and/or mine plan for subsequent panels; and
 - (b) submit a copy of the end-of-panel report to the Department, DPI and any other relevant agencies.

SURFACE AND GROUND WATER

Site Water Management Plan

4. The Proponent shall prepare and implement a Water Management Plan to the satisfaction of the Director-General. This Plan must:
 - (a) be prepared in consultation with DWE by a suitably qualified expert whose appointment has been approved by the Director-General;
 - (b) be submitted prior to carrying out any underground mining operations that could cause subsidence within the project area; and
 - (c) include:
 - an erosion and sediment control plan for all surface works in the project area that is consistent with the requirements of the *Managing Urban Stormwater: Soils and Construction Manual* (Landcom 2004, or its latest version);
 - a surface water monitoring programme with:
 - detailed baseline data of surface water flows and quality in the watercourses that could be affected by the underground mining of the project;

- surface water impact assessment criteria, including trigger levels for investigating potentially adverse surface water impacts of the project;
- a program to monitor surface water flows and quality in the watercourse that could be affected by the underground mining of the project.
- a groundwater monitoring programme with:
 - detailed baseline data of groundwater levels, yield and quality in the region, and privately owned groundwater bores, which could be affected by the underground mining of the project;
 - groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts of the project; and
 - a program to monitor:
 - groundwater inflows to the underground mining operations; and
 - the impacts of the project on the regions aquifers, any groundwater bores, and surrounding watercourses;
- a program to validate the groundwater model for the project, and calibrate it to site specific conditions;
- a surface and groundwater response plan which describes the measures and/or procedures that would be implemented to:
 - respond to any exceedances of the surface water and groundwater assessment criteria;
 - compensate landowners of privately-owned land whose water supply is adversely affected by the project; and
 - mitigate and/or offset any adverse impacts on groundwater dependent ecosystems or riparian vegetation.

Offsets

5. The Proponent shall:
 - (a) offset the loss of any base flow to the surrounding watercourse and/or associated creeks caused by the project; and
 - (b) provide suitable compensation or compensatory measures to the owners of any privately owned land whose water supply is adversely affected by the project, to the satisfaction of the Director-General.

ABORIGINAL CULTURAL HERITAGE

Additional Field Surveys

6. Prior to carrying out any surface disturbance, the Proponent shall carry out additional targeted Aboriginal cultural heritage field surveys of the study area, in consultation with DECC, and to the satisfaction of the Director-General. These surveys must be carried out in accordance with the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC) (July 2005), and on the areas that would be subject to surface disturbance.

Aboriginal Cultural Heritage Management Plan

7. The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Director-General. The Plan must:
 - (a) be prepared in consultation with DECC and the Aboriginal community;
 - (b) be submitted to the Director-General for approval prior to carrying out any underground mining operations within the project area that could potentially lead to subsidence of the land surface; and
 - (c) include a:
 - program for the recording, salvage and surface collection of Aboriginal objects/sites within the project area;
 - program for the conservation of the other Aboriginal objects/sites within the project area, including measures to secure, analyse and record the objects/sites;
 - description of the measures that would be implemented if any Aboriginal skeletal remains are discovered during the project; and
 - protocol for the ongoing consultation and involvement of the Aboriginal community in the conservation and management of the Aboriginal heritage of the objects/sites.

GREENHOUSE GAS

8. The Proponent shall implement all reasonable and feasible measures to minimise:
 - (a) energy use on site; and
 - (b) minimise greenhouse gas emissions from the underground mining operations within the project area,
 to the satisfaction of the Director-General.

9. Within 6 months of this approval, the Proponent shall submit a Greenhouse Gas Minimisation Plan to the Director-General. This plan must:
- (a) identify options for minimising greenhouse gas emissions from underground mining operations, with a particular focus on capturing and/or using these emissions;
 - (b) investigate the feasibility of implementing each option;
 - (c) propose the measures that would be implemented in the short to medium term on site; and
 - (d) include a program to monitor and report on the effectiveness of these measures.

REHABILITATION

10. The Proponent shall:
- (a) rehabilitate all areas of surface disturbance; and
 - (b) ensure that this rehabilitation is integrated as closely as possible with the rehabilitation of the other areas of surface disturbance associated within the Integra Underground Complex, to the satisfaction of DPI.
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SCHEDULE 4 ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT

1. The Proponent shall integrate the environmental management and monitoring of this project with the environmental management and monitoring of all other mining operations within the Integra Underground Complex.
2. Within 1 year of this approval, the Proponent shall prepare an Environmental Management Strategy for the Integra Underground Complex to the satisfaction of the Director-General. This strategy and program must:
 - (a) be prepared in consultation with DECC, DWE and DPI;
 - (b) provide for the strategic context for the environmental management of the complex as a whole;
 - (c) identify the statutory requirements that apply to the complex;
 - (d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the complex as a whole;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the project;
 - respond to any non-compliance;
 - manage cumulative impacts;
 - respond to emergencies; and
 - (e) include an environmental monitoring programme for the complex as a whole that includes all the monitoring requirements of this approval; and
 - (f) describe how the various incident and approval reporting requirements of the complex would be integrated into a single reporting system; and
 - (g) describe the role, responsibility, authority and accountability of all the key personnel involved in the environmental management of the complex.

REPORTING

Incident Reporting

3. Within 24 hours of detecting an exceedance of the approved limits/performance criteria at the Integra Underground Complex or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedance/incident.
4. Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that:
 - (a) describes the date, time, and nature of the exceedance/incident;
 - (b) identifies the cause (or likely cause) of the exceedance/incident;
 - (c) describes what action has been taken to date; and
 - (d) describes the proposed measures to address the exceedance/incident.

Annual Reporting

5. Within 12 months of this approval, and annually thereafter, the Proponent shall submit an AEMR for the Integra Underground Complex to the Director-General and relevant agencies. This report must:
 - (a) identify the standards and performance measures that apply to the Integra Underground Complex;
 - (b) describe the works carried out in the last 12 months;
 - (c) describe the works that will be carried out in the next 12 months;
 - (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
 - (e) include a summary of the monitoring results for the Integra Underground Complex during the past year;
 - (f) include an analysis of these monitoring results against the relevant:
 - impact assessment criteria/limits;
 - monitoring results from previous years; and
 - predictions in the EA;
 - (g) identify any trends in the monitoring results over the life of the Integra Underground Complex;
 - (h) identify any non-compliance during the previous year; and
 - (i) describe what actions were, or are being, taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

6. By the end of 2009, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Integra Underground Complex. This audit must:
- (a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Director-General;
 - (b) include consultation with the relevant agencies;
 - (c) assess the environmental performance of the project and associated surface facilities and whether it is complying with the relevant requirements in this approval and any relevant mining lease and environment protection licence (including any strategy, plan or program under these approvals); and
 - (d) review the adequacy of strategies, plans and/or programs required under these approvals; and, if necessary,
 - (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals, including changes to the mine plan.

Notes:

- *The timing of the audits required in the Glennies Creek Coal Mine – Surface Facilities Project (MP 06_0057) approval will need to be adjusted to coincide with the requirements of this approval.*
- *This audit team should be led by a suitably qualified auditor, and include experts in the field of subsidence, surface water and groundwater.*

7. Within 6 weeks of completing this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General with a response to any recommendations contained in the audit report.
8. Within 3 months of submitting the audit report to the Director-General, the Proponent shall review and if necessary revise the strategies/plans/programs required under this approval, to the satisfaction of the Director-General.

COMMUNITY CONSULTATIVE COMMITTEE

9. The Proponent shall operate a Community Consultative Committee (CCC) for the Integra Underground Complex to the satisfaction of the Director-General in general accordance with the *Guideline for Establishing and Operating Community Consultative Committees for Mining Projects*.

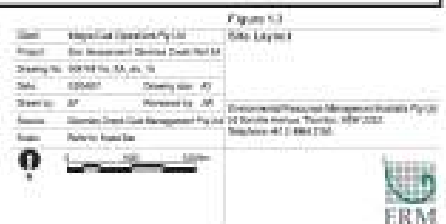
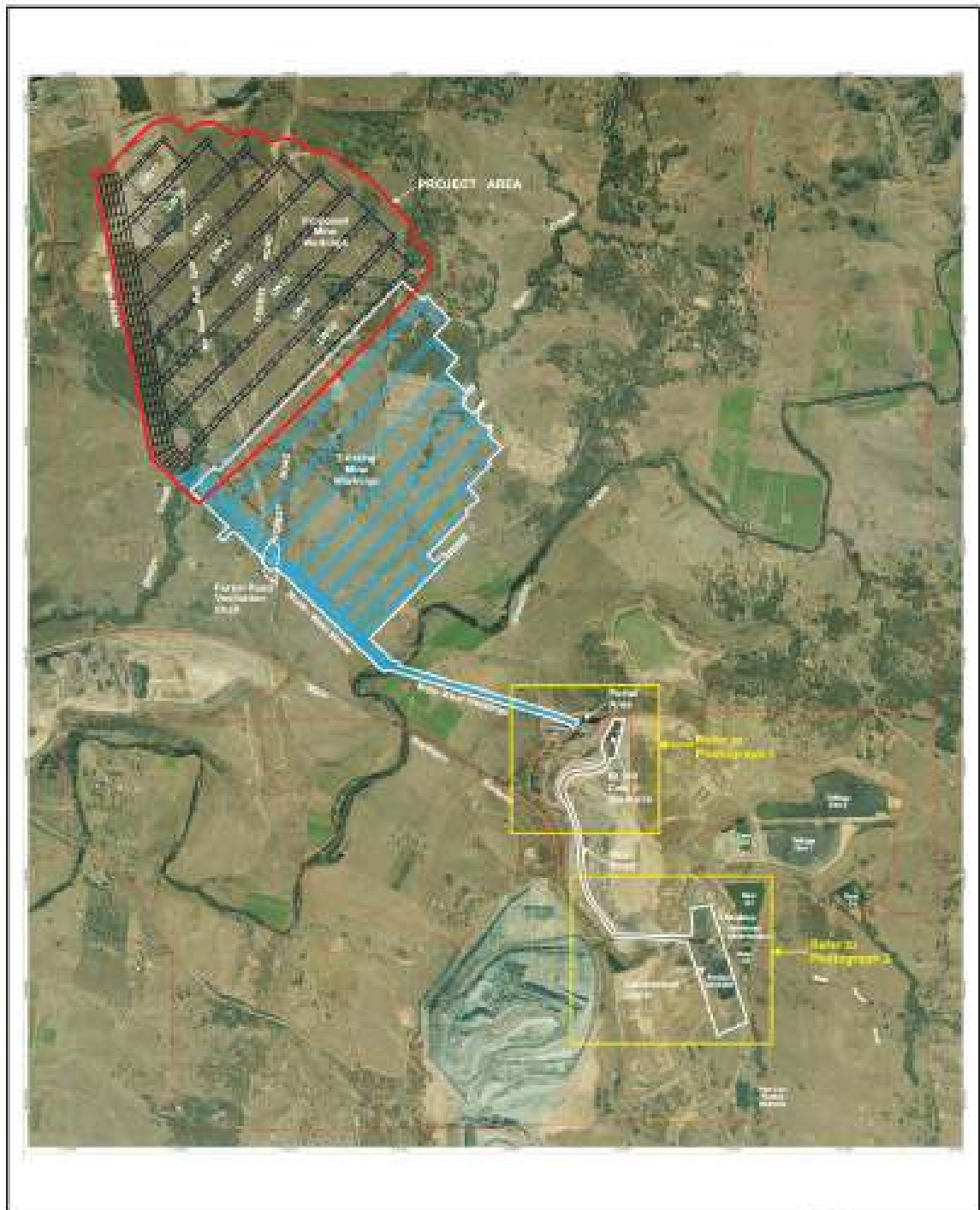
ACCESS TO INFORMATION

10. Within 3 months of the approval of any strategy/plan/program required under this approval (or any subsequent revision of these strategies/plans/programs), or the completion of the audits or AEMR, required under this approval, the Proponent shall:
- (a) provide a copy of the relevant document/s to the relevant agencies and CCC;
 - (b) place a copy of the document/s on its website.
11. During the project, the Proponent shall:
- (a) make a summary of monitoring results required under this approval publicly available on its website; and
 - (b) update these results on a regular basis (at least every 3 months).
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**APPENDIX 1
SCHEDULE OF LAND**

| Landowner | | Property Description |
|---------------------------------------|---------|-----------------------------|
| Savage Minerals Ltd & Enex Foydel Ltd | Lot 8 | DP 6830 |
| XStrata Mount Owen | Lot 10 | DP 6830 |
| Enex Ravensworth Pty Ltd | Lot 11 | DP 6830 |
| WE & AM Gardner | Lot 13 | DP 6830 |
| XStrata Mount Owen | Lot 17 | DP 6830 |
| XStrata Mount Owen | Lot 923 | DP 844 642 |
| Savage Minerals Ltd & Enex Foydel Ltd | Lot 71 | DP 625 171 |
| Enex Ravensworth Pty Ltd | Lot 2 | DP 859 544 |
| Enex Ravensworth Pty Ltd | Lot 3 | DP 859 544 |
| XStrata Mount Owen | Lot 5 | DP 859 544 |
| XStrata Mount Owen | Lot 6 | DP 859 544 |
| XStrata Mount Owen | Lot 7 | DP 859 544 |
| XStrata Mount Owen | Lot 8 | DP 859 544 |
| Glendell Tenements Pty Ltd | Lot 1 | DP 865 784 |
| Savage Minerals Ltd & Enex Foydel Ltd | Lot Pt1 | DP 940 619 |

APPENDIX 2 PROJECT LAYOUT PLANS



APPENDIX 3 STUDY AREA PLAN

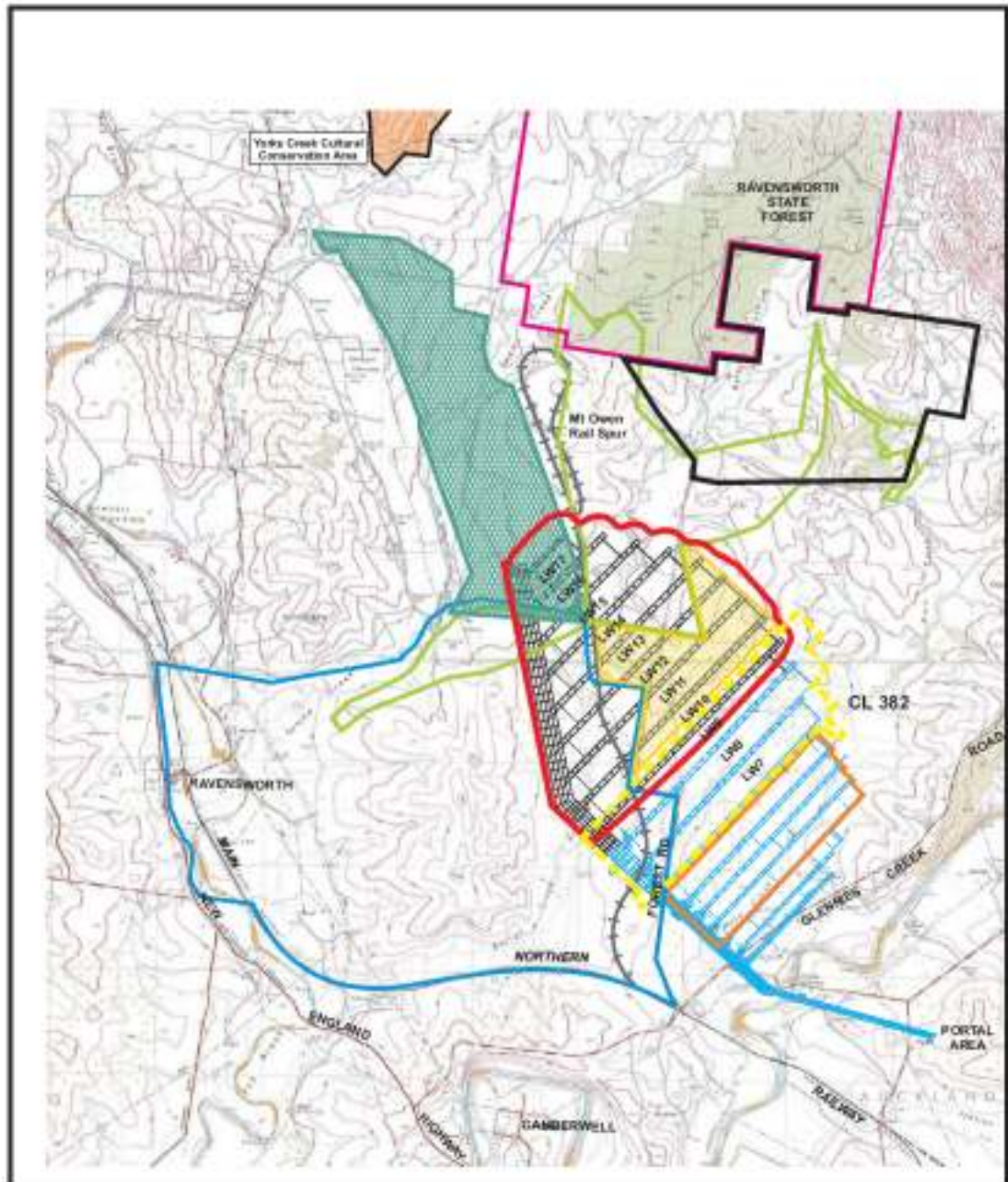
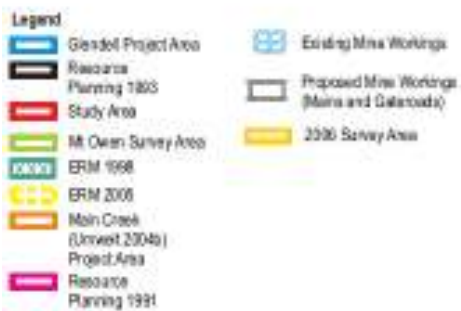


Figure 1.2



| | |
|--------------|-------------------------------------|
| Client: | Integrat Coal Operations Pty Ltd |
| Project: | Env Assessment Gladol Creek Part 3A |
| Drawing No: | 004748 Inv_Arch_rev_03 |
| Date: | 18/04/07 |
| Drawn by: | JD |
| Reviewed by: | JW |
| Source: | LPI125-000 Type Camberwell Sheet |
| Scale: | Refer to Scale Bar |



Location of Archaeology Survey Area

Environmental Resources Management Australia Pty Ltd
52 Birnie Avenue, Thornbury, NSW 2122
Telephone +61 2 4964 2156



APPENDIX 4 STATEMENT OF COMMITMENTS

| Desired Outcome | Existing or Proposed Actions | Timing |
|---|---|---|
| Environmental Management | | |
| Obtain and/or comply with all conditional requirements in all approvals, licences and leases. | Comply with all statement of commitments | Ongoing |
| | Comply with all conditional requirements included in the: <ul style="list-style-type: none">• Planning Approval;• Environment Protection Licence;• Mining Leases;• SMP or s138 Approvals; and• any other approvals. | Ongoing |
| Conduct all operations in accordance with all relevant documentation. | Undertake all activities in accordance with any current Mining Operations Plan, environmental procedures, safety management plan or site-specific documentation. | Ongoing |
| Operating Hours | | |
| All construction activities to be undertaken within the approved operating hours. | Vegetation clearing/soil removal - 7:00am to 6:00pm/7 days | As required |
| | Construction activities - 7:00am to 10:00pm/7days | |
| | Construction materials delivery - 7:00am to 10:00pm/7 days | |
| | Gas drainage borehole construction – 7.00am to 10.00pm Monday to Saturday and 8.00am to 10.00pm on Sundays. | |
| All operational activities to be undertaken within the approved operating hours. | Coal conveying and stockpiling - 24 hours/7 days | Ongoing |
| | Use of surface amenities/workshops and offices - 24 hour/7 days | |
| Stakeholder Consultation | | |
| Undertake ongoing stakeholder consultation during the mining of Longwalls 10 to 17. | Monthly notification to key stakeholders of mining progress (formal and informal). | Monthly during operation |
| | Regular meetings with stakeholders. | To be determined by the progress of subsidence and actual and predicted impacts |
| | Free call environment hotline. | Ongoing |
| | Community Complaints Register maintained. | Ongoing |
| Subsidence | | |
| Ensure minimal subsidence impacts over the Project Area. | Existing and proposed monitoring lines will be resurveyed at the completion of each longwall, particularly Monitoring Lines B, G, H and far field effects. | Within three months of the completion of each longwall |
| | A summary of subsidence monitoring results and accompanying analyses will be reported to the Principal Subsidence Engineer. | Within four months of the completion of each longwall panel |
| | Monitoring results and analyses will also be included within the mine's Annual Environmental Management Report (AEMR). | Annual |

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| Ensure minimal subsidence impacts on natural features. | Monitoring of subsidence impacts on Bettys Creek and surface drainage in accordance with the Longwalls 10 to 17 Subsidence Management Plans. | Ongoing |
| Ensure minimal subsidence impacts on public utilities. | Monitoring of subsidence impacts on Forest Road, electricity transmission lines and Telstra cable in accordance with the Longwalls 10 to 17 Forest Road, electricity transmission lines and Telstra cable Subsidence Management Plans. | Ongoing |
| | ICO will restore any Crown road damaged by mine subsidence or associated activities to their pre-subsidence condition where these roads will not be subject to further disturbance by Xstrata. | As required |
| Ensure minimal subsidence impacts on farm infrastructure. | Monitoring of subsidence impacts on farm fences, gates and dams in accordance with the relevant Longwalls 10 to 17 farm fence and farm dam Subsidence Management Plans. | Ongoing |
| Ensure minimal subsidence impacts on archaeology. | Monitoring of subsidence impacts on recorded archaeological sites in accordance with the Longwalls 10 to 17 Cultural Heritage Subsidence Management Plan. | Ongoing |
| Ensure minimal subsidence impacts on other mine infrastructure. | Monitoring of subsidence impacts and/or provision of relevant data on the Xstrata owned infrastructure overlying the Project Area. | Ongoing |
| Proper approval of improvements | ICO will liaise with the Mine Subsidence Board and gain the Board's approval for the erection of improvements on the land to be subsided. | As required |
| Ecology | | |
| Minimise impact to native flora and fauna. | Minimise area of vegetation disturbance during the installation of the gas drainage boreholes. | Activity period |
| | Pre-clearance inspections of locations for the boreholes during the summer flowering period of <i>Bothriochloa biloba</i> to avoid impacting directly on any individual plants. | Prior to installation of boreholes |
| Cultural Heritage | | |
| Minimise impact to recorded Aboriginal heritage sites. | All recorded sites will be identified on the plan used to define borehole locations, will be clearly identified in the field and protected from the impacts of any gas drainage borehole drilling or subsidence remediation works that may occur. Should these impacts be unavoidable, consultation will be undertaken with the Department of Environment and Conservation and the local Aboriginal community. | Ongoing |
| | Should gas drainage borehole drilling or subsidence remediation work be necessary within 30m of Bettys Creek, the Aboriginal community will be consulted regarding any proposed works and may wish to take the opportunity to salvage any artefacts. | As required |

| Hydrology | | |
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| Monitor changes in Bettys Creek due to weather variations, XMO/Xstrata operations and subsidence. | A monitoring and response plan will be prepared for Bettys Creek to ensure stability is maintained in the watercourse through mine life and for a defined timeframe of the post-mine life period. | Prior to mining Longwall 10 |
| | Cross-sections across Bettys Creek will be established approximately 200m apart to allow the measurement of any valley closure. | |
| | Long surveys will be conducted (including both generalised bed slope gradients and localised changes in bed slope) along Bettys and Main Creeks from the nearest stable bed control point upstream of the cumulative subsidence envelope, to an identified control point defining the closest downstream stable bed control, for both pre- and post- diversion situations. | |
| | Long survey (including the above information requirements) from the identified downstream control point to defined end of system controls. | |
| | Identification of all existing structures which lie within the inundation zone identified for Bettys Creek, with inundation depths across each structure, as revised from the surface hydrology modelling for the SCT subsidence assessment report (Statement of Environmental Effects Appendix B). | |
| | Comparison with previously established floodplain cross sections on at least three chainages across the Bettys Creek floodplain, which are currently, or will be, affected by mining subsidence, to establish the change in floodplain inundation and drainage characteristics resulting from the diversion. | |
| | Volumes and velocities of discharge along Bettys Creek downstream of the offtake and inlet points for both pre- and post- diversion conditions of the creek systems, with assessment of bed sediment basement composition and potential activation depths for a range of flows once the diversion is installed. | |
| | Energy relationships along the current and post-subsidence profile of Bettys Creek, including stress relationships under a range of flow conditions, and explanation of, and justification for, variables used (Mannings or Chezy coefficient, Froude and/or Shields parameters), and afflux of structures which are placed on line within the system , and justification for, variables used (Mannings or Chezy coefficient, Froude and/or Shields parameters), and afflux of structures which are placed on line within the system. | |

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| | A detailed monitoring program will assess whether rapid changes in channel or floodplain form occur due to subsidence that may require remediation following storm events. | Ongoing |
| | Water level loggers will be installed and sediment deposition monitoring will be conducted in Bettys Creek at the Mt Owen Rail Spur bridge and downstream of Longwall Panel 10, outside the 20mm subsidence area, to monitor changes in the creek due to weather variations, XMO/Xstrata operations and subsidence impacts. | Ongoing |
| If adverse effects on Bettys Creek due to subsidence are observed, the creek and/or diversion will be rehabilitated to an appropriate standard. | In the event of subsidence impacts, the natural creek, HVCC's Bettys Creek diversion channel and floodplain will be rehabilitated to a similar state as existed prior to subsidence. This may include, but is not limited to, draining ponded areas, re-establishing drainage paths or diverting surface water flows from areas of potential ponding. Any installed remedial works will be maintained as appropriate for a period of no less than five years. | As required |
| Ensure minimal subsidence impacts to farm dams. | Restore any dam that is damaged by subsidence or has its storage capacity reduced by more than 10 percent to a condition similar to the dam's pre-subsidence condition. Should water be lost from a dam to the extent that livestock are impacted, an alternative water supply will be provided by GCCM. | As required |
| Ensure minimal subsidence impacts to surface water regimes. | Should water begin to pond in an area, GCCM will carry out earthworks to allow the water to drain away as requested by the relevant landowner. | As required |
| | Prepare and implement a Bettys Creek monitoring and management plan to the satisfaction of the Department of Water and Energy prior to subsiding Bettys Creek. | Prior to subsiding Bettys Creek |
| Ensure minimal subsidence impacts to groundwater. | Detailed ground deformation modelling and assessment of its effects on groundwater will be undertaken prior to mining Longwall 10 using Dr Winton Gale's FLAC code. Following the quantification of any impacts, appropriate management and mitigation measures will be developed if required. | Modelling to be undertaken prior the Longwall 10 Monitoring will be ongoing |
| | Annual verification of actual seepage volumes into the ICO underground and changes in bore water levels versus predictions. | |
| | Obtain all necessary licenses and comply with licence conditions. | |
| | Verification of geomechanical model predictions for each longwall including reassessment of modelled groundwater predictions should verification analysis vary significantly from predictions. | |

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| | These procedures will be developed in compliance with the Groundwater Management Plan required by licence 20BL169862. The plan and licence conditions will be audited at completion of longwall mining. | |
| Conduct all operations in accordance with the existing surface water management plan. | The existing on-site mine water management system, including mine water storage, clean and dirty water separation, clean water release and runoff control will continue. On going monitoring will be used to refine the current water balance estimates. | Ongoing |
| | All monitoring results will be reported in the AEMR and distributed to the relevant government agencies. | Annually |
| Noise | | |
| Ensure minimal noise disturbance during installation of gas drainage boreholes and general operational activities. | Undertake routine noise monitoring as identified in the various approvals and licences for Glennies Creek Colliery. Comply with Condition 7 of Schedule 3 of the Glennies Creek Surface Facilities Project Approval (application 06-0057) with regard to noise impact from the installation of and operation of gas extraction plants and gas wells. | Ongoing |
| | The results of these monitoring programs will be presented in the Annual Environmental Management Reports (AEMR). | Annually |
| Air Quality and Greenhouse Gas | | |
| Ensure that greenhouse gas generation is minimised for this project. | An inventory of emissions and sinks will be developed and maintained. | Ongoing |
| | Greenhouse awareness training will be held at induction to make employees aware of the science of global warming and detailed efforts to minimise emissions. | As required |
| | Energy audits will be held when practicable to ensure that the mine is using best practice techniques to minimise energy use and is operating at optimum energy levels. | As required |
| | Consider electrical efficiency in assessments of new mobile and fixed equipment. | Ongoing |
| | Existing dust and greenhouse mitigation and monitoring programs will be continued throughout the life of the project. | Ongoing |
| | Ensure soil is moist before stripping (gas drainage boreholes). | As required during installation of gas drainage boreholes |
| | Considerate diesel efficiency in assessments of new mobile and fixed equipment. | Ongoing |
| | Regular maintenance and servicing of machinery and equipment ensuring equipment will be maintained to retain high levels of energy efficiency. | Ongoing |
| | To the extent practicable, assisting Envirogen in the utilization of methane from gas drainage boreholes. | Following plant commissioning |
| | Emissions and abatement strategies will be reported annually. | Ongoing |