



Bulli Seam Operations Annual Compliance Report – August 2020 (EPBC 2010/5350)

Date of submission: 11 August 2020

South32 Website Upload Date: 11 August 2020

Abbreviations:

DOtEE – Federal Department of the Environment & Energy (Now DAWE)

DAWE – Department of Agriculture, Water and the Environment (Formerly DOtEE)

OEH – NSW Office of Environment and Heritage (now DPIE)

CCL – Consolidated Coal Lease

EPBC – Environment Protection and Biodiversity Conservation

IMC – Illawarra Metallurgical Coal

In accordance with condition 14 of the EPBC approval (2010/5350) within three months of every 12 month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the department at the same time as the compliance report is published.

Condition	Condition Summary	Status	Compliant 2020 Y/N
1	<u>Persoonia Hirsuta</u> Approval holder must legally secure the approved offset area for conservation for the duration of the EPBC approval.	Proposed offset area submitted to DOtEE in the Persoonia hirsuta Offset Management Plan. Application submitted on 26 Nov 2013 to amend CCL724 via a s238 Condition under the Mining Act 1992 to legally secure a Persoonia Offset Area at West Cliff Mine as required by our Bulli Seam Operations EPBC Approval (2010/5350). The Minister for Resources and Energy amended CCL 724 on 23 March 2014.	Yes



Condition	Condition Summary	Status	Compliant 2020 Y/N
2	<p><u>Persoonia Hirsuta</u></p> <p>Develop a management plan for the <i>Persoonia hirsuta</i> offset area.</p> <p>Annual monitoring requirements and provide results of the monitoring to the Dept within a timeframe.</p> <p>No clearing of Stage 4 emplacement area permitted until the Offset MP has been approved by the Minister.</p>	<p>Persoonia management plan was submitted to DOtEE prior to the 31st December 2012 and approved on 22 November 2013 (ref 2013/10882). The latest revision (version 8) was approved April 2019. Plan is available on our website using this link: Persoonia hirsuta Offset Management Plan</p> <p>Persoonia hirsuta Condition Reports submitted as required in 2013, 2014, 2015 (submitted late), 2016, 2017, 2018 and 2019.</p> <p>Clearing for Stage 4 coal-wash has not yet been undertaken.</p>	Yes
3	<p><u>Persoonia Hirsuta</u></p> <p>Engage a suitably qualified expert to undertake targeted research to inform conservation activities. Make research publicly available.</p>	<p>IMC received an extension to the deadline for finalising and reporting the research to 30 June 2021.</p> <p>The research strategy is included within the approved Offset MP (see link above).</p>	Yes
4	<p><u>Shale/Sandstone Transition Forest</u></p> <p>Implement the approved SSTF Offset MP.</p> <p>Legally secure the offset for long term conservation.</p>	<p>In 2012, IMC provided an offset management plan as well as ecological survey information to comply with these conditions. The plan was approved by the DOtEE in June 2013. In 2014, IMC requested an extension to the deadline to</p>	Yes



Condition	Condition Summary	Status	Compliant 2020 Y/N
		<p>have the offset secured in perpetuity. DOtEE granted an additional 18 months, making the deadline March 2016.</p> <p>In October 2015, IMC made an application to (then) NSW Office of Environment & Heritage (OEH) to have the SSTF offset secured via a BioBanking Agreement under Part 7A Division 2 of the <i>Threatened Species Conservation Act 1995</i>. The BioBanking Agreement was finalised and executed on 1st February 2017.</p>	
5	<p><u>Shale/Sandstone Transition Forest</u></p> <p>Provide a management plan for shale/sandstone transition forest.</p>	<p>Management plan submitted and approved on 7 June 2013. The revised Plan was updated and approved on 2 September 2014.</p> <p>The Management Plan was updated in 2018 and re-submitted to the DOtEE to reflect the new offset mechanism (BioBanking). Condition 5A was added to the EPBC approval in May 2018:</p> <div data-bbox="983 802 1637 1054" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center; margin: 0;">Conditions attached to the approval</p> <p>5A If the Shale Sandstone Transition Forest is legally secured as a registered NSW BioBanking site, the management plan developed under the NSW BioBanking Agreement for that site is an Offset Management Plan for the purposes of Condition 4. The annual reporting required under that scheme may be provided to the department in place of the reports containing monitoring results required at Condition 5c, on the proviso that all measures specified in Condition 5 are covered.</p> </div> <p>The 2017/18, 2018/19 and 2019/20 SSTF monitoring was conducted under the requirements of the Biobanking Agreement. The annual monitoring report for 2017/18 was provided to DOtEE on 31 May 2018 which is later than “30 days of every 12-month anniversary of the date the Offset is protected in perpetuity” (technically required by March 2018 as a requirement of Condition 5c). IMC delayed submission of the report until the DOtEE decision to revise Condition 5. S32IMC received the Department’s decision May 2018.</p>	Yes



Condition	Condition Summary	Status	Compliant 2020 Y/N
		<p>The 2019 annual report was completed in accordance with the BioBanking Agreement and provided to the DOtEE in Aug 2019 once completed. The 2020 annual report was also completed in accordance with the BioBanking Agreement and provided to the DAWE in Aug 2020.</p> <p>In the Independent Environmental Audit (Dec 2019) that was conducted for the Bulli Seam Operations (BSO) under Condition 9 of Schedule 6 of the BSO Project Approval and Condition 18 of EPBC Approval 2010/5350, an administrative non-compliance was noted, and a recommendation was made as follows:</p> <p><i>It is recommended that confirmation be sought from the Department that the required timing for submission of the monitoring report in Condition 5c be changed to that required under the Biobanking Scheme.</i></p> <p>South32 received the below response from DAWE in July 2020:</p>	



Condition	Condition Summary	Status	Compliant 2020 Y/N
		<p>From: Peter Blackwell <Peter.Blackwell@awe.gov.au> Sent: Friday, 10 July 2020 2:34 PM To: Schultz, Chris <Chris.Schultz1@south32.net> Cc: Vaughn Cox <Vaughn.Cox@awe.gov.au> Subject: RE: Submission date for Biobanking Report - Shale/Sandstone Transition Forest Offset [SEC=OFFICIAL]</p> <p>Hi Chris</p> <p>I confirm that, consistent with the intent of condition 5A, added to the conditions attached to the approval on 4 May 2018, if the SSTF is legally secured as a registered NSW BioBanking site, the annual reporting required under NSW BioBanking for that site may be provided to the Department in place of the reports containing monitoring results required at condition 5c, and thus such reports should be provided to the Department in accordance with the timing required under NSW BioBanking for that site.</p> <p>Cheers</p> <p>Peter Blackwell Post Approvals Section Assessments (WA, SA, NT), Post Approvals and Policy Branch Environment Approvals Division</p> <p>Department of Agriculture, Water and the Environment awe.gov.au T: 03 6208 2927 E: peter.blackwell@awe.gov.au</p>	
6	<p><u>Coal Wash Emplacement Staging and Rehabilitation Plan</u></p> <p>Develop a Coal Wash Emplacement Staging and Rehabilitation Plan for stage 4 coal wash emplacement area.</p> <p>Submission of rehabilitation monitoring results.</p>	<p>The West Cliff Coal Wash Emplacement Area Management Plan (available on our website) incorporates the requirements of both the EPBC Act approval and NSW EP&A Act. The latest version of the Plan was approved by the DOtEE on 18 Aug 2017. The Plan will be revised and resubmitted in 2020.</p> <p>2017 Results were provided in the Annual Review which is published on our website. A link to the 2017 report was provided by email to DOtEE on 28 Sept 2018 meaning the reporting of monitoring results was not within the 30 days of every 12-month anniversary of the implementation date of the Plan (Condition 6f – Technical due date is 18 Sept). The 2018 report was submitted on time by email on the 12 September 2019. The 2019 report was submitted on time by email on the 23 July 2020.</p>	<p>Yes – See comments regarding the 2017 report.</p>



Condition	Condition Summary	Status	Compliant 2020 Y/N
7	<u>Southern Brown Bandicoot and Broad Headed Snake Management Plan or Plans</u> Develop a Southern Brown Bandicoot and Broad Headed. Snake conservation management plan or plans.	Draft Plans completed and submitted to DOtEE on 15 May 2013. Plans revised following comments from DOtEE and OEH. Final Plans re-submitted to DOtEE and OEH on 29 April 2014. Plans approved on the 28 May 2014. The Plans were revised in 2016 and resubmitted to DOEE for approval. The revised Southern Brown Bandicoot Plan was approved November 2017. The revised Broad-headed Snake Plan was approved 17 Jan 2019. The current Plans are available on the IMC website using these links: <ul style="list-style-type: none">• Southern Brown Bandicoot Management Plan• Broad Headed Snake Management Plan	Yes
8	<u>Surface and Ground Water Quality Monitoring and Adaptive Management Plan</u> Develop a Surface and Ground Water Quality Monitoring and Adaptive Management Plan for species listed in the EPBC Act.	Original Plan submitted on the 30 September 2012 to DOtEE. Plan was approved on 3 July 2014. The Plan was revised and submitted to DOtEE on 29 June 2017; The latest version was approved on 29 August 2018. Current Plan is available on the IMC website at: Adaptive Management Plan for Water Sensitive EPBC Act Listed Species	Yes
9	<u>Mine Closure Environmental Management Plan</u> Develop a mine closure plan 3 years prior to closure for EPBC Act listed species.	Plan not yet submitted. To be submitted in the mine closure plan.	N/A
10	<u>Mine Closure Environmental Management Plan</u> Management for EPBC listed bats through the decommissioning of mining equipment.	Plan not yet submitted. To be submitted in the mine closure plan.	N/A
11	<u>Shapefiles</u> Provide offset area shapefiles to the DOtEE.	Shapefiles provided on 26 November 2013.	Yes
12	<u>Notification of Actual Date of Commencement</u>	Letter sent to DOtEE (previously DSEWPaC) on 31 May 2012.	Yes



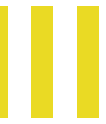
Condition	Condition Summary	Status	Compliant 2020 Y/N
	Notification date of commencement to be supplied to DSEWPaC.		
13	<u>Publication Requirements</u> Publish all management plans, reports, strategies or agreements with the Department	Undertaken as required. See IMC website: https://www.south32.net/our-business/australia/illawarra-metallurgical-coal/documents .	Yes
14	<u>Compliance Report</u> Publish a report on website addressing compliance with each of the conditions of this approval.	This compliance report meets this condition. The 2013, 14, 15, 16, 17, 18 and 19 reports were submitted and are available on the IMC website. The 2013 compliance report was submitted five days after the due date required by the condition. This was found to be non-compliant due to late submission of the compliance report. All other reports have been submitted on time.	Yes
15	<u>Accurate Records Must be Maintained</u> Maintain accurate records substantiating all activities associated with or relevant to the conditions of approval.	Documents are maintained in the IMC controlled document registers (iPick).	Yes
16	<u>Minister's Approval of the Modification to a Management Plan, Report, Strategy or Agreement</u> Apply to the minister for approval to modify management plans, reports, strategies or agreements.	There were no modifications required.	Yes
17	<u>Minister's Modification to a Management Plan, Report, Strategy or Agreement</u> Comply with the minister's request to modify management plans, reports, strategies or agreements.	No requests received from the Minister for modifications in this reporting period.	Yes



Condition	Condition Summary	Status	Compliant 2020 Y/N
18	<p><u>Independent Auditor</u></p> <p>Commission and pay the full cost for independent environmental auditor of the project.</p>	<p>Independent audits were carried out in accordance with the conditions in 2013/14, 2017 and 2019.</p> <p>EPBC condition (14) was previously found to be non-compliant in the 2013 Independent Environmental Audit due to late submission of the 2013 compliance report (5 days late).</p> <p>During the 2017 Audit, EPBC condition (2) was found to be administratively non-compliant as one of the Annual Persoonia condition-monitoring reports was submitted late (2015 report).</p> <p>In the Dec 2019 Audit, an administrative non-compliance was noted, and a recommendation was made as follows:</p> <p><i>It is recommended that confirmation be sought from the Department that the required timing for submission of the monitoring report in Condition 5c be changed to that required under the Biobanking Scheme.</i></p> <p>South32 received the below response from DAWE in July 2020:</p>	No – See comments regarding the 2019 Audit.



Condition	Condition Summary	Status	Compliant 2020 Y/N
		<div data-bbox="981 295 1451 826" style="border: 1px solid black; padding: 5px;"> <p>From: Peter Blackwell <Peter.Blackwell@awe.gov.au> Sent: Friday, 10 July 2020 2:34 PM To: Schultz, Chris <Chris.Schultz1@south32.net> Cc: Vaughn Cox <Vaughn.Cox@awe.gov.au> Subject: RE: Submission date for Biobanking Report - Shale/Sandstone Transition Forest Offset [SEC=OFFICIAL]</p> <p>Hi Chris</p> <p>I confirm that, consistent with the intent of condition 5A, added to the conditions attached to the approval on 4 May 2018, if the SSTF is legally secured as a registered NSW BioBanking site, the annual reporting required under NSW BioBanking for that site may be provided to the Department in place of the reports containing monitoring results required at condition 5c, and thus such reports should be provided to the Department in accordance with the timing required under NSW BioBanking for that site.</p> <p>Cheers</p> <p>Peter Blackwell Post Approvals Section Assessments (WA, SA, NT), Post Approvals and Policy Branch Environment Approvals Division</p> <hr/> Department of Agriculture, Water and the Environment awe.gov.au T: 03 6208 2927 E: peter.blackwell@awe.gov.au </div> <p>The 2019 Audit also identified an additional administrative non-compliance with Condition 18 i.e. the endorsement of the audit team was not received from the Minister prior to conducting the audit.</p> <p>This most recent report is available on the South32 website at: IEA 2019</p> <p>The next audit will take place in 2022.</p>	
19	<u>Unsatisfactory Commencement of Action</u> If work has not commenced within 5 years of approval, written approval needs to be obtained from the minister.	Work commenced on 15 May 2012 as per date of commencement letter sent to the Department.	Yes



EPBC 2010/5350 Management Plan Compliance Tables

BULLI SEAM OPERATIONS
 Southern Brown Bandicoot Management Plan
 ICHMP0250
 Management Plan Version 3

AUDIT REVIEW			Compliance	Comment	Proposed Action
Section	MP Ref.	Requirement / Obligation			
Review of the MP	2.2	This management plan will be reviewed, and if necessary revised, following the submission of an independent Environmental Audit report, or any modification to relevant Project approval conditions (unless the conditions require otherwise); and if required by Condition 17 of the EPBC Act Approval	In Control	Plan was last reviewed and approved 29 Nov 2017. See approval notice from DoEE dated 29 Nov 2017.	
Management Strategies	4.1	Clearing practices will incorporate appropriate controls to minimise mortality and injury to Southern Brown Bandicoots occupying the site.	In Control	Clearing practices involve a two-staged process as required by the MP.	
Pre clearance surveys	4.1.1	Prior to the first stage of clearing, the area to be cleared will be marked using flagging and surveyed by an ecologist or suitably trained site environmental representative to locate record and mark specific habitat features that are proposed for preservation and redistribution to the emplacement (e.g. rocks and boulders, stags and large hollows).	In Control	Pre-clearing assessment undertaken as required which contains instructions for redistributing habitat	
Two stage Clearing	4.1.2	Where possible, (i.e. where access to trees by the excavator is safe and practical), clearing of hollow bearing trees will be performed in a two stage process where surrounding vegetation is cleared separately, before the removal of habitat trees to allow fauna an opportunity to move.	In Control	As above	

BULLI SEAM OPERATIONS

Southern Brown Bandicoot Management Plan

ICHMP0250

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Management of Captured SBBs	4.1.3	In the event that an individual is found during the two-stage clearing process, the animal will be relocated to pre-determined suitable habitat within the West Cliff surface mining lease area.	In Control	Not triggered	
Management of Captured SBBs	4.1.3	Sites for relocation will take into account the species home ranges and be evenly spaced to avoid social conflict. Where possible, captured bandicoots will be translocated from the initial capture point to the nearest site considered suitable for the long-term habitation by the species, but not more than 1 km from that point (where possible) to reduce the possibility for unfavourable genetic mixing.	In Control	Not triggered	
Management of Captured SBBs	4.1.3	Bandicoots will be released at sites as soon as practicable after capture.	In Control	Not triggered	
Habitat Protection during construction	4.1.4	Sediment control measures will be adopted during clearing, as outlined in the West Cliff Coal Wash Emplacement Area Management Plan;	In Control	Incorporated into emplacement design requirements	
Habitat Protection during construction	4.1.4	The emplacement area will be clearly demarcated and regularly surveyed to prevent unnecessary clearing or access by construction vehicles and plant to surrounding potential habitat;	In Control	Emplacement boundaries are defined on digital plans and bounded by haul roads and diversion drains.	

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 Southern Brown Bandicoot Management Plan
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Habitat Protection during construction	4.1.4	Construction materials and spoil must not be stored, dumped or stockpiled within surrounding habitat; and	In Control	Stockpiling of freshly stripped topsoil is avoided through progressive rehabilitation. There are some stockpiles onsite containing topsoil material from the original stage 3 emplacement development construction; however this is strategically set aside for future capping material as the emplacement progresses down the valley. These stockpiles are stable and non-polluting and situated within the approved disturbance footprints.	
Habitat Protection during construction	4.1.4	Induction of the Emplacement Area Supervisory personnel will include information about the Southern Brown Bandicoot and its habitat within Stage 4 of the Emplacement Area, along with protection measures that will be in place and enforced during the construction period;	In Control	Construction in Stage 4 has not yet commenced.	
Habitat Protection during construction	4.1.4	Inclusion of general information on threatened species (including key Site contacts for threatened species) for all West Cliff Emplacement personnel.	In Control After Action Close-out	See action	Refresh emplacement operational personnel on the requirements for threatened species during emplacement construction This is planned for the latter half of 2020.

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Summary of Impact Minimisation Strategies	4.2	Vegetation clearing to be within approved boundaries	In Control	Boundaries set out in Emplacement MP	
Summary of Impact Minimisation Strategies	4.2	Future development requiring land clearing to consider <i>Isoodon obesulus obesulus</i> individuals.	In Control	Any additional clearing (outside the emplacement area) onsite needs to consider internal and external approval requirements i.e. internal = Permit to Disturb; External = Revision of the BSO Biodiversity Management Plan and subsequent approval from the NSW Department of Planning and Environment.	
Summary of Impact Minimisation Strategies	4.2	Conduct pre-clearance surveys in the Stage 3 and 4 emplacement areas and subsequent two-stage clearing, to give animals the opportunity to move away. Individuals found will be relocated to pre-determined suitable habitat within the West Cliff surface mining lease area.	In Control	Two-stage clearing processes are being followed as required. No SBB individuals have been found to date. Most recent clearing is included in above items.	
Summary of Impact Minimisation Strategies	4.2	Document by preparation of pre-clearing survey reports for every emplacement phase cleared including use of GIS coordinates for survey results.	In Control	Pre-clearance survey reports completed as required and issued to the emplacement contractors undertaking the clearing.	
Summary of Impact Minimisation Strategies	4.2	Document numbers of individuals trapped and released. Observation of animal condition. Record release location.	In Control	Not triggered	
Summary of Impact Minimisation Strategies	4.2	Placement of topsoil, hollow logs and other structural elements of habitat for the Southern Brown Bandicoot in rehabilitated areas.	In Control	Undertaken as part of the progressive rehabilitation program - See Annual Emplacement Rehabilitation Monitoring Report.	
Summary of Impact Minimisation Strategies	4.2	Annual Emplacement Rehabilitation Inspection program undertaken	In Control	As above	

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 Southern Brown Bandicoot Management Plan
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Summary of Impact Minimisation Strategies	4.2	Reports from the annual rehabilitation monitoring program to be attached to the Bulli Seam Annual Environmental Management Report (Annual Review).	In Control	Report is included each year as an appendix to the Annual Review. https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bso-annual-review---fy19---with-appendices.pdf?sfvrsn=63b1a45e_10	
Summary of Impact Minimisation Strategies	4.2	Dust impacts from emplacement operations will be mitigated by the coal wash material being wet from coal washing processes and being compacted once emplaced.	In Control	In addition to this, watercart in use for the active emplacement areas as additional dust control.	
Summary of Impact Minimisation Strategies	4.2	Active emplacement areas will be capped and vegetated as soon as practicable.	In Control	Rehabilitation is progressive as required. Report is included each year as an appendix to the Annual Review. https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bso-annual-review---fy19---with-appendices.pdf?sfvrsn=63b1a45e_10	
Summary of Impact Minimisation Strategies	4.2	Annual environmental reporting of dust results in the Bulli Seam Annual Environmental Management Report (Annual Review).	In Control	Dust results are provided in the Annual Review each year as required. https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bso-annual-review---fy19---with-appendices.pdf?sfvrsn=63b1a45e_10	
Summary of Impact Minimisation Strategies	4.2	Participation in regional vertebrate pest programs with National Parks & Wildlife Service and Sydney Catchment Authority.	In Control	Not aware of any such program existing. No population of SBBs has been confirmed or defined.	

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 Southern Brown Bandicoot Management Plan
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Summary of Impact Minimisation Strategies	4.2	Note: The regional research program established under the EPBC Act project approval (condition 7b) will focus on population monitoring. A regional pest problem will be designed once a population of Southern Brown Bandicoots has been confirmed and defined.	In Control	No population of SBBs has been confirmed or defined.	
Summary of Impact Minimisation Strategies	4.2	Reporting of project to DoE and other stakeholders	In Control	Dept is provided with a copy of the Annual Review each year.	
Summary of Impact Minimisation Strategies	4.2	Adjustments made to systems and methods as required	In Control	Not Triggered	
Summary of Impact Minimisation Strategies	4.2	Monitoring including pre-clearing surveys, capture and transfer of animals, implementation of two-stage clearing, success of translocation efforts, progress in rehabilitation of emplacement sites, success of captive breeding programs if applicable.	In Control	Pre-clearance surveys undertaken as required, no animals have been captured, success of rehabilitation reported in the Annual Review. Report is included each year as an appendix to the Annual Review. https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bso-annual-review---fy19---with-appendices.pdf?sfvrsn=63b1a45e_10	

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Summary of Impact Minimisation Strategies	4.2	Annual compliance report to DAWE.	In Control	Annual compliance report submitted as required https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-reports/bulli-seam-operations-epbc-compliance-report-2019.pdf?sfvrsn=b7a9b962_4 . Department requested additional information in 2019 which was accommodated and also included in the	
Provision of Regional Funding	5.1	IC has funded \$250,000 towards the regional management of the Southern Brown Bandicoot and Broad Headed Snake programs as outlined in this Plan (Attachment B). The project will take place over three years commencing July 2014 and finishing June 2017 with payments scheduled as follows: * Year 1 \$85,000 July 2014 * Year 2 \$85,000 July 2015 * Year 3 \$80,000 July 2016	In Control	Program completed as required	
Actions to be funded	5.2	The Office of Environment and Heritage (OEH) developed a Project Proposal to be funded by IC, which addresses points (c) to (f) of the EPBC Act Approval Condition 7. The OEH letter and Project Proposal is included in this Plan as Attachment B.	In Control	The (then) NSW Office of Environment and Heritage (OEH) developed a Project Proposal to be funded by IC, which addresses points (c) to (f) of the EPBC Act Approval Condition 7.	

BULLI SEAM OPERATIONS
 Southern Brown Bandicoot Management Plan
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Impacts to other EPBC Act Listed Species	5.3	Condition 7(d) of the EPBC Approval for works conducted by OEH as follows: (d) a demonstration that management actions to be undertaken will not adversely impact EPBC Act listed species; The OEH Proposal addressed the above requirement (see section titled Consideration of Impacts of the Project).	In Control	The OEH Proposal addressed the above requirement.	
Funding Arrangements	5.4	OEH provided a Project Proposal for the Broad headed snake and Southern Brown bandicoot Recovery Actions (see Attachment B). IC provided the funding through a Non-order Invoice (NOI). OEH issued three separate invoices, prior to the start of each financial year i.e. year 1, year 2 and year 3.	In Control	IMC provided the funding through a Non-order Invoice (NOI). OEH issued three separate invoices, prior to the start of each financial year i.e. year 1, year 2 and year 3.	
Documentary Evidence of Funding	5.5	IC provided documentary evidence to the DoTE&E in September 2016 to satisfy this condition. Once the project is completed (June 2017), relevant results will be included in the FY17 BSO Annual Review.	In Control	IMC provided documentary evidence to the DoTE&E in September 2016 to satisfy this condition. https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bulli-seam-operations-project-annual-review-fy2017.pdf?sfvrsn=2ace739a_4	

BULLI SEAM OPERATIONS
Broad-Headed Snake Management Plan
ICHMP0568
Management Plan Version 4

AUDIT REVIEW			Compliance	Comment & Evidence	Proposed Action
Section	MP Ref.	Requirement / Obligation			
Review of the MP	2.2	This management plan will be reviewed, and if necessary revised, following the submission of an independent Environmental Audit report, or any modification to relevant Project approval conditions (unless the conditions require otherwise); and if required by Condition 17 of the EPBC Act Approval	In Control	Plan was last reviewed and approved 17 Jan 2019. See approval notice from DoEE dated 17 Jan 2019.	
Management Strategies	4.1	Clearing practices will incorporate appropriate controls to minimise mortality and injury to Broad-headed Snakes occupying the site.	In Control	Clearing practices involve a two-staged process as required by the MP. Pre-clearing assessment undertaken as required which contains instructions for redistributing habitat	
Pre clearance surveys	4.1.1	Prior to the first stage of clearing, the area to be cleared will be marked using flagging and surveyed by an ecologist or suitably trained site environmental representative to locate record and mark specific habitat features that are proposed for preservation and redistribution to the emplacement (e.g. rocks and boulders, stags and large hollows).	In Control	Pre-clearing assessment undertaken as required which contains instructions for redistributing habitat Pre-clearing assessment undertaken as required which contains instructions for redistributing habitat	
Two stage Clearing	4.1.2	Where possible, (i.e. where access to trees by the excavator is safe and practical), clearing of hollow bearing trees will be performed in a two stage process where surrounding vegetation is cleared separately, before the removal of habitat trees to allow fauna an opportunity to move.	In Control	Clearing practices involve a two-staged process as required by the MP. Pre-clearing assessment undertaken as required which contains instructions for redistributing habitat	

BULLI SEAM OPERATIONS
Broad-Headed Snake Management Plan
ICHMP0568
Management Plan Version 4

Management of Captured BHSs	4.1.3	In the event that an individual is found during the two-stage clearing process, the animal will be relocated to pre-determined suitable habitat within the West Cliff surface mining lease area.	In Control	In April 2016, one individual Broad-headed Snake was found in the Stage 3 area during a pre-clearing survey. The individual was captured and released to another location in accordance with this Plan. No other individuals have been located since.	
Management of Captured BHSs	4.1.3	Pre-determined sites for relocation will take into account the species home ranges and be evenly spaced to avoid social conflict. Ideally, predetermined relocation sites should not be inhabited by another Broad-headed snake at the time of relocation.	In Control	In April 2016, one individual Broad-headed Snake was found in the Stage 3 area during a pre-clearing survey. The individual was captured and released to another location in accordance with this Plan. No other individuals have been located since.	
Management of Captured BHSs	4.1.3	Pre-determined relocation sites will necessarily consist of the following: * Occur on Hawkesbury Sandstone within the current known range of the species and provide rocky outcrops with a westerly or north-westerly aspect, and horizontal crevices (Webb and Shine 1998c); * Have large adjacent areas of woodland that support large stags or trees bearing numerous hollows (Webb and Shine 1997b). The adjacent woodland will ideally be larger than the area supporting rocky outcrops (Webb and Shine 1997a) and contain preferred species of 'habitat trees' (trees most often selected by Broad-headed Snakes) such as Eucalyptus gummifera, E. punctata, E. agglomerata and E. piperita (Webb and Shine 1997b).	In Control	The snake found in April 2016 was relocated to pre-determined habitat in accordance with Figure 4 of the MP.	

BULLI SEAM OPERATIONS
 Broad-Headed Snake Management Plan
 ICHMP0568
 Management Plan Version 4

Management of Captured BHSs	4.1.3	Any other fauna located within the emplacement area during the pre-clearing survey will also be relocated. In particular, any Velvet Geckos (and other lizards) encountered will be relocated to the same pre-determined sites for Broad-headed Snakes to provide prey for the relocated snakes.	In Control	Not triggered	
Management of Captured BHSs	4.1.3	Where possible, snakes will be translocated from the initial capture point to the nearest site considered suitable for the long-term habitation by the species, but not more than 1 km from that point (where possible) to reduce the possibility for unfavourable genetic mixing. Snakes will be released at sites as soon as practicable after capture.	In Control	The snake found in April 2016 was relocated to pre-determined habitat in accordance with Figure 4 of the MP.	
Habitat Translocation	4.1.4	Suitable winter habitat occurring within the Stages 3 and 4 of the Emplacement Area will be identified during the pre-clearing survey.	In Control	Pre-clearing assessment undertaken as required which contains instructions for redistributing habitat	

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<p>Habitat Translocation</p>	<p>4.1.4</p>	<p>Rehabilitation of the Emplacement area behind the line of clearing for the Broad-headed Snake, in terms of winter habitat, will include the following: * Translocated rocky outcrops and boulders will ideally be positioned with a westerly or north-westerly aspect and crevices should remain horizontal (Webb and Shine 1998c); * The Velvet Gecko should also be translocated (Webb and Shine 2000). Suitable habitat for this prey species is the same as for the Broad-headed Snake's winter habitat and includes loose rock on rock substrate (Shine et al. 1998, Webb and Shine 1998c); * The above shelter sites will ideally be evenly spaced and not clumped together to encourage a greater number of Broad-headed Snakes to the area (Webb and Shine 1997a). If shelter sites are too close together, they are likely to remain uninhabited due to home range overlap. Shelter sites will ideally be placed at least 300 m apart and close/adjacent to suitable summer habitat (translocated hollow-bearing trees or limbs within rehabilitating sections of the old Emplacement areas; Webb and Shine 1997a); * Artificial rocks/concrete pavers will be added to the Emplacement area behind the line of clearing to increase habitat opportunities for prey items and the Broad-headed Snake if insufficient natural rock cannot be sourced from the Emplacement Area for this purpose. Webb and Shine (2000) recommend the use of large pavers (30 – 45 cm wide and 5 – 10</p>	<p>In Control</p>	<p>Rehabilitation includes placement of rocks and hollows as required. Pre-clearance inspections also identify flat rock to be retained and translocated to the rehab areas. There is some further work required to install artificial pavers in the emplacement area. No translocation of Velvet Geckos has been undertaken or required.</p>	<p>Install artificial pavers on a westerly facing section of the emplacement area. This project is planned for FY21.</p>
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		<p>cm thick), as well as a range of smaller pavers (e.g. 19 cm wide) and thicker pavers (e.g. > 30 cm thick) placed with a variety of crevice sizes (up to 10 mm). The artificial rocks will be placed in both shaded and exposed areas to provide a range of suitable micro-climates for the snake and its prey depending on the time of year.</p> <p>* Hollow logs and hollow-bearing stags will also be translocated to provide additional retreat-sites for the Broad-headed Snake and its prey (Webb and Shine 1997b).</p>			
Summary of Impact Minimisation strategies	4.1.5	Vegetation clearing to be within approved boundaries	In Control	Boundaries set out in Emplacement MP	
Summary of Impact Minimisation strategies	4.1.5	Future development requiring land clearing to consider <i>Hoplocephalus bungaroides</i> individuals.	In Control	Any additional clearing (outside the emplacement area) onsite needs to consider internal and external approval requirements i.e. internal = Permit to Disturb; External = Revision of the BSO Biodiversity Management Plan and subsequent approval from the NSW Department of Planning and Environment.	
Summary of Impact Minimisation strategies	4.1.5	Conduct pre-clearance surveys in the Stage 3 and 4 emplacement areas and subsequent two-stage clearing, to give animals the opportunity to move away.	In Control	Two-stage clearing processes are being followed as required. No BHS individuals have been found to date.	

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Summary of Impact Minimisation strategies	4.1.5	Individuals found will be relocated to pre-determined suitable habitat within the West Cliff surface mining lease area.	In Control	Two-stage clearing processes are being followed as required. No BHS individuals have been found since 2016 (see comment above).	
Summary of Impact Minimisation strategies	4.1.5	Document by preparation of pre-clearing survey reports for every emplacement phase cleared including use of GIS coordinates for survey results.	In Control	Pre-clearance survey reports completed as required and issued to the emplacement contractors undertaking the clearing. Last report completed March 2020.	
Summary of Impact Minimisation strategies	4.1.5	Document numbers of individuals trapped and released. Observation of animal condition. Record release location.	In Control	S32 engaged a snake expert from Niche Environment & Heritage in 2016 to capture and relocate the individual. A brief report was prepared documenting the process. The April 2016 snake was relocated to pre-determined habitat in accordance with Figure 4 of the MP.	
Summary of Impact Minimisation strategies	4.1.5	Placement of hollow logs and rock outcrop elements of habitat for the Broad-headed Snake in rehabilitated areas.	In Control	Rehabilitation includes placement of rocks and hollows as required. Pre-clearance inspections also identify flat rock to be retained and translocated to the rehab areas. There is some further work required to install artificial pavers in the emplacement area. No translocation of Velvet Geckos has been undertaken or required.	

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Summary of Impact Minimisation strategies	4.1.5	Installation of artificial habitat (e.g. concrete paving slabs) if necessary as per Webb and Shine (2000).	In Control After Action Close-out	Rehabilitation includes placement of rocks and hollows as required. Pre-clearance inspections also identify flat rock to be retained and translocated to the rehab areas. There is some further work required to install artificial pavers in the emplacement area. No translocation of Velvet Geckos has been undertaken or required.	As per action above regarding the installation of artificial pavers
Summary of Impact Minimisation strategies	4.1.5	Annual Emplacement Rehabilitation Inspection program undertaken	In Control	Undertaken as part of the progressive rehabilitation program - See Annual Emplacement Rehabilitation Monitoring Report	
Summary of Impact Minimisation strategies	4.1.5	Reports from the annual rehabilitation monitoring program to be attached to the Bulli Seam Annual Environmental Management Report (Annual Review).	In Control	Report is included each year as an appendix to the Annual Review. https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bsa-annual-review--fy19---with-appendices.pdf?sfvrsn=63b1a45e_10 . The 2020 Annual Review is not due to be	
Summary of Impact Minimisation strategies	4.1.5	Dust impacts from emplacement operations will be mitigated by the coal wash material being wet from coal washing processes and being compacted once emplaced.	In Control	In addition to this, watercart in use for the active emplacement areas as additional dust control.	

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Summary of Impact Minimisation strategies	4.1.5	Annual environmental reporting of dust results in the Bulli Seam Annual Environmental Management Report (Annual Review).	In Control	Dust results are provided in the Annual Review each year as required. https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bso-annual-review--fy19---with-appendices.pdf?sfvrsn=63b1a45e_10	
Summary of Impact Minimisation strategies	4.1.5	Active emplacement areas will be capped and vegetated as soon as practicable.	In Control	Rehabilitation undertaken progressively As per Emplacement Area Management Plan (WCPMP0019)	
Summary of Impact Minimisation strategies	4.1.5	Reporting of project to DoEE and other stakeholders	In Control	Dept is provided with a copy of the Annual Review each year.	
Summary of Impact Minimisation strategies	4.1.5	Adjustments made to systems and methods as required	In Control	Not triggered	
Summary of Impact Minimisation strategies	4.1.5	Monitoring including pre-clearing surveys, capture and transfer of animals, implementation of two-stage clearing, success of translocation efforts, progress in rehabilitation of emplacement sites, success of captive breeding programs if applicable.	In Control	Pre-clearance surveys undertaken as required, no animals have been captured since 2016, success of rehabilitation reported in the Annual Review.	
Summary of Impact Minimisation strategies	4.1.5	Annual compliance report to DoEE.	In Control	Annual compliance report submitted as required https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-reports/bulli-seam-operations-epbc-compliance-report-2019-2020-fy19-2020-17-06-2020-14	

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Provision of Regional Funding	5.1	IC has funded \$250,000 towards the regional management of the Southern Brown Bandicoot and Broad Headed Snake programs as outlined in this Plan (Attachment B). The project will take place over three years commencing July 2014 and finishing June 2017 with payments scheduled as follows: * Year 1 \$85,000 July 2014 * Year 2 \$85,000 July 2015 * Year 3 \$80,000 July 2016	In Control	Program completed as required.	
Actions to be funded	5.2	The Office of Environment and Heritage (OEH) developed a Project Proposal to be funded by IC, which addresses points (c) to (f) of the EPBC Act Approval Condition 7. The OEH letter and Project Proposal is included in this Plan as Attachment B.	In Control	The (then) Office of Environment and Heritage (OEH) developed a Project Proposal to be funded by IC, which addresses points (c) to (f) of the EPBC Act Approval Condition 7.	
Impacts to other EPBC Act Listed Species	5.3	Condition 7(d) of the EPBC Approval for works conducted by OEH as follows: (d) a demonstration that management actions to be undertaken will not adversely impact EPBC Act listed species; The OEH Proposal addressed the above requirement (see section titled Consideration of Impacts of the Project).	In Control	The OEH Proposal addressed the above requirement.	
Funding Arrangements	5.4	OEH provided a Project Proposal for the Broad headed snake and Southern Brown bandicoot Recovery Actions (see Attachment B). IC provided the funding through a Non-order Invoice (NOI). OEH issued three separate invoices, prior to the start of each financial year i.e. year 1, year 2 and year 3.	In Control	IMC provided the funding through a Non-order Invoice (NOI). OEH issued three separate invoices, prior to the start of each financial year i.e. year 1, year 2 and year 3.	

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<p>Documentary Evidence of Funding</p>	<p>5.5</p>	<p>IC provided documentary evidence to the DoTE&E in September 2016 to satisfy this condition. Once the project is completed (June 2017), relevant results will be included in the FY17 BSO Annual Review.</p>	<p>In Control</p>	<p>IMC provided documentary evidence to the DoTE&E in September 2016 to satisfy this condition.</p> <p>https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bulli-seam-operations-project-annual-review-fy2017.pdf?sfvrsn=2ace739a_4</p>	
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AUDIT REVIEW			Compliance	Comment & Evidence	Proposed Action
Section	MP Ref.	Requirement / Obligation			
Protection Mechanism	1.4.1	The Persoonia hirsuta Offset Area is protected by incorporating a condition into Consolidated Coal Lease No. 724 (CCL724)	In Control	Refer to lease conditions	
Protection Mechanism	1.4.1	The leaseholder must comply with the Persoonia hirsuta Offset Management Plan approved (and modified if applicable) in accordance with the requirements of the Bulli Seam Operations Expansion, Bulli, NSW (EPBC 2010/5350) Approval dated 15 May 2012, made under sections 130(1) and 133 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act Approval).	In Control	Link to last triennial audit - https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/bulli-seam-operations-project-independent-environment/2013-bulli-seam-operations-independent-environmental-audit.pdf?sfvrsn=2e8378a1_5	
Protection Mechanism	1.4.1	The leaseholder must provide the Department of Trade and Investment NSW - Mineral Resources Unit with a copy of the Compliance Report required by condition 14 of the EPBC Act Approval at the same time that the report is published in accordance with the requirements of Condition 14.	In Control	The past compliance reports have been provided to the NSW Department of Planning and Environment as an appendix to the Annual Review; however, the annual review is generally submitted after the date of publishing the EPBC Compliance report (i.e. Compliance report due date is generally submitted and published in August each year whereas the Annual Review is not published and submitted until end of September each year. The 2020 report will be submitted as required by the condition.	

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Protection Mechanism	1.4.1	The leaseholder must also provide Department of Trade and Investment NSW - Mineral Resources Unit with a copy of the Audit Report required by Condition 18 of the EPBC Act Approval as soon as practicable following confirmation that the Audit Report addresses the audit criteria to the satisfaction of the Minister responsible for the administration of the EPBC Act (or their delegate).	In Control	The triennial audit reports are provided to the NSW Department of Planning, Industry and Environment as required.	
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Protection Mechanism	1.4.1	<p>In the event that the Persoonia offset cannot achieve the objectives of Conditions 1 and 2, Illawarra Coal will provide an offsite offset or alternative offset if:</p> <ul style="list-style-type: none"> - Annual surveys over the period 2037 – 2039 (both inclusive) demonstrate that the P. hirsuta core population has not been maintained or enhanced to the satisfaction of the Department. An offsite offset to be agreed by the department must be provided. The offsite offset must be secured by a legal mechanism acceptable to the Department six months prior to the expiry date of the EPBC approval (by 18 December 2041). In the event it can be demonstrated that a suitable offsite offset could not be found, Illawarra Coal will provide an alternative compensatory measure commensurate with the requirements of approval condition 1 to the satisfaction of the Department, or - CCL724 is not renewed or is revoked at any time prior to the expiry date of the EPBC approval (15 May 2042). An alternative offset to be agreed by the Department must be secured by a legal mechanism acceptable to the Department within two years of the relinquishment or revocation of CCL724. In the event it can be demonstrated that a suitable alternative offset could not be found, Illawarra Coal will provide an 	In Control	Not triggered.	
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		alternative compensatory measure commensurate with the requirements of approval condition 1 to the satisfaction of the Department.			
Review of the MP	1.5	This Plan will be reviewed in accordance with Condition 2(I) i.e. the findings from the research programs required by Conditions 3 will be incorporated into the approved Persoonia hirsuta Offset Management Plan and the revised plan will be re-submitted to the Minister for approval within 6 months of the research being finalised, i.e. within 6 months of 15 May 2021.	In Control	Not triggered.	
Persoonia Monitoring	4.1.2	All extant plants will be inspected annually to record the following attributes: <ul style="list-style-type: none"> * Height and width to measure growth rates; * Age class and Condition to assess reproductive activity, age to maturity overall health of the population etc; * Visual observations for any seedlings; and * Comments on any imminent threat or risk to the plants health (e.g. apparent disease, excessive dust deposition) to assess the effectiveness of management actions contained within this plan. 	In Control	See Annual Persoonia health monitoring report that is submitted each year to the DAWE.	

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Persoonia Monitoring	4.1.2	Height will be measured using a tape measure, measuring from the ground surface to the highest point on the plant, without physically moving any part of the plant. Condition will be defined using a combination of factors, including the percent cover of leaves, colour of leaves and the presence or absence of fruit or flowers, rating condition from 0 to 6, or from very poor condition to excellent condition (Appendix A). All plants have been recorded with a Garmin GPS and flagged with fluorescent, biodegradable flagging tape and given a unique ID.	In Control	Monitoring methods as per the above.	
Survey Timing	4.1.3	The survey will be conducted from late spring into early summer which is the peak flowering period for the species.	In Control	Monitoring is undertaken during the peak flowering season. This does change slightly depending on season but generally falls late Spring into early summer.	
Reporting	4.1.4	In accordance with Condition 2 (h) of the EPBC approval, the results of the monitoring will be provided to the Department within 30 days of every 12 month anniversary of the implementation date of this Plan.	In Control	2019 report was submitted in Dec 2019 as required.	

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Research	5	South32 Illawarra Metallurgical Coal has engaged the University of Wollongong and Royal Botanic Gardens Trust to conduct research on Persoonia hirsuta. The aim of the research is to gain a better understanding of the ecology and genetics to satisfy Condition 3 of the EPBC Act approval. A summary of the research undertaken to-date as well as the research planned is provided in Table 3.	In Control	Research is now underway at the Mt Annan Royal Botanic Gardens as per strategy.	
Research	5	As new information becomes available regarding the local population of P. hirsuta, this will be incorporated into the Management Plan revisions as required.	In Control	Not required at this stage. Awaiting final research outcomes.	
Research	5	In accordance with the conditions, South32 Illawarra Metallurgical Coal will prepare a research report and this will be made available on the Company's website in accordance with Condition 3 (f) of the EPBC Act approval.	In Control	Not triggered.	
Performance Objectives and Management Actions	6	a. Secure Offset by the required timeframe i.e. 15 May 2014.	In Control	Offset secured as per timing requirements.	
Performance Objectives and Management Actions	6	b. Offset must include a minimum area of suitable habitat to support at least 150 P. hirsuta plants.	In Control	As per this plan	
Performance Objectives and Management Actions	6	c. Maintain or increase the number of individual plants in the Offset area relative to the 2012 baseline population (~44 plants).	In Control	Translocation experiment being undertaken as per research strategy.	Continue to monitor translocation experiment

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<p>Performance Objectives and Management Actions</p>	<p>6</p>	<p>S32IMC will provide an offsite offset or alternative offset if:</p> <ul style="list-style-type: none"> - Annual surveys over the period 2037 – 2039 (both inclusive) demonstrate that the P. hirsuta core population has not been maintained or enhanced to the satisfaction of the Department. An offsite offset to be agreed by the Department must be provided. The offsite offset must be secured by a legal mechanism acceptable to the Department six months prior to the expiry date of the EPBC approval (by 18 December 2041). In the event it can be demonstrated that a suitable offsite offset could not be found, S32IMC will provide an alternative compensatory measure commensurate with the requirements of approval condition 1 to the satisfaction of the Department; or - CCL724 is not renewed or is revoked at any time prior to the expiry date of the EPBC approval (15 May 2042). An alternative offset to be agreed by the Department must be secured by a legal mechanism acceptable to the Department within two years of the relinquishment or revocation of CCL724. In the event it can be demonstrated that a suitable alternative offset could not be found, S32IMC will provide an alternative compensatory measure commensurate with the requirements of approval condition 1 to the satisfaction of the Department. - Undertake works which will lead to an increase of the density of Persoonia plants onsite: 	<p>In Control</p>	<p>Not triggered, research still underway.</p>	
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Performance Objectives and Management Actions	6	a. Develop a <i>P. hirsuta</i> research strategy	In Control	Research strategy is included in the MP.	
Performance Objectives and Management Actions	6	a. Targeted research commenced by July 2013	In Control	Targeted research has been underway since 2013.	
Performance Objectives and Management Actions	6	Research findings published by 30 June 2021 as per the EPBC Act consent.	In Control	Research findings will be published by the due date. Date not yet triggered.	
Performance Objectives and Management Actions	6	No loss of <i>Persoonia hirsuta</i> in the offset area due to land clearing or operational activities	In Control	Plants in an exposed position are clearly demarcated.	
Performance Objectives and Management Actions	6	No loss of <i>Persoonia hirsuta</i> in other areas of site (outside the approved emplacement and development footprints) due to land clearing or operational activities.	In Control	Plants in an exposed position are clearly demarcated.	
Performance Objectives and Management Actions	6	Avoidance of surface runoff from emplacement areas entering the <i>Persoonia hirsuta</i> Offset Area	In Control	Routine inspections of the Offset have not identified any issues regarding surface runoff from emplacement areas. Stage 4 emplacement construction has not yet commenced. Stage 3 is buffered by a haul road separating the Offset from the active disturbance areas. Drainage from disturbance areas is directed to dedicated catchment ponds.	

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Performance Objectives and Management Actions	6	Restrict access to offset area	In Control	Signage in place	
Performance Objectives and Management Actions	6	Minimise weed infestation within the Offset Area	In Control	Minor weed control required for perennial grasses on the powerline easement.	Weed control is ongoing.
Performance Objectives and Management Actions	6	Minimise dust impacts to <i>Persoonia hirsuta</i> from operations	In Control	Routine inspections of the Offset have not identified any issues regarding dust impacts.	
Performance Objectives and Management Actions	6	Access to the Offset Area is only permitted for the purpose of managing the offset area. Access is required for vegetation management of the powerline easement within the offset area; however, this will be controlled through the site Permit to Disturb process (PTD).	In Control	Permit process is in place. ICHF0209.	
Performance Objectives and Management Actions	6	Flagging of individual plants with coloured flagging tape or exclusion fencing if in an exposed position.	In Control	Plants in an exposed position are clearly demarcated.	
Performance Objectives and Management Actions	6	Clean and dirty water drainage systems designed and constructed to hydrologically separate the emplacement from the <i>Persoonia hirsuta</i> Offset Area.	In Control	This will be incorporated into the design of Stage 4 emplacement. Not required as yet.	
Performance Objectives and Management Actions	6	Weed control (as required) by appropriately experienced personnel.	In Control	Minor weed control required for perennial grasses on the powerline easement.	Weed control is ongoing.

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Performance Objectives and Management Actions	6	Dust impacts from emplacement operations will be mitigated by the coal wash material being wet from coal washing processes and being compacted once emplaced. Active emplacement areas will be capped and vegetated as soon as practicable.	In Control	In addition to this, watercart in use for the active emplacement areas as additional dust control.	
Performance Objectives and Management Actions	6	Signage in place to prevent unauthorised clearing and Permit to Disturb (PTD) authorisation process in place	In Control	Signage is in place.	
Performance Objectives and Management Actions	6	No fencing is proposed to enable safe implementation of physical management options for Offset Area as well as unimpeded access for wildlife and pollination vectors across the site.	In Control		
Performance Objectives and Management Actions	6	Annual condition survey and reporting of population size and health within the Offset Area.	In Control	Last report completed and submitted Dec 2019 in accordance with the condition.	
Performance Objectives and Management Actions	6	Adequate regeneration of emplacement as per the Approved Emplacement Management Plan.	In Control	As per Annual Emplacement Rehabilitation Report.	

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Performance Objectives and Management Actions	6	Soil translocation protocols and re-vegetation protocols to be implemented as per the West Cliff Coal Wash Emplacement Area Management Plan e.g. Topsoil from the donor site will be stripped from the surface in layers. The most valuable layer is the top 50 mm of soil which contains the majority of soil stored seed and propagules, plant nutrients and beneficial soil microbes.	In Control	As per Emplacement MP	
Performance Objectives and Management Actions	6	Persoonia hirsuta individuals within the approved emplacement and development footprints may be translocated to the rehabilitating emplacement.	In Control	Not required at this stage.	
Performance Objectives and Management Actions	6	Introduce successfully propagated plants (or seed from propagated plants) from the nursery at Royal Botanic Gardens to the rehabilitating emplacement (or other suitable areas outside the emplacement and disturbance footprints).	In Control	If translocation experiment that is underway in the Offset is successful, next phase will involve translocating plants from nursery to the rehab. Learnings from the initial offset trial will be incorporated into the translocation design for the rehab.	
Performance Objectives and Management Actions	6	Annual rehabilitation survey will be conducted and a report attached to the BSO Annual Review.	In Control	Annual report is attached as an appendix each year to the Annual Review. The 2019 rehabilitation report was submitted to DAWE via email on 23 July 2020.	

BULLI SEAM OPERATIONS

Adaptive Management Plan for Water Sensitive EPBC Act Listed Species

ICHMP0253

Management Plan Version 5

			Compliance	Comment & Evidence	Proposed Action
AUDIT REVIEW					
Section	MP Ref.	Requirement / Obligation			
Monitoring and Adaptive Management Framework	2	Potential impacts from mining induced subsidence is monitored and managed via an Extraction Plan which is to be approved by the Director General of DoPE prior to longwall mining commencing in any area.	In Control	Extraction plans in place for Area 9. SMP for Area 7.	
Ecological Outcomes and Performance Measures	4	The "Trigger-Action-Response Plans (TARPs)" relate to identifying, assessing and responding to the range of conditions related to potential subsidence impacts on the Rivers which form the potential habitat for Macquarie Perch which is the primary species of management concern in this Plan. Detailed performance indicators are outlined in the Extraction Plan TARPs for each mining area.	In Control	Refer to each MP	
Ecological Outcomes and Performance Measures	4	If any impact is recorded, consideration would be given to implementing appropriate management, remediation and/or mitigation measures in consultation with OEH, DoEE and other relevant stakeholders (refer Section 6). If the performance measures are exceeded, ICHPL will notify OEH and other stakeholders and implement the Contingency Plan (Section 8).	In Control	Recorded impacts are reported to relevant agencies in line with the Trigger Action Response Plan (TARP). This includes initiating discussion around remediation measures. The Georges River Rehabilitation Plan has been developed, incorporating detailed feedback from agencies, prior to being approved by DPIE and the Resources Regulator. Additional approvals will be sought to undertake the remediation, as per the plan.	Execute the Georges River Rehabilitation Plan, once all necessary approvals in place.

BULLI SEAM OPERATIONS

Adaptive Management Plan for Water Sensitive EPBC Act Listed Species

ICHMP0253

Management Plan Version 5

Water Requirements for Fish	5.1	Macquarie Perch could be impacted by subsidence through reduced habitat availability through pool diminution and possible discontinuity in smaller tributaries. These impacts are largely mitigated through the Mine Plan or longwall layout that does not longwall mine below rivers and aims to avoid impacts to critical ecological assets such as the Macquarie Perch.	In Control	No Macquarie Perch have been identified within mining areas. Longwall mining does not occur below named streams where Macquarie Perch are found.	Continue monitoring fish habitat in the mining areas.
Water Requirements for Fish	5.1	Any impacts to potential habitat for Macquarie Perch would be rehabilitated as part of the Project.	N/A	There have been no impacts to known Macquarie Perch habitat.	Continue monitoring fish habitat in the mining areas.
Water Requirements for Fish	5.1	Through the implementation of pollution reduction programs and compliance with license requirements, impacts from mine water discharges such as the Brennans Creek discharge are mitigated.	In Control	EPL2504 is in place at Appin North.	
Water Requirements for Fish	5.1	Monitoring of mine water discharge and upstream and downstream water quality is an EPL requirement and is part of the ongoing management of mine water releases e.g. Brennans Creek.	In Control	As per EPL requirements.	
Water Requirements for Fish	5.1	However subsidence related impacts may affect small permanent, semi-permanent pools which they require to complete their life cycle. These impacts are largely mitigated through the mine planning that aims to avoid critical ecological areas.	In Control	Localised impacts to fish habitat has occurred as predicted in the EIS. No listed species of fish have been impacted.	Continue monitoring fish habitat in the mining areas.

BULLI SEAM OPERATIONS

Adaptive Management Plan for Water Sensitive EPBC Act Listed Species

ICHMP0253

Management Plan Version 5

Water Requirements for Fish	5.1	<p>No EPBC listed threatened amphibian species have been recorded in the BSO project area therefore it is highly unlikely that project discharges will affect any populations.</p> <p>However subsidence related impacts may affect small permanent, semi-permanent pools which they require to complete their life cycle. These impacts are largely mitigated through the mine planning that aims to avoid critical ecological areas.</p>	In Control	No EPBC listed threatened amphibian species have been recorded in the BSO project area.	Continue monitoring impacts in the mining areas.
Monitoring Overview	6.1	<p>There are no records for Macquarie Perch within the Project Area. Potential habitat occurs in the project area but the species is highly unlikely to be present due to numerous fish barriers in the subject watercourses. A precautionary approach has been taken and routine aquatic monitoring (including fish sampling) is being undertaken in the relevant watercourses.</p>	In Control	No Macquarie Perch have been identified within mining areas. Longwall mining does not occur below named streams where Macquarie Perch are found.	Continue monitoring fish habitat in the mining areas.
Monitoring Overview	6.1	<p>There are no records for either the Giant Burrowing Frog or Little Johns Tree Frog within the Project Area despite targeted surveys for these species. Marginal potential habitat exists within the Project Area but the species are unlikely to be present due to lack of preferred habitat. Accordingly, no targeted monitoring is proposed for these species unless unpredicted impacts occur or these species are detected.</p>	In Control	No EPBC listed threatened amphibian species have been recorded in the BSO project area.	Continue monitoring impacts in the mining areas.

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Monitoring Overview	6.1	Potential habitat for the Woronora Bearded Heath (<i>Leucopogon exolasius</i>) occurs within the Georges River but there are no records for this species within the Project Area despite survey completed for this species. Accordingly, no targeted monitoring is proposed for these species unless this species is detected in the project area.	In Control	Potential habitat for the Woronora Bearded Heath (<i>Leucopogon exolasius</i>) occurs within the Georges River but there are no records for this species within the Project Area despite survey completed for this species.	Continue monitoring impacts in the mining areas.
Table 6 Monitoring Summary for Macquarie Perch	6.1	Aquatic monitoring (including fish sampling) via the Appin Area 7 Longwalls 701 – 710 Extraction Plans (Biodiversity Management Plan). Refer Section 6.2, Figure 9 and Attachment B.	In Control	Monitoring plan in place.	Continue monitoring impacts in the mining areas.
Table 6 Monitoring Summary for Macquarie Perch	6.1	Aquatic monitoring (including fish sampling) via the West Cliff Area 5 Longwall 34 - 36 Extraction Plans (Biodiversity Management Plan). Refer Section 6.2, Figure 9 and Attachment C.	In Control	Monitoring plan in place.	Continue monitoring impacts in the mining areas.
Table 6 Monitoring Summary for Macquarie Perch	6.1	Aquatic monitoring (including fish sampling) via the Appin Area 9 Longwall 901-904 Extraction Plans (Biodiversity Management Plan). Refer Section 6.2, Figure 9 and Attachment D.	In Control	Monitoring plan in place.	Continue monitoring impacts in the mining areas.
Table 6 Monitoring Summary for Macquarie Perch	6.1	EPL 2504 Water quality monitoring (EPA Licence) for West Cliff, Appin East and Appin West Pit Top sites. Refer Section 6.2, Section 6.6 and Attachment G	In Control	As per EPL requirements	

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Table 6 Monitoring Summary for Macquarie Perch	6.1	General WQ monitoring of subsidence impacts under the Extraction Plans referred to above. EPL Georges River Environmental Improvement Program (including program to improve water quality and minimum flow requirements) - See https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/licenses/bulli-seam-georges-river-environmental-improvement-program.pdf?sfvrsn=f42f05e7_9	In Control	EIP revoked and replaced with the Georges River Aquatic Health Monitoring Program. Water quality monitoring is being undertaken in the BSO project area in line with the SMP, EP or EMP for each area or specific feature e.g. Georges River.	Continue monitoring in line with plans. Update Management Plan with new EPL monitoring program.
Table 6 Monitoring Summary for Macquarie Perch	6.1	Surface water (hydrological) monitoring via Extraction Plans referred to above. Refer Section 6.	In Control	Surface water monitoring plan in place.	Continue monitoring impacts in the mining areas.
Table 6 Monitoring Summary for Macquarie Perch	6.1	Monitoring of subsidence impacts via Extraction Plans referred to above.	In Control	Subsidence monitoring plan in place.	As above
Table 6 Monitoring Summary for Giant Burrowing Frog	6.1	Targeted monitoring may be initiated if relevant subsidence management TARPs reach level 3, triggering corrective management actions for terrestrial biodiversity. Refer to the relevant Extraction Plan.	In Control	TARPs are in place and reported, corrective actions as required.	TARPS have been reported and actioned as required.
Table 6 Monitoring Summary for Giant Burrowing Frog	6.1	Any individuals of this species discovered in the Project Area will be addressed by targeted monitoring that will be included in subsequent revisions of this Plan.	In Control	No individuals identified.	Continue monitoring impacts in the mining areas.
Table 6 Monitoring Summary for Littlejohns Tree Frog	6.1	Targeted monitoring may be initiated if relevant subsidence management TARPs reach level 3, triggering corrective management actions for terrestrial biodiversity. Refer to the relevant Extraction Plan.	In Control	No individuals identified.	Continue monitoring impacts in the mining areas.

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Table 6 Monitoring Summary for Littlejohns Tree Frog	6.1	Any individuals of this species discovered in the Project Area will be addressed by targeted monitoring that will be included in subsequent revisions of this Plan.	In Control	No individuals identified.	Continue monitoring impacts in the mining areas.
Table 6 Monitoring Summary for Leucopogon exolasius	6.1	Any individuals of this species discovered in the Project Area will be addressed in subsequent revisions of this Plan.	In Control	No individuals identified.	Continue monitoring impacts in the mining areas.

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<p>Aquatic Monitoring Programs</p>	<p>6.2.2</p>	<p>Currently aquatic monitoring is conducted across four programs relating to the current longwall mining areas (Appin Area 7, Area 9 and West Cliff Area 5) and monitoring under the Georges River Environmental Improvement Program required by EPL 2504. These programs are itemized below with references to further specific information attached to this document.</p> <ul style="list-style-type: none"> * Aquatic monitoring (including fish sampling) via the Appin Area 7 Longwalls 701 – 710 Extraction Plans (Biodiversity Management Plan). Refer Attachment B. * Aquatic monitoring (including fish sampling) via the West Cliff Area 5 Longwall 37 - 38 Extraction Plan (Biodiversity Management Plan). Refer Attachment C. Aquatic monitoring (including fish sampling) via the Appin Area 9 Longwall 901 - 904 Extraction Plans (Biodiversity Management Plan). Refer Attachment D. * Georges River Environmental Improvement Program (EIP). The EIP for the Georges River incorporates (Refer to Attachment E): <ul style="list-style-type: none"> - A program of works to improve the aquatic health of the River; - Quantitative sampling of macroinvertebrates; - Ecological assessment processes using DNA extracted from sediment; and - Water quality testing 	<p>In Control</p>	<p>Georges River Aquatic Health Program is in place.</p>	<p>Continue monitoring impacts in the mining areas.</p>
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Aquatic Monitoring Methods	6.2.3	<p>The following habitat features are recorded:</p> <ul style="list-style-type: none"> * in-stream features such as sequence of pools, runs and riffles; * stream substratum; * presence, type and extent of aquatic vegetation; * presence of barriers to fish passage into and beyond the study area; and * a photographic record of the habitat. 	In Control	Refer Georges River Aquatic Health Program methods.	
Aquatic Monitoring Methods	6.2.3	<p>Water quality will be measured at each site using a water quality probe. Variables to be measured include; pH, dissolved oxygen, oxidation-reduction potential, temperature, turbidity and conductivity. Where applicable, the results will be compared to ANZECC (2000) water quality guidelines for the protection of aquatic ecosystems.</p>	In Control	Georges River Aquatic Health Program is in place.	Update the Management Plan to reflect the revised monitoring program.
Aquatic Monitoring Methods	6.2.3	<p>Fish will be sampled using a back-pack electro fisher and baited traps. At each site, six baited traps are to be deployed in a variety of habitats such as amongst aquatic plants and snags, in deep holes and over bare substratum. The back-pack electro fisher is to be operated around the edge of pools and in riffles. At each site, four, two minute shots are to be performed. Fish are to be collected in a scoop net, identified and measured. Native species are to be released unharmed whilst exotics are not to be returned to the water.</p>	In Control	Georges River Aquatic Health Program has no requirement to monitor fish. This is only relevant to extraction plan monitoring.	Continue monitoring impacts in the mining areas.

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Aquatic Monitoring Methods	6.2.3	At each site macroinvertebrates will be sampled using the AusRivAS protocol developed under the National River Health Program. Where available, riffle and edge habitats will be sampled using a dip net along a 10m stretch of habitat. Samples will be sorted in the field, preserved in alcohol and transported to a laboratory for identification. Taxa will be identified to levels required for calculating SIGNAL2 values according to the AusRivAS protocol.	In Control	Monitoring plan in place.	Continue monitoring impacts in the mining areas.
Aquatic Monitoring Methods	6.2.3	Reports will be produced at the conclusion of each aquatic monitoring survey that provide sufficient information to describe the habitats and biota that may be affected by subsidence or mining discharges.	In Control	Refer to last EIP report on South32 website: https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/licenses/eip2-2020-report_final.pdf?sfvrsn=a813859a_6	Continue monitoring impacts in the mining areas.
Management Responses Monitoring Methods	6.2.4	If level 3 TARPs are triggered within potential Macquarie Perch habitat, Corrective Management Actions (CMAs) such as additional monitoring, habitat rehabilitation or other adaptive management measures will be considered.	In Control	No Macquarie Perch identified.	Continue monitoring impacts in the mining areas. Annual reports to be uploaded to the S32 web page.
Management Responses Monitoring Methods	6.2.4	Monitoring results will be reviewed by the ICHPL Subsidence Management Committee and determine whether performance indicators have been exceeded; and whether Corrective Management Actions (CMAs) are required.	In Control	Monthly meetings are conducted.	Continue with meetings and documentation.
Management Responses Monitoring Methods	6.2.4	If the findings of monitoring are deemed to warrant an immediate response the Manager Approvals will initiate the requirements of the TARP.	In Control	Actions are implemented as required and reported in the Monthly Subsidence Meeting Minutes.	Continue with meetings and documentation.

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Terrestrial Biodiversity Monitoring Methods	6.3.2	Terrestrial monitoring occurs over longwall mining areas (i.e. Appin Area 7, West Cliff Area 5 , and in the future Appin Area 9) and focuses on detecting significant changes to vegetation communities and fauna habitat present within the mining area and aims to ensure complete coverage across the Study Area. Specific targeted monitoring sites will be determined if justified (e.g. if threatened species populations, EECs or habitats are known and have more than a negligible potential to be impacted).	In Control	Monitoring plan in place.	Continue monitoring impacts in the mining areas. Annual reports to be uploaded to the S32 web page. Negligible impact to EECs, habitats or populations to date.
Terrestrial Biodiversity Monitoring Methods	6.3.2	Inspections of vegetation communities within the mining areas is undertaken as a part of routine landscape and water monitoring programs. Targeted inspection by a qualified ecologist will follow should vegetation health changes be observed.	In Control	No vegetation health changes detected to date.	Continue monitoring impacts in the mining areas.

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<p>Terrestrial Biodiversity Monitoring Methods</p>	<p>6.3.2</p>	<p>Monitoring will focus on detecting significant changes to vegetation communities and fauna habitat present within the Study Area and will aim to ensure complete coverage across the Study Area. Inspections of vegetation condition will assess the following: * Does the vegetation appear healthy? * Are there any detectable visual impacts (e.g. canopy thinning, thinning of shrub layer, loss of ground cover, dead branches present)? * Are there any significant detectable visual impacts (e.g. canopy loss with areas of dieback present, loss of whole shrubs, loss of ground cover)? * Areas of impact or any subsidence effects will be mapped and documented using digital photography. Where a significant visual impact is detected a qualified ecologist will be engaged to document the following: * The total area of impact. This will be mapped using a GPS and aerial photo interpretation; * The Foliage Percentage Cover (FPC); and * Modified Braun-Blanquet cover abundance scores</p>	<p>In Control</p>	<p>No vegetation health changes detected to date.</p>	<p>Continue monitoring impacts in the mining areas.</p>
<p>Terrestrial Biodiversity Monitoring Methods</p>	<p>6.3.2</p>	<p>This information will be used to objectively assess extent and degree of impact. Assessment of similar vegetation communities or fauna habitat within the broader locality will be undertaken to determine if the detected changes are within normal variation or represent a possible impact of mining. Additional studies (e.g. gas release measurements) will be commissioned in response to an observed mining impact to understand the mechanism involved and consider any Correct Management Actions (CMAs) that may be required</p>	<p>In Control</p>	<p>No vegetation health changes detected to date.</p>	<p>Continue monitoring impacts in the mining areas.</p>

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Terrestrial Biodiversity Monitoring Methods	6.3.2	Impacts are to be monitored as a part of ongoing observations to determine any change in extent or degree.	In Control	No vegetation health changes detected to date.	Continue monitoring impacts in the mining areas.
Terrestrial Biodiversity Monitoring Methods	6.3.2	The typical frequency of terrestrial biodiversity monitoring is: <ul style="list-style-type: none"> * Two baseline monitoring campaigns 1 year prior to mining; * During mining, (as part of Landscape Features Monitoring) monthly visual inspections, increased to weekly inspections during critical periods; * Post mining, (as part of Landscape Features Monitoring) 6 monthly monitoring for two years; * General observation of active mining areas during all 	In Control	No vegetation health changes detected to date.	Continue monitoring impacts in the mining areas.
Terrestrial Biodiversity Monitoring Methods	6.3.2	Illawarra Coal will implement remediation measures where impacts to vegetation communities or fauna habitat are deemed to be caused by subsidence effects.	In Control	Georges River Rehabilitation Plan has been approved by DPIE and the Resources Regulator. Additional approvals will be sought to undertake the remediation, as per the plan.	Execute the Georges River Rehabilitation Plan, once all necessary approvals in place.
Monitoring methods for <i>Leucopogon exolasius</i>	6.4.2	Standard monitoring will be conducted as per Section 6.3.2. Any future targeted monitoring for this species may include (but not be limited to): <ul style="list-style-type: none"> * Fixed photo points. * Fixed vegetation quadrats. Data collected from each quadrat may include species richness, community structure and composition, vegetation condition, mortality and recruitment, the presence of soil profile development (leaf litter, presence/absence of invertebrates). * Random meander transects in targeted monitoring areas in order to identify recruitment 	In Control	<i>Leucopogon exolasius</i> not identified in monitoring program.	Continue monitoring impacts in the mining areas.

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Water Monitoring Overview and Context for EPBC Listed Species	6.5.1	Surface operations (that release discharges) are monitored and managed via the surface operations management plans and site specific plans as shown in diagram 1.	In Control	Refer to BSO Surface Water MP, West Cliff Coal Wash Emplacement MP and Georges River Aquatic Health Monitoring Program on the company website	
Water Monitoring Overview and Context for EPBC Listed Species	6.5.1	Longwall mining areas are addressed through specific Extraction Plans (and their constituent Water Management Plans) for each mining area.	In Control	Extraction plans/SMPs for Area 7 and 9 are on South32 website. https://www.south32.net/our-business/australia/illawarra-metallurgical-coal/documents	
Water Monitoring for Potential Impacts from Mining Induced Subsidence	6.5.2	Extractions Plans with detailed monitoring programs are submitted on a progressive basis as mining commences in each mining domain. Currently, detailed Extraction Plans (or Subsidence Management Plans) are approved for: * Appin Area 7 Longwalls 701 – 710 (Refer Attachment B); * West Cliff Area 5 Longwall 34 – 38 (Refer Attachment C).	In Control	Approved monitoring plan in place.	Continue monitoring impacts in the mining areas.
Water Monitoring for Potential Impacts from surface Operations	6.5.3	Potential impacts from Project surface operations are monitored and managed via the surface operations management plans and site specific plans (shown in Diagram 1) and EPL2504 (Attachment G).	In Control	Refer to BSO Surface Water MP, West Cliff Coal Wash Emplacement MP and Georges River Aquatic Health Monitoring Program on the company website .	
Water Monitoring for Potential Impacts from surface Operations	6.5.3	EPL 2504 regulates, among other things, the discharge of water from the surface operations into receiving waters. Quantified limits are currently stated in EPL 2504 for a range of parameters. These limits are effectively the surface water quality performance indicators for this Management Plan as they are aimed at maintaining suitable water quality to support downstream aquatic habitat for species such as Macquarie Perch.	In Control	EPL2504 is in place.	

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Monitoring Parameters and Performance Indicators	6.5.3	Monitoring is conducted monthly	In Control	Monthly samples are collected as required by EPL2504	
EPL Reporting	6.5.3	The specific requirements for the publication of EPL monitoring results are set out in section 66(6) of the POEO Act. In summary, this provision requires that licensees who undertake monitoring as a result of a licence condition must publish or make available monitoring data that relates to pollution within 14 days of obtaining the data and/or receiving a specific request for a copy of the data	In Control	Results are reporting online via the 14 day monitoring report https://www.south32.net/our-business/australia/illawarra-metallurgical-coal/documents	
EPL Reporting	6.5.3	In addition to the above, an Annual Return is submitted to the NSW EPA as required by the EPL. The licence sets specific dates for PRP completion.	In Control	The 2019/20 Annual Return was submitted as required.	
Reporting	6.6	Operational and environmental performance of the BSOP is provided through the: * Compliance Report (required under Clause 14 of the EPBC Approval (EPBC 2010/5350) attached to the Annual Review (required under Condition 4, Schedule 6 (of the NSW DoPI BSOP Approval); * End of Panel Reports; and * Annual Review.	In Control		
Reporting	6.6	Reports are available on the South32 website. The Annual Review and Compliance Report will be provided to DoEE.	In Control	Annual review was provided to the Department end of Sept 2019. The 2020 Annual Review will be submitted as required in September 2020.	Submit 2020 Annual Review to the Department as per requirement

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Reporting	6.6	In accordance with Condition 7, Schedule 6 (of the NSW DoPE BSOP Approval), ICHPL is to notify the Director-General of DoPE and relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. Within seven days of the date of the incident, ICHPL is to provide the Director-General and relevant agencies with a detailed report on the incident.	In Control	Not triggered on the operational mine sites or mining area.	Continue monitoring impacts in the mining areas.
Summary of Performance Measures	7.1	The implementation of remedial or adaptive management measures would be assessed through the results of the Extraction Plan monitoring programs, EPL (surface water discharge) monitoring and additional detailed assessments as required.	In Control	Georges River Remediation Plan (not yet approved by agencies) & Georges River Aquatic Health Monitoring Program. GRAHMP is on South32 website: https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/licenses/georges-river-aquatic-health-monitoring-program-(2020).pdf?sfvrsn=fab0c7b1_4	
Summary of Performance Measures	7.1	In the event the Performance Measures detailed in Table 9 Adopted Performance Measures for Macquarie Perch (based on BSO Project Approval) of this Plan are considered to have been exceeded, or are likely to be exceeded, Illawarra Coal will implement a Contingency Plan (refer Section 8) to manage any unpredicted impacts and their consequences. Such an exceedance would normally represent a Level 3 TARP for surface water quality, flow or aquatic habitat being triggered.	In Control	No Macquarie Perch identified to date.	Continue monitoring impacts in the mining areas.

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Adaptive Management Options - Mine Planning	7.2.1	If impacts exceed performance measures, adaptive management techniques will be considered, such as seeking variations to adjustment the length of planned longwalls. This has been implemented in the past for Longwall 34 in West Cliff Area 5 where Level 2 impacts were identified from Longwall 33.	In Control	No performance measures exceeded. Georges River Rehabilitation Plan has been approved by DPIE and the Resources Regulator.	Execute the Georges River Rehabilitation Plan, once all necessary approvals in place.
Active Flow Management	7.2.2	During no or low rainfall periods the flow in the Georges River is largely determined by the volume of water discharged via Licensed Discharge Point 10 from Brennan's Creek Dam and from Appin East. If the Level 2 trigger for minor cracking leading to a reduction in pool water level is observed, then additional flow can be released from Brennans Creek Dam and/or Appin Colliery to ensure pool water levels are maintained.	In Control	Supplementary flows are and have been provided via Brennans Creek Dam. The EPA and Georges River Stakeholder Group is regularly advised and where required, consulted on the discharge from BCD.	
Water Quality and Discharge Management	7.2.3	Where low water quality is identified to be resulting from mining induced subsidence or surface discharges this exceeds relevant TARPs , consideration of appropriate CMAs will be undertaken with relevant stakeholders. Any CMA will be highly dependent on the parameter being exceeded and technical feasibility of interventions.	In Control	No performance measures exceeded. Georges River Rehabilitation Plan has been approved by DPIE and the Resources Regulator.	Execute the Georges River Rehabilitation Plan, once all necessary approvals in place.
Natural Remediation	7.2.4	While sealing of surface fractures will occur naturally in some instances and over time, it is recognised that this may not provide sufficient mitigation in some situations and that active sealing of the streams may be required in some locations.	In Control	Condition not yet triggered	
Hand Mortaring	7.2.5	Should large fractures occur in the base of the pools they may be sealed over with hand placed cement grout and natural oxides.	In Control	Georges River Rehabilitation Plan has been approved by DPIE and the Resources Regulator.	Execute the Georges River Rehabilitation Plan, once all necessary approvals in place.

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Injection Grouting	7.2.6	These rehabilitation operations have the potential to cause adverse environmental impacts through the materials used and the disturbance associated with access and would be carefully planned to avoid contamination of watercourses. Bunds will be used to contain any spillage at mixing points. The materials used in these processes are non-toxic, environmentally inert and do not significantly impact upon the natural habitats of aquatic species.	In Control	Georges River Rehabilitation Plan approved by DPIE and the Resources Regulator incorporates these requirements.	
Surface Treatment	7.2.10	Where cracking develops in significant areas and natural sealing is not progressing, the cracks may require forking over and compacting to prevent subsequent erosion. Larger cracks may require more work to repair them, for example, mulch or other protection to prevent the development of erosion channels. Surface protection will remain in place until revegetation covers the disturbed area. In some cases, if the cracks are wider they may require gravel or sand filling up to surface level and revegetation using local native plants. Such rehabilitation measures have the potential to cause impact through the materials used and the disturbance associated with access. Considerable care and relevant approvals will be obtained to ensure the protection of the environment as such works are implemented.	In Control	No significant cracks have been observed that require remediation to prevent erosion. Fracturing in Georges River is covered by above sections 7.2.5 and 7.2.6	
Gas Releases	7.2.11	Where vegetation is impacted by gas releases the areas affected will be revegetated once monitoring determines the gas releases have ceased or reduced to an extent that vegetation is no longer affected.	In Control	No vegetation health changes detected to date.	Continue monitoring impacts in the mining areas.

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Gas Releases	7.2.11	Where low DO is identified to be resulting from mining induced gas release and this exceeds TARPS, consideration of appropriate CMAS will be undertaken with relevant stakeholders.	In Control	No CMAs have been required as a result of low DO from gas release zones. Consideration includes agencies and specialist consultants.	Continue monitoring impacts in the mining areas.
Contingency and Response Plans	8	<p>In the event the Performance Measures pertaining to Macquarie Perch or other EPBC listed species detailed in Section 7 of this Plan are considered to have been exceeded, or are likely to be exceeded, Illawarra Coal will implement a Contingency Plan to manage any unpredicted impacts and their consequences.</p> <p>This would involve:</p> <ul style="list-style-type: none"> * Capture photographic record if appropriate; * Notify relevant stakeholders soon as practicable; * Notify relevant agencies and specialists as soon as practicable; * Conduct site visits with stakeholders as required; * Contract specialists to investigate and report on changes identified; * Provide incident report to relevant agencies; * Review monitoring and implement additional monitoring if required; * Inform relevant agencies and stakeholders of results of investigation; * Develop site Corrective Management Action (CMA) in consultation with key stakeholders if required and seek approvals; * Implement CMA as agreed with stakeholders following approvals; * Conduct initial follow up monitoring and reporting following CMA completion; * Review Management Plan; * Report in regular reporting and Annual Review 	In Control	No Macquarie Perch identified to date.	Continue monitoring impacts in the mining areas.

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Contingency and Response Plans	8	Illawarra Coal will consult with appropriate specialists and relevant agencies in order to devise an appropriate response in respect to any identified exceedance.	In Control	No exceedance to date.	Continue monitoring impacts in the mining areas.
Contingency and Response Plans	8	The development and implementation of contingency measures will be designed to address the specific circumstances of the exceedance and assessment of environmental consequences.	In Control	No exceedance to date.	Continue monitoring impacts in the mining areas.
Contingency and Response Plans	8	If the contingency measures implemented by Illawarra Coal fail to remediate or mitigate the impact or the Director-General determines that it is not reasonable or feasible to remediate the impact Illawarra Coal will provide a suitable offset to compensate for the impact to the satisfaction of the Director-General of DoPE (or DoEE as appropriate), in accordance with the BSO Approval Condition 2 Schedule 3.	In Control	No exceedance to date.	Continue monitoring impacts in the mining areas.
Contingency and Response Plans	8	All incidents will be reported internally through Illawarra Coal's Incident Procedure and related records will be maintained in accordance with the Records Management Procedure.	In Control	No incidents to date.	Continue monitoring impacts in the mining areas.
Performance Improvement	9	As part of the Statement of Commitments prepared for the BSO Project Environmental Assessment, Illawarra Coal committed to implement "research, offset and compensatory measures for Project impacts on water quality and ecological aspects" with the aim of continual performance review and improvement. The annual review process will also formalise opportunities for improvement based on the monitoring data.	In Control	As per Persoonia Offset and research. Georges River Aquatic Health Monitoring Program and future installation of a water filtration plant at Appin North and Water filtration plant upgrades at Appin West.	

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Auditing	9.1	<p>Each site has an independently certified Environmental Management System (EMS). Illawarra Coal EMS Team meets on a regular basis to develop, implement and improve the EMS. An on-going audit program is implemented in accordance with the schedule outlined in Table 10.</p> <p>The results of monitoring and auditing are regularly reported through to the senior management team to ensure that action items are addressed.</p>	In Control		
Independent Audit under EPBC Approval	9.2	<p>An independent Environmental Audit of the environmental performance of the BSO Project will be undertaken by December 2013 and every three years thereafter. The proposed audit scope, lead auditor and audit team will be sent to the Minister for endorsement.</p>	In Control	Audit completed late 2019.	
Plan Review and Annual Reporting	10	<p>This Management Plan will be reviewed and if necessary revised, within 3 months, of:</p> <ul style="list-style-type: none"> * the submission of an annual review and compliance report if any modifications are required; * the submission of an independent Environmental Audit report if any modifications are required by the audit; or * any modification to relevant Project approval conditions (unless the conditions require otherwise). 	In Control	Plan was last reviewed and reapproved in Aug 2018 (note: plan was submitted June 2017, then resubmitted 1 Aug 2018. Approval granted 29 Aug 2018.	

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Annual Plan Reporting to the Minister	10.2	Annual reporting will be undertaken as per Condition 14 of the BSO Project EPBC Act Approval (EPBC 2010/5350) which requires the proponent to: Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the department at the same time as the compliance report is published.	In Control	Annual report will be submitted in accordance with the conditions.	
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 West Cliff Coal Wash Emplacement Area Management Plan
 WCPMP0019
 Management Plan Version 5

AUDIT REVIEW			Compliance	Comment & Evidence	Proposed Action
Section	MP Ref.	Requirement / Obligation			
Objectives	Page 4	Emplacement construction and operations will be conducted in accordance with the detailed design plans prepared for each emplacement phase. Due to the long life of the emplacement detailed final design details are prepared progressively and are therefore not outlined in this plan for Stage 4. Emplacement of coal wash in Stage 3 is currently underway. The Stage 4 coal wash emplacement is scheduled to commence in approximately 10-15 years. This Plan will be updated and re-submitted for approval once the design details are available for Stage 4.	In Control	Detailed design plans are not yet available. Stage 4 construction is still some time away.	
Emplacement Design and Staging	Page 9	The maximum design parameters for Stage 3 are: * No more than 60.5 ha of native vegetation to be cleared	In Control	Area cleared to date for Stage 3 is ~40Ha	
Emplacement Design and Staging	Page 9	he maximum design parameters for Stage 4 of the emplacement design are: * Volume of 26Mt; * Height of 331 m AHD; * Footprint that retains the existing Brennans Creek Dam storage capacity and stockpile areas (refer Figure 2 attached); and * Maximum of 60ha of native vegetation clearance.	In Control	Detailed design plans are not yet available. Stage 4 construction is still some time away.	

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West Cliff Coal Wash Emplacement Area Management Plan

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<p>Emplacement Design and Staging</p>	<p>Page 9</p>	<p>Measures to limit the clearing of native vegetation to no more than 60 Ha will include: * Survey and demarcation of the stage 4 boundary prior to construction works by a qualified surveyor; * Stage 4 boundary will be clearly outlined on site plans and plans will be provided to clearance contractors; * Pre clearing survey will be undertaken by Environment Officer who will be trained appropriately in survey methodology (Training provided by external consultancy). The area to be cleared will be clearly demarcated with flagging tape. Boundary markings will be placed in a way to ensure that each marker is within line of sight.</p>	<p>In Control</p>	<p>Detailed design plans are not yet available. Stage 4 construction is still some time away.</p>	
<p>Emplacement Design and Staging</p>	<p>Page 10</p>	<p>The Stage 3 valley will be filled in a north westerly direction and the Stage 4 from the eastern (or upstream/upslope) boundary and progress in Corridors westwards down the valley, as required by EPBC Project Approval Condition 6 (d)</p>	<p>In Control</p>	<p>As verified on Arc GIS. Stage 3 is progressing in NW direction</p>	
<p>Emplacement Design and Staging</p>	<p>Page 10</p>	<p>Coal wash will be deposited in benches across the valley (in the case of Stage 4 which will be north-south) and progressively down the valley from east to west.</p>	<p>In Control</p>	<p>Stage 4 not yet commenced. Stage 3 is being deposited in benches across the valley</p>	
<p>Emplacement Design and Staging</p>	<p>Page 10</p>	<p>As each section of fill reaches the designed height, it is top soiled and revegetated. The final landform created by the emplacement will be in sympathy with the regional morphology and will be largely masked from public view by the visual screening of existing eucalypt forest.</p>	<p>In Control</p>	<p>Morphology is as per approved design plans. The completed emplacement is topsoiled and revegetated progressively.</p>	

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Emplacement Design and Staging	Page 10	Emplacement construction and operations will be conducted in accordance with the final detailed engineering drawings prepared for each emplacement. The Stage 3 and 4 final landform concept designs are illustrated on plan 2 - stage 3 Final Emplacement Design (Concept) and plan 3 - stage 4 final emplacement design (concept).	In Control	Desktop review on Arc GIS suggests the Stage 3 construction is consistent with the design plans.	Formalise a process to audit emplacement progress against the design plans - Action from last review.
Emplacement Design and Staging	Page 10	The engineering drawings for the Stage 4 Emplacement will be prepared prior to implementation of the Stage 4 Emplacement and these plans will show staging of the emplacement will comply with Condition 17 (a) and (b) of the BSO Project Approval and Condition 6(b) of the EPBC Act Approval.	In Control After Action Close-out	To be incorporated into the Stage 4 design plans when available	Design plans to comply with Condition 17 (a) and (b) and Condition 6 of the EPBC approval
Emplacement Design and Staging	Page 10	plan 4 - Stage 4 emplacement staging sequence (concept) shows a preliminary concept staging plan that provides for the progressive staging of the Stage 4 coal wash emplacement to keep the minimum 100 m wide habitat corridor to link the Persoonia hirsuta core population with habitat north of the Stage 4 coal wash emplacement area, as required by Condition 6(b) of the EPBC Act Approval.	In Control After Action Close-out	To be incorporated into the Stage 4 design plans when available	Design plans to comply with this Condition
Emplacement Design and Staging	Page 10	The Stage 4 Design Plans (once approved by the DOTEE Minister) will be implemented and remain in place for at least 10 years at which point a revised plan taking into account the monitoring referred to above must be submitted to and approved by the Minister.	In Control	Condition not triggered. Stage 4 design plans are not yet initiated	

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Haul Road Design	Page 12	Construction of coal wash haul roads associated with the emplacement are to be carried out in accordance with this management plan. Minimum Road Width: Minimum road pavement widths for coal wash haul roads associated with the emplacement area are to be no less than 15 m along curved and straight sections. Maximum Grade: Any Haul road with a grade greater than 1-9 grade = 11%	In Control After Action Close-out	Requires in field verification	In-field verification required
Haul Road Design	Table 3	A Risk Assessment is to be conducted to identify all the requirements that are to be put in place before operating on 11% to 20% grades.	In Control After Action Close-out	Requires in field verification	In-field verification required
Haul Road Design	Table 3	Risk assessment is to be conducted and approval obtained from the WCP Operations Superintendent (planned to operate for more than 12 months) for grades greater than 20%	In Control After Action Close-out	Requires in field verification	In-field verification required
Horizontal Curve Dimensions	Page 13	Sharp horizontal curves will be avoided at or near hill crests, at the bottom of hills, and after long sustained downgrades; If passing will be required, sections of haul road will be designed with long tangents and constant grades; Intersections will be avoided at the crest of vertical and/or sharp horizontal curves; and <i>Tight curves will be avoided as a matter of course.</i>	In Control After Action Close-out	Requires in field verification	In-field verification required
Vertical Curve Dimensions	Page 13	Coal wash haul roads associated with the emplacement are to be designed and constructed to a minimum vertical curve radius of 1500m and a minimum vertical curve length of 150m.	In Control After Action Close-out	Requires in field verification	In-field verification required
Construction of Brennan's Creek Diversion Channel	Page 13	Progressive rehabilitation of the Brennans Creek Diversion Channel will be undertaken in accordance with the approved Brennans Creek Bypass Channel Rehabilitation Plan.	In Control	Diversion channel (within channel) has been rehabilitated.	Refresh operational personnel on the requirements of the rehabilitation plan

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Erosion and Sediment Control Measures for Clean Water Cut off Drains	Page 13	The drains are positioned to capture clean water runoff from valley sides and divert it past the emplacement dirty water catch pond system and essentially into BCD.	In Control		
Erosion and Sediment Control Measures for Clean Water Cut off Drains	Page 13	The drains are to be sized as required for the catchment area. Excavated material will be placed beside the drains to form access tracks in the valley for construction of catch ponds and development of the emplacement.	In Control		
Erosion and Sediment Control Measures for Clean Water Cut off Drains	Page 13	The channels will be modified as necessary during the life of the emplacement to adapt to the changing runoff conditions created by the advancing emplacement.	In Control		
Construction of Emplacement Subsoil Drainage Network	Page 14	Subsurface drains will be installed on the prepared active emplacement area under engineering supervision before coal wash emplacement commences. Construction of the subsurface drains shall be installed in accordance with detailed engineering drawings. Subsurface drains will be progressively linked to subsoil drainage from previous sections of the emplacement.	In Control After Action Close-out	Requires in field verification	In-field verification required
Construction of Emplacement Catch Ponds	Page 14	The emplacement area is to be served by two sequential catch ponds sited down Brennans Creek valley. As each phase approaches completion, and filling of the first catch pond is imminent, a new catch pond will need to be constructed and so on.	In Control After Action Close-out	Stage 3 emplacement is approaching Emplacement Pond 2	Review current storage vs catchment requirements given Stage 3 is progressing towards Pond EP2.

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<p>Construction of Emplacement Catch Ponds</p>	<p>Page 14</p>	<p>Clean water cut-off drains will be established prior to construction of catch ponds and flows in Brennans Creek will be diverted around the construction area via temporary dam and pump. This will prevent sediment contamination of clean water from surrounding clean water catchment and treated water from upstream emplacement catch ponds. Catch pond dam walls will be constructed using site won material excavated from an appropriate area onsite (most likely excavated material from base of dam storage area or areas being prepared for active emplacement). Where possible dam wall fill material will be transported directly to construction however it may be necessary at times for this material to be temporarily stockpiled until required.</p>	<p>In Control</p>		
<p>Erosion and Sediment Control Measures for Emplacement Catch Ponds</p>	<p>Page 15</p>	<p>Each phase of the West Cliff Emplacement area is to be served by two sequential catch ponds sited down Brennans Creek valley. The 1st (upstream) pond will enable passive settling of particles, while the 2nd pond will be chemically dosed to remove fine particulates from the water column.</p>	<p>In Control</p>	<p>Stage 3 emplacement is approaching Emplacement Pond 2</p>	<p>Review current storage vs catchment requirements given Stage 3 is progressing towards Pond EP2.</p>
<p>Erosion and Sediment Control Measures for Emplacement Catch Ponds</p>	<p>Page 15</p>	<p>Each catch pond system must be operational prior to commencement of coal wash emplacement in its catchment area. As each phase approaches completion and filling of the first catch pond is imminent, a new catch pond is to be constructed downstream, prior to the emplacement encroaching on the upstream pond. Catch pond dam walls will be constructed using site won material excavated (sandstone, coal wash or other appropriate material) from prepared active emplacement areas or other suitable areas.</p>	<p>In Control</p>	<p>Stage 3 emplacement is approaching Emplacement Pond 2</p>	<p>Review current storage vs catchment requirements given Stage 3 is progressing towards Pond EP2.</p>

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Preparation of Active Emplacement Areas	Page 15	Preparation of active emplacement areas will take place progressively as the emplacement advances down Brennans Creek Valley.	In Control	As per emplacement management plan rehabilitation program	
Preparation of Active Emplacement Areas	Page 15	The area of land cleared and dedicated as the active emplacement area will be restricted to an operational size of 18 ha (where practical with a maximum of 21ha) in order for the catch ponds to effectively treat surface flows.	In Control	As per last desktop review, active emplacement area is within limits	
Preparation of Active Emplacement Areas	Page 15	In general, stripped topsoil will be placed on finished emplacement areas and stripped sandstone/bedrock will be used onsite for emplacement catch pond dam wall construction. This may require temporary stockpiling of stripped topsoil and sandstone material and appropriate mitigative measures will be undertaken to minimise the effects of erosion and sediment runoff. Stage 4 of the emplacement has a design footprint of 59.4ha as shown in plan 3 - stage 4 final emplacement design (concept).	In Control	As per emplacement management plan rehabilitation program	

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Veg and Topsoil Removal	Page 16	All vegetation including shrubs, trees and roots shall be cleared from the active emplacement area using the two-stage clearing process before coal wash emplacement commences. Loose vegetation from site clearing, such as tree branches, shall be used as mulch or brush matting over areas of the emplacement being rehabilitated. Soil will be stripped from areas cleared for coal wash emplacement and where practicable, the seed rich surface layer of topsoil shall be separated from lower level soils. Stripped soil will be applied to a depth of typically 0.5m (where appropriate) over completed areas of the emplacement as soon as practical. When seed rich topsoil stripped from cleared areas is available it will be spread as the surface layer on emplacement areas being rehabilitated. Seed rich topsoil is to be reused as quickly as possible to prevent seeds from dying.	In Control	As per emplacement management plan rehabilitation program	
Veg and Topsoil Removal		It is noted that when the emplacement is progressing to its final stages, particular attention must be paid to stockpiling the necessary volumes of soil to ensure adequate soil cover is achieved during rehabilitation of the final landform.	In Control After Action Close-out	A Biodiversity Risk Assessment was completed Apr 2020 which looked at "topsoil Deficit" and identified actions to reduce the risk of a topsoil shortfall.	Incorporate topsoil stockpiling into the design planning for Stage 4 (include a topsoil inventory for Stage 4). Investigate other options for sourcing alternative material.
Emplacement of coal Wash in Active Emplacement	Page 16	Active emplacement areas will be revegetated as soon as possible after the final emplacement design level has been reached.	In Control	Rehabilitation undertaken progressively	

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Coal Wash Transportation	Page 17	<p>The following procedures must be adhered to with regard to transportation of coal wash associated with the emplacement operations:</p> <ul style="list-style-type: none"> * Coal wash shall be transported in trucks on the mine site; * Coal wash trucks shall be restricted to designated haul roads on the mine site; * The coal wash haul roads shall be designed in accordance with the haul road design guidelines in this management plan; * Coal wash haul roads must drain to contaminated water catchments and contain standard berms; * Coal wash haul roads must be maintained to minimise airborne dust; * Only dump trucks shall be permitted on the emplacement area. Semi-trailers shall only be permitted on areas of the emplacement that have been specially prepared for their access; * Dump trucks will be speed restricted to an appropriate speed to meet the site requirement. * All haul trucks must adhere to site speed limits to maintain operational safety and minimise dust impacts; 	In Control		Requires in-field verification
Coal Wash Transportation	Page 17	<p>Coal wash transport will comply with the safety and operational conditions of the West Cliff Surface Transport Management Plan (Document Number: WCPMP0012), Stockpile and Slope Stability Management Plan (Document Number: WCPMP0001), and the Road Maintenance Manual (Document Number: WCPM0004).</p>	In Control		

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Coal Wash Tipping	Page 17	<p>A tipping area will be provided on each active coal wash bench for haul trucks to tip their loads onto the bench. There are currently 5 different materials which are required to be placed in a controlled manner into the emplacement. The tipping areas must be set up to handle all 5 materials each of which have different characteristics:</p> <ul style="list-style-type: none"> * Dendrobium Coal Wash; * West Cliff Coal Wash; * Belt Press fines ex the West Cliff Washery; * Oversize Stone (Big Rock) ex the West Cliff Washery; <p>and</p>	In Control		Requires in-field verification
Coal Wash Tipping	Page 17	<p>Inspections and records are of the following checks including:</p> <ul style="list-style-type: none"> * Adequate areas and lighting for night time operations; * Berms in place; * Signage marking tip areas; * Allowance for drainage; * Surfaces suitable for dump trucks and other approved surface mobile equipment; and * Surfaces suitable for Tankers around Sludge dams 	In Control After Action Close-out		To be verified
Coal Wash Tipping	Page 18	<p>The Contract Supervisor for the emplacement operations is responsible for ensuring these inspections are undertaken. The adequacy of these inspection records will be periodically (annual) audited by Illawarra Coal personnel.</p>	In Control After Action Close-out		To be verified
Coal Wash Drying	Page 18	<p>If the moisture content of coal wash delivered to the emplacement area is too high for satisfactory compaction it will be left to dry naturally until suitable moisture content for compaction is reached.</p>	In Control		Requires in-field verification

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Coal Wash Drying	Page 18	Coal wash slimes/fines will be tipped into shallow temporary drying basins (i.e. sludge ponds) constructed with coarse coal wash. Temporary drying basins will be carefully located on the emplacement area well away from the embankment face and perimeter drains. No surface drainage will be permitted to enter a temporary drying basin.	In Control		Requires in-field verification
Compaction	Page 18	Coal wash will be spread from tipped heaps in layers typically no greater than 0.5 m thick and compacted with vibratory rollers. Fine coal wash will be combined with coarse coal wash in the spreading and compaction operation. Coal wash slimes/fines from temporary drying basins will be placed and compacted into the emplacement in a similar manner to fine coal wash.	In Control		Requires in-field verification
Compaction	Page 18	The Emplacement Supervisor manages the deposition of coal wash and is required to balance available areas for deposition, volumes and material types and compaction results.	In Control		Requires in-field verification
Compaction	Page 18	The developing emplacement benches shall be graded back into the valley to prevent surface water flowing over the front batter of the bench.	In Control		Requires in-field verification
Compaction	Page 18	The compaction testing is to be carried out 10 times per year with each testing campaign comprised of at least 5 representative samples. The compaction testing will test for Standard Maximum Dry Density (SMDD) and the results compared with a compaction criterion of 95% Standard Compaction. The tests are to be carried out by a Geotechnical consultant at test locations selected by the Contract Supervisor for the emplacement operations.	In Control	Records of compaction tests are maintained by the emplacement contractor.	

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Compaction	Page 18	A record of the test results and locations of where they have been taken shall be maintained in Documentum.	In Control After Action Close-out	Records of compaction tests are maintained by the emplacement contractor.	Maintain records in a South32 approved system
Bench Heights	Page 18	Coal wash deposition will progress in a series of filled horizontal benches until each active emplacement area reaches its finished height. Coal wash benches will extend down the valley in a repetitive sequence of tipping, spreading, and compacting. Coal wash material that is too wet to be emplaced immediately will be placed in drying ponds, which will be located within the emplacement footprint	In Control	As per standard process	Requires in-field verification
Bench Heights	Page 19	Coal Wash deposition in the valley shall commence at the lower end of the prepared “active emplacement area” and progress in a series of filled horizontal benches until the emplacement reaches the finished height. Coal Wash shall be deposited on the benches and compacted in layers of up to 0.5 meters thick as shown in Figure 1.	In Control	As per standard process	Requires in-field verification
Bench Heights	Page 19	The developing benches will be graded back into the valley to prevent surface water flowing over the front batter of the bench and operations will generally aim to maintain coal wash benches with a 30 m lift as outlined in Figure 1.	In Control		Requires in-field verification

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Bench Heights	Page 19	<p>The vertical height of a bench is measured at its highest point or crest and at the bench toe. A bench is established in 4 distinct stages and must be built with the materials natural angle of repose forming the maximum angle or slope. Any under-cut which increases this angle must be avoided and rectified before tipping can proceed on top of the bench. The procedure for constructing the benches is as follows:</p> <ul style="list-style-type: none"> * Each layer of coal wash is pushed off with the dozer; * Depending on material type and compaction already achieved, a vibratory roller is used to further compact the coal wash; * Edges of the bench are further rolled providing increased compaction; * Surface gradient of the bench top is provided to facilitate quick water run off for rain events; and * Surface contour drains are provided at intervals and a new bench is started. The contour surface drains must have gradient which allows surface water to be discharged quickly. 	In Control		Requires in-field verification
Bench Heights	Page 19	<p>Best practice at the West Cliff Emplacement has limited bench heights to 30m. This height can only be exceeded following a formal risk assessment which involves suitably qualified personnel other than the contractor or persons normally supervising the work.</p>	In Control After Action Close-out		To be verified

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Bench Heights	Page 19	The surface shape of the emplacement area will be finished to blend with the surrounding landform (as per the approved final landform) and provide for non-eroding table drains to carry surface water runoff to the emplacement perimeter drains. Batter slopes on the finished emplacement will be constructed to non-eroding grades where practical in accordance with the approved finished profile design contours. This profile has been designed to a maximum grade of 1(V):3(H) to prevent erosion and sediment runoff. Suitable erosion control methods will be adapted as necessary.	In Control	The finished landform is as per approved design plans in the West Cliff Coal Wash Emplacement Area MP.	
Coal Wash Properties	Page 19	Coal wash deposited at the West Cliff emplacement is sourced from WCCPP and the Dendrobium Coal Preparation Plant (DCPP)	In Control		
Cultural Heritage Management	Page 21	Detailed design plans which include options for reducing, avoiding and/or managing impacts on Aboriginal heritage sites in and adjacent to the southwestern fringe of the proposed Stage 4 footprint (including sites 52-2-2228/3617, 52-2-1373, 52-2-3533/3613 and 52-2-3506);	In Control	Stage 4 not yet commenced	
Cultural Heritage Management	Page 21	Management strategies to ensure no impacts to Aboriginal heritage site 52-2-3505 other than negligible impacts, including consideration of potential staged development of the emplacement and/or buffer areas.	In Control	Emplacement is some years away from this location. The site is also buffered by the Brennans Creek Diversion Channel	
Management and Mitigation	Page 25	There are 13 cultural heritage sites within the West Cliff Colliery Site that will require some form of management. Refer to Table 5 Page 26	In Control	Cultural heritage is managed as per the approved plan	

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Management and Mitigation	Page 25	For sites located within the boundaries of the proposed Stage 4 Coal Wash Emplacement area, the proposed management approach is to conduct detailed recording and where appropriate archaeological salvage of a sample of occupation deposit. This strategy is consistent with that successfully employed for the Stage 3 Coal Wash Emplacement area.	In Control	Cultural heritage is managed as per the approved plan	
Management and Mitigation	Page 25	For sites avoided by the emplacement footprint, but located in close proximity, proposed management includes conducting detailed recording of the site prior to works in the vicinity, and demarcation of the site to minimize the potential for accidental impacts from mobile machinery working in the area.	In Control	Cultural heritage is managed as per the approved plan	
Management and Mitigation	Page 25	Detail and scheduling of these management strategies should be developed in consultation with the Aboriginal community through the AHP process.	In Control	Cultural heritage is managed as per the approved plan	
Veg and Fauna Management	Page 33	The unit of vegetation to be cleared will be surveyed (by a suitably trained Environmental Representative - training is provided by an external consultancy) and marked out using flagging.	In Control	Relevant site personnel have been trained	
Veg and Fauna Management	Page 33	Surveys of each unit will involve traversing the study area to locate record and mark specific habitat features that are proposed for preservation and redistribution to the emplacement (e.g. rocks and boulders, stags and large hollows).	In Control	Pre-clearance inspections are undertaken as required.	
Veg and Fauna Management	Page 33	Prior to any vegetation clearance occurring on site, specific details including the type and number of each habitat feature will be clearly recorded and identified on a pre-clearing checklist. Clearance will only occur following demarcation and survey by appropriately qualified personnel.	In Control	Pre-clearance inspections are undertaken as required.	

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Veg and Fauna Management	Page 33	The survey will identify appropriate candidate boulders and outcrop rock that could be translocated for habitat creation in revegetated areas. Boulders shall be placed on top of replaced soils (on top of Emplacement area) to recreate habitat for species dependent on rocky outcrops, such as the Broad-headed Snake.	In Control	Pre-clearance inspections are undertaken as required.	
Veg and Fauna Management	Page 33	During the pre-clearance survey, habitat features within each unit will be inspected in order to identify the need for any relocation of resident fauna species. Relocation of fauna will also involve the identification of capture and release methods and release areas for the relocation of fauna species prior to clearing.	In Control	Pre-clearance inspections are undertaken as required.	
Permit to Disturb	Page 33	Prior to any vegetation clearance occurring on site, a clearance permit is to be issued. Specific details including the type and number of each habitat feature will be clearly recorded and identified on clearance permits prior to issue. Clearance permits will only be issued following demarcation and survey by the Environmental Representative.	In Control	Pre-clearance inspections are undertaken as required.	
Permit to Disturb	Page 33	A post-clearing inspection will be undertaken by the site Environment Officer to verify the clearing was done in-compliance with the <i>Permit to Disturb</i> .	In Control	Pre-clearance inspections are undertaken as required.	
Permit to Disturb	Page 33	In the event that unapproved clearing goes beyond the emplacement boundary: <ul style="list-style-type: none"> * The incident will be reported to regulators in accordance with the BSO Approval Conditions * Incident will be logged via the Illawarra Coal Event Management System (Isometrix) * The disturbed area will be rehabilitated immediately * The incident will be reported in the BSO Annual Review 	In Control	Not triggered	

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Clearing Process - Timing	Page 34	Where possible, the timing of vegetation clearance of important habitat features will be between January and May to avoid the primary breeding and nesting periods of most hollow-dwelling species	In Control	The last emplacement clearing permit was issued in March 2020; however due to coal wash bench levels at the time machinery could not access the area safely to clear the vegetation prior to May. It is anticipated the site will be suitable for clearing in the latter half of 2020.	
Two-Stage Clearing	Page 34	Where possible, (i.e. where access to trees by the excavator is safe and practical), clearing of hollow bearing trees will be performed in a two stage process where surrounding vegetation is cleared separately, before the removal of habitat trees to allow fauna an opportunity to move.	In Control	Two stage clearing undertaken as required and as per requirements of the pre-clearing assessment report that is issued to the contractor before clearing can take place.	
Injured Animals	Page 35	The general practice of dealing with injured or captured fauna will be for the site operators to notify the site environmental representative who will arrange for fauna rescue or veterinary treatment. If the site environmental representative is not present when an injured or juvenile animal is found, the following steps will be implemented: Cover animal with a towel or blanket to minimise stress and place in an appropriate hessian or cloth bag. * Move animal to designated holding area. * Contact the local animal welfare group or veterinarian immediately.	In Control	Not triggered	
Stockpiling	Page 36	Vegetation shall be removed from the area in stages and stockpiled adjacent to the clearing.	In Control	Stockpiling is avoided where possible. Material is translocated directly to the rehabilitation areas.	

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Stockpiling	Page 36	Further seed collection from felled vegetation (especially trees) will be undertaken immediately post clearing. Rocks and logs are to be redistributed to the recipient sites (as per clearance permit). Large boulders and stags which require partial soil cover to be secured in place will be moved to the recipient sites prior to soil translocation.	In Control	Collecting seed from felled vegetation has not been required as the trees and vegetative material are translocated along with the soil and placed directly into the rehabilitation areas.	
Stockpiling	Page 36	Where practical soil stockpiling will be avoided and stripped soil layers will be immediately redistributed to the donor sites. Soils will not be stockpiled for long periods of time. Soil horizons will not be removed during or immediately following rain in order to minimise the composting process during stockpiling.	In Control	Stockpiling is avoided where possible. Material is translocated directly to the rehabilitation areas.	
Stripping of soil horizons	Page 36	Topsoil from the donor site will then be stripped from the surface in layers. The most valuable layer is the top 50 mm of soil which contains the majority of soil stored seed and propagules, plant nutrients and beneficial soil microbes. The top 50 mm of soil will be stripped and mixed with the cleared vegetation and stockpiled adjacent to or on the selected and pre-prepared recipient site ready for spreading.	In Control	As evidenced by the success of the rehabilitation process. See last Annual Report.	
Stripping of soil horizons	Page 36	Stripping and stockpiling of subsoil horizons will be undertaken depending of depth of bedrock. Where possible the depth of subsoil removal should exceed 500 mm. Subsoil layers will then be translocated to the recipient sites.	In Control		
Progressive Rehab	Page 36	Rehabilitation of the emplacement surface will take place progressively as each section of embankment fill reaches the finished level. Completed sections of the emplacement will be trimmed to even grades, and spread with approximately 0.5 m of soil.	In Control		

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Progressive Rehab	Page 36	Habitat reinstatement techniques such as transplanting dead stags, addition of habitat logs and woody debris, nest box use and installation reconstruction of rock outcrops will be undertaken as described in the following sections.	In Control		
Landform Design	Page 36	The surface of the emplacement will be reshaped in order to mimic micro-topographic features. Where possible, more natural concave slope profiles and slope angles will be used to limit the loss of sediment off the slope. The finished surface profile of the emplacement must be in accordance with the approved design contours (See plan 2 - stage 3 Final Emplacement Design (Concept) and plan 3 - stage 4 final emplacement design (concept)).	In Control	Desktop review on Arc GIS suggests the Stage 3 construction is consistent with the design plans.	
Translocation of Habitat and Soil	Page 36	To facilitate successful long term plant growth it will be necessary to avoid capillary rise of potential saline seepage from the coal wash. In order to avoid the potential for saline seepage (which can prevent seed germination and retard plant growth), the emplacement will be fully encapsulated by soil horizons to a depth of typically 0.5m where appropriate.	In Control	No evidence of capillary rise.	
Translocation of Habitat and Soil	Page 36	Subsoil horizons will first be spread over the allocated recipient sites on the Emplacement surface. Finally, the remaining 50 mm (topsoil) will be spread over on top.	In Control		

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Translocation of Habitat and Soil	Page 36	<p>Redistribution of Logs and Rocks on Recipient Sites</p> <p>All remaining stockpiles of rocks, logs and vegetation will then to be redistributed over the recipient site. Avoiding excessive soil compaction is crucial to maximising plant establishment and all traffic should be excluded from the translocated soil horizons once all materials have been spread on the surface. Habitat logs and coarse woody debris from the cleared vegetation will provide microhabitat for fauna and protection for emerging seedlings.</p>	In Control		
Translocation of Habitat and Soil	Page 36	<p>Transplanting Dead Stags</p> <p>Large hollow bearing trees are numerous within areas proposed for clearing. Selected large hollow bearing trees within each clearance compartment will be transplanted to areas within the rehabilitating emplacement to become standing dead trees (stags). Provision of these dead stags will provide fauna habitat which may otherwise take decades to form. The quantity of dead stags transplanted to the emplacement will aim to mimic the numbers originally present within the cleared compartments.</p>	In Control	Large stags are being identified during the pre-clearance inspections and placed within the rehabilitation areas	
Translocation of Habitat and Soil	Page 36	<p>Reconstruction of Rock Outcrops</p> <p>In order to provide suitable habitats for certain fauna species (especially reptiles), relocation of sandstone rock outcrops to the emplacement will be undertaken. The location of rock outcrops will account for the thermoregulatory requirements of reptile fauna by concentrating placement of boulders and exfoliating rocks on westerly aspects of emplacement.</p>	In Control	Rock outcrops are being constructed as required, however there is a need to focus on the western facing slopes as Stage 3 rehabilitation progresses. This has not been required as yet due to Stage 3 western slopes not yet ready for rehabilitation.	

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Translocation of Habitat and Soil	Page 36	Seeding Seed mixes should resemble the local vegetation types (Exposed Sandstone Scribbly Gum Woodland (ESSW) and Sandstone Gully Peppermint Forest (SGPF)) to supplement rehabilitation of the emplacement and associated areas. Seed will be harvested from areas of land to be cleared for coal wash emplacement where possible (although some outside purchase of seeds may be required) and spread over bare areas of the rehabilitating Emplacement area. Where required (i.e. in areas that remain without any, or indeed poor natural regeneration for a period longer than 6 months), supplementary planting of local provenance tube stock will be undertaken to ensure vegetation is progressively reinstated.	In Control	Seed is sourced from a contractor. It is not always possible to guarantee local seed due to availability in the local areas. Due to health and safety risks associated with seed collection on an active mine site, no seed is formally collected on the mine site and it hasn't been required due to seed being available elsewhere in the region. Supplementary planting has not been required to date.	
Translocation of Habitat and Soil	Page 36	Seeding in accordance with the prescribed species list in table 6	In Control	Seed list has been provided to contractor. Monitoring results suggests revegetation is compliant with the listing provided.	
Weed and Pest Management	Page 38	Weed and Pest management as per TARP Table 7.	In Control	Regular slashing has continued as required.	
Bushfire Management	Page 38	The bushfire management at the West Cliff Site will be reviewed once the current <i>Perosonia hirsuta</i> research project findings are completed (which includes ecological burning). The updated bushfire management for the site will also consider the fire ecology of all threatened species at the site.	In Control	Not triggered	
Rehab Phases, indicators and Completion Criteria	Page 38	Undertaken as per Table 8	In Control	See last Annual Report	
Emplacement Rehab Monitoring	Page 43	Biometric assessments are required annually, starting at 1 year after translocation.	In Control	See last Annual Report. Two additional plots were added to the monitoring program in 2019.	

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Emplacement Rehab Monitoring	Page 43	Surveys at control sites only required once every three years and the benchmarks as presented in this report remain so for the ensuing three year period.	In Control	Control sites last monitored in 2017 and due in Spr 2020.	
Emplacement Rehab Monitoring	Page 43	Photo point monitoring is required annually and done in conjunction with the above.	In Control	Photo points last monitored in 2019. See last Annual Report.	
Emplacement Rehab Monitoring	Page 43	Meanders for threatened plants are undertaken every three years.	In Control	Threatened plant meander last undertaken in 2017, due 2020.	
Emplacement Rehab Monitoring	Page 43	Fauna monitoring using camera traps is required annually, starting 5 years after translocation or as deemed appropriate depending on the maturity of the revegetation.	In Control	Fauna last monitored in Spring 2019. See last Annual Report	
Persoonia hirsuta management strategies	Page 43	The Stage 4 conceptual staging plan will facilitate pollination vectors for <i>Persoonia hirsuta</i> across remnant bushland for Corridors 1 through 3 as shown in plan 4 - Stage 4 emplacement staging sequence (concept).	In Control	Not yet triggered	Design plans to comply with this Condition
Water	Page 45	Runoff from the active emplacement areas (or areas where the vegetation has not yet been spread) is directed to the emplacement water management system (i.e. Ponds P4, EP2, and EP3) for treatment prior to being gravity fed to BCD.	In Control		
Water	Page 45	As the emplacement is being constructed a subsurface drainage system is then installed in the base of the cleared area. Emplacement under-drainage flows are generally clean. The emplacement under-drainage is pumped to the clean water diversion channel for release into BCD. If required (i.e. If the water is turbid), the underdrainage can be directed into the emplacement dirty water system. Overflow from the emplacement under-drainage system feeds directly to the emplacement water treatment system.	In Control	Underdrainage is monitored monthly via grab samples.	

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Dust Control	Page 46	<p>Dust impacts from emplacement operations will be mitigated by the coal wash material being wet from coal washing processes and being compacted once emplaced. Active emplacement areas will be vegetated as soon as is practical after emplacement and revegetated emplacement is typically stable.</p> <p>The following measures will be undertaken to reduce dust emissions associated with emplacement operations:</p> <ul style="list-style-type: none">* Regular inspections are undertaken to identify the presence of dry windy conditions and appropriate dust suppression shall be implemented as necessary;* Early warning weather alerts are received that predicted adverse weather condition and pre-emptive dust controls are implemented where required. A water cart is maintained on site and used when the surface of the emplacement is dry and airborne dust can be created; and* Vehicle speed limits are followed to reduce the risk of dust emissions from unsealed roads due to vehicle movements. <p>Air quality around the Emplacement Area will be monitored by:</p> <ul style="list-style-type: none">* Collection and measurement of dust samples from strategically placed dust deposition gauges;* Use of real-time air quality monitors (DustTrak); and* Dust emission surveys and spot checks using hand-held photometers.	In Control	Watercart is in use on the haul roads and stockpiles.	
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Noise Control	Page 46	Noise generated on the emplacement site is from coal wash haul trucks and earthmoving equipment and the noise impact from these operations is deemed to be minimal as noise is naturally mitigated by the emplacement being located in a valley and at a distance of 1.5 km to 2.5 km from the nearest residential development in Appin. This is confirmed by the quarterly noise monitoring program and the lack of complaints about noise from the site.	In Control	No noise complaints received	
Noise Control	Page 46	Operational noise is monitored on a quarterly basis at a set location.	In Control	As per Noise MP	
Noise Control	Page 46	Noise complaints will continue to be recorded and if a notable increase is identified, Illawarra Coal will undertake further investigations.	In Control	As per Noise MP	
Visual Impact	Page 46	The following measures will be undertaken to minimise impacts on visual amenity due to emplacement operations: * The finished level of the coal wash emplacement will be in accordance with approval conditions; * The land area dedicated to active emplacement operations will be kept to a minimum (typically 18ha, maximum 21ha); * The finished surface of the emplacement will be of a shape which complements and blends, as much as possible, with the surrounding natural landform, as per the approved final landform plans; and * Completed sections of emplacement area will be revegetated as soon as possible	In Control		

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<p>Emplacement Monitoring</p>	<p>Page 48</p>	<p>EMPLACEMENT HEIGHT Permanent survey control benchmarks will be established on stable ground outside the perimeter of the emplacement area from which the monitoring stations can be surveyed. Survey heights shall be taken regularly to determine the appropriate design heights.</p>	<p>In Control</p>	<p>Emplacement contractor achieves finished levels as follows; 1. At regular intervals depending upon the coal wash volumes (up to 6 times per year), a Surveyor provides positive proof of the current levels against the Illawarra Metallurgical Coal approved design. 2. Check of coal wash levels at 500mm below the finished plan undertaken (allowing for soil). 3. On occasion, clarification of the level after the soil is spread is obtained.</p>	<p>Requires in-field verification</p>
<p>Emplacement Monitoring</p>	<p>Page 48</p>	<p>EMPLACEMENT COMPACTION Compaction testing is to be carried out 10 times per year. Each testing campaign must take at least 5 representative samples. Compaction testing will test for SMDD and the results will be compared with a compaction criterion of 95% Standard Compaction. If after testing the compaction results are less than 95% then the fail area must be reworked and re-tested. The fail area shall be isolated from normal emplacement operation until results of re-testing indicate 95% or better compaction.</p>	<p>In Control</p>	<p>Compaction tests undertaken as required. Records are kept by the emplacement contractor.</p>	<p>Maintain records in a South32 approved system</p>

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<p>Emplacement Monitoring</p>	<p>Page 48</p>	<p>EMPLACEMENT RUN-OFF AND SUBSURFACE DRAINAGE Runoff from active emplacement areas or areas where vegetation is not established is directed to the emplacement water management system (i.e. Ponds P4, EP2 and EP3) for treatment prior to being diverted to Brennans Creek Dam (BCD). Emplacement under-drainage flows are generally clean but have the potential to be dirty during the first-flush period of a rainfall event, especially after a prolonged dry period. Any first flush flows that are dirty are directed to the emplacement water treatment system (i.e., Ponds P4, EP2, and EP3). During clean subsurface flows, or once the dirty first flush flows have cleared, emplacement under-drainage is pumped to the clean water diversion channel for release into BCD. For more information on the emplacement water treatment system, refer to the approved Bulli Seam Operations Water Management Plan. Monthly water samples are taken to monitor the quality of the emplacement subsurface drainage</p>	<p>In Control</p>	<p>Monthly samples collected as required - see 14 day report - Point 16</p>	
<p>Emplacement Monitoring</p>	<p>Page 48</p>	<p>Erosion and sediment control structures will be regularly inspected to check they are operating satisfactorily and to perform any maintenance work and repairs that may be required. Regular maintenance will include: * Sediment removal from drains and sediment basins; * Installation, proper operation and routine maintenance of any flocculant dosing equipment; Replacement and or repair of sediment control structures as required; and * Repair of areas that become unstable following periods of high flow.</p>	<p>In Control</p>	<p>Monitored as part of quarterly inspection regime by Specialist Environment. Last inspection completed in May 2020.</p>	

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Reporting and Review	Page 49	<p>The environmental performance of the Emplacement will be reviewed annually with relevant details submitted in the Project Annual Review.</p> <p>The Annual Review will include:</p> <ul style="list-style-type: none"> * Complaints relating to the Emplacement operations and management/mitigation measures undertaken; * Management/mitigation measures undertaken in the event of any confirmed exceedance of performance criteria; and * Review of the performance of management/mitigation measures and the monitoring program. <p>The Annual Review will be submitted to the relevant agencies in accordance with the Approval Conditions. A copy of the report will also be made available to the general public via the South32 website.</p>	In Control	<p>Annual Review was submitted as required. A copy is on the South32 website: https://www.south32.net/docs/default-source/illawarra-coal-bulli-seam-operations/annual-review/bso-annual-review---fy19---with-appendices.pdf?sfvrsn=63b1a45e_10</p>	
Reporting and Review		<p>All non-conformances to this plan and Community Complaints are recorded in Isometrix. This system tracks non-compliances, corrective actions, and responsible persons, estimated and actual completions. Commitments made in this Plan are audited via an internal verification process at least once per year. Any issues arising from this are recorded and corrective actions issued.</p>	In Control		Plan is currently being updated.
Public Reporting	Page 49	<p>A summary of the emplacement environmental monitoring results (where applicable) will be provided on the South32 website in accordance with the reporting requirements of the <i>Protection of the Environment Operations Act 1997</i> (POEO Act).</p>	In Control	<p>Licence results under EPL2504 are reported online in the 14 day report as required by the POEO Act</p>	
Document Control	Page 49	<p>Controlled documents are available in the document control system, iPick. Copies of controlled documents are available to all employees and contractors working on the West Cliff site.</p>	In Control	<p>Plan is available in iPick</p>	

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Revision	Page 49	<p>This Management Plan will be reviewed, and if necessary revised, within 3 months, of:</p> <ul style="list-style-type: none"> * the submission of an annual review; * the submission of an incident report that has caused, or threatens to cause, material harm to the environment; * the submission of an Independent Environmental Audit report; or * any modification to relevant Project approval conditions (unless the conditions require otherwise). 	In Control	<p>Last reviewed and approved Nov 2016 by State government, Aug 2017 by Federal government. Plan was reviewed post submission of the Annual Review and is currently being revised.</p>	
Independent Audit	Page 49	<p>An independent Environmental Audit of this Plan and monitoring program was undertaken in December 2013 and will be every three years thereafter. The report will be submitted to the Director General (DoPI) and Minister (DSEWPaC) within 6 weeks of completion.</p>	In Control	<p>Completed in 2013, 2016 and 2019</p>	

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AUDIT REVIEW			Compliance	Comment & Evidence	Proposed Action
Section	MP Ref.	Requirement / Obligation			
Bulli Seam operations Project Environmental Assessment	1.5	South32 has committed to clearing no more than 9 ha of SSTF over the life of the project.	In Control		
Monitoring, Record Keeping & Reporting	3	This will include an Annual BioBank Report to include the information required under Annexure D, Condition 2.5	In Control	Reports submitted as required	

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Monitoring, Record Keeping & Reporting	3	A copy of the BioBank report will also be submitted to the Department of the Environment and Energy (DOTEE) to satisfy the EPBC Approval conditions.	In Control	<p>In the Independent Environmental Audit (Dec 2019) that was conducted for the Bulli Seam Operations (BSO) under Condition 9 of Schedule 6 of the BSO Project Approval and Condition 18 of EPBC Approval 2010/5350, an administrative non-compliance was noted, and a recommendation was made as follows:</p> <p><i>It is recommended that confirmation be sought from the Department that the required timing for submission of the monitoring report in Condition 5c be changed to that required under the Biobanking Scheme.</i></p> <p>South32 received the below response from DAWE in July 2020 (email from Peter Blackwell, 10th July 2020) :</p> <p><i>Hi Chris</i></p> <p><i>I confirm that, consistent with the intent of condition 5A, added to the conditions attached to the approval on 4 May 2018, if the SSTF is legally secured as a registered NSW BioBanking site, the annual reporting required under NSW BioBanking for that site may be provided to the Department in place of the reports containing monitoring results required at condition 5c, and thus such reports should be provided to the Department in accordance with the timing required under NSW BioBanking for that site.</i></p>	
BioBanking Agreement ID number: 215	Ref.	Requirement / Obligation			

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<p>Use of the biobank site General responsibilities</p>	<p>3.1</p>	<p>Except as otherwise permitted by this agreement, the landowner must not carry out any act or omit to carry out any act, or cause or permit any act to be carried out or any act not to be carried out which act or omission may harm biodiversity values on the biobank site, including but not limited to any native animals, native plants, threatened species, populations and ecological communities, and their habitats.</p> <p>NOTE: The clearing of native vegetation that is otherwise permissible in accordance with the NV Act (whether it is permissible under a Property Vegetation Plan, routine agricultural management activity (as defined under the NV Act), or is otherwise permitted under Part 3 of that Act) can only be carried out on the biobank site to which this agreement applies if it is also permissible under this agreement. Item 5.1 of the management actions contained in Section 1 of Annexure C of this agreement sets out the limited circumstances in which native vegetation can be cleared on the biobank site. Annexure C of this agreement also contains limited exceptions in relation to when a landowner is not required to comply with the</p>	<p>In Control</p>	<p>As per Management Actions comments below.</p>	
<p>Use of the biobank site Cultural heritage</p>	<p>3.2</p>	<p>To avoid any doubt, nothing in this agreement is to be construed as authorising (including, but not limited to, by way of a consent, permit, approval or authorisation of any kind for the purposes of Part 6 of the NPW Act) any person to damage or to cause or permit damage to an Aboriginal object or Aboriginal place in, on or under the biobank site.</p>	<p>In Control</p>	<p>As per Management Actions comments below.</p>	

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Use of the biobank site Obtaining of consents, permits and authorisations	3.3	The landowner is responsible for obtaining all necessary licences, consents, authorisations, permits or approvals in order to lawfully comply with and carry out its obligations under this agreement or to undertake or enable any other identified matter under clause 3.5 and/or clause 3.6	In Control		
Use of the biobank site Development	3.4.1	The landowner must not carry out, or cause or permit to be carried out, any development (as defined under clause 1 above) on the biobank site, unless the development: 3.4.1 - is permitted or required under Annexure C, or 3.4.2 - is identified in the table entitled 'Permissible development on the biobank site' contained in clause 3.5 or identified in the table entitled 'Permissible human activities on the biobank site' contained in clause 3.6	In Control	As per Management Actions comments below.	
Use of the biobank site Permissible development	3.5	The landowner shall be permitted to carry out, or cause or permit to be carried out, the development specified in the following table in the management zone specified in the table: * All Management zones - Any development within the meaning of section 127 (1) of the Act reasonably considered necessary to remove or reduce an imminent risk of serious personal injury	In Control	As per Management Actions comments below.	

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Use of the biobank site Permissible development	3.5	<p>The landowner shall be permitted to carry out, or cause or permit to be carried out, the development specified in the following table in the management zone specified in the table:</p> <p>* All Management Zones - Any development permitted or required as part of a management action under Annexure C, including but not limited to maintaining existing access tracks on the biobank site, building shed/s to store weed control chemicals or other pesticides on the biobank site, building fences to manage stock on the biobank site and building structures to restore natural water flow regimes.</p>	In Control	As per Management Actions comments below.	
Use of the biobank site Permissible development	3.5	<p>The landowner shall be permitted to carry out, or cause or permit to be carried out, the development specified in the following table in the management zone specified in the table:</p> <p>* All Management Zones - Construction of fencing to prevent stock incursions.</p>	In Control	The 2020 annual audit by BCT is not scheduled till after Aug 2020.	
Use of biobank site Permissible human activities	3.6	<p>Notwithstanding clause 3.1, the landowner may carry out or cause or permit to be carried out any human activities specified in the following table, in the management zone specified in the table:</p> <p>* All Management Zones - Any human activity reasonably considered necessary to remove or reduce an imminent risk of serious personal injury or damage to property.</p>	In Control	As per Management Actions comments below.	

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Use of biobank site Permissible human activities	3.6	<p>Notwithstanding clause 3.1, the landowner may carry out or cause or permit to be carried out any human activities specified in the following table, in the management zone specified in the table:</p> <p>* All Management Zones - Any activity or any development permitted or required as part of a management action under Annexure C, including but not limited to mustering stock or feral herbivores including with mechanised vehicles, spraying or mechanically removing weeds, planting tube stock or sowing seeds of native vegetation, using drip torches, thinning native vegetation, disturbing soil temporarily to control erosion, encouraging regeneration, controlling nutrients or restoring natural flow regimes, laying baits, trapping or otherwise controlling vertebrate pests and feral herbivores and overabundant native herbivores</p>	In Control	As per Management Actions comments below.	
Use of biobank site Permissible human activities	3.6	<p>Notwithstanding clause 3.1, the landowner may carry out or cause or permit to be carried out any human activities specified in the following table, in the management zone specified in the table:</p> <p>* All Management Zones - Passive recreation, with the exception of overnight stays and/or camp fires, is permissible on the land to the extent that the condition of vegetation on site is not degraded. Passive recreation can include but is not limited to activities such as walking and bird watching.</p>	In Control	As per Management Actions comments below.	

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Use of biobank site Permissible human activities	3.6	Notwithstanding clause 3.1, the landowner may carry out or cause or permit to be carried out any human activities specified in the following table, in the management zone specified in the table: * All Management Zones - Any activity required to undertake permissible development	In Control	As per Management Actions comments below.	
Management actions and management plans	4.1	The landowner must carry out or procure the carrying out of the management actions in accordance with the timing, manner and requirements of Annexure C	In Control	As per Management Actions comments below.	
Management actions and management plans	4.2	The landowner must: i) implement or procure the implementation of; and ii) comply of procure the compliance with the management plans in accordance with the timing, manner and requirements of Annexure C NOTE: The management actions listed in Annexure C include requirements to take certain action and requirements to refrain from taking certain action.	In Control	As per Management Actions comments below.	
Management actions and management plans	4.3	Unless otherwise indicated by Annexure C, the landowner must ensure that; i) the management actions to be carried out in accordance with clause 4.1; and ii) the management plans to be implemented and complied with in accordance with clause 4.2	In Control	As per Management Actions comments below.	

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Monitoring, record keeping and reporting	7.1	The landowner must comply with the monitoring and record keeping requirements as set out in Annexure D.	In Control	As per Management Actions comments below.	
Monitoring, record keeping and reporting	7.2	The landowner must submit an annual report complying with the requirements set out in Annexure D to the Chief Executive within the timeframe specified in Annexure D.	In Control	Reports submitted as required	
Monitoring, record keeping and reporting	7.3	<p>The landowner must notify the Chief Executive in writing as soon as practicable after becoming aware of any failure to comply with this agreement or any other incident at the biobank site (or surrounds) which results or may result in a sudden or significant decline of biodiversity values at the biobank site. In particular, the landowner must notify the Chief Executive of:</p> <p>7.3.1 - the nature, location and time of the incident</p> <p>7.3.2 - the impact of the incident on biodiversity values</p> <p>7.3.3 - the measures that have been taken or will be taken in response to the incident</p> <p>7.3.4 - any provision of this agreement which may have been breached</p> <p>7.3.5 - the extent of any damage caused or permitted by the incident</p> <p>7.3.6 - the measures which have been taken or will be taken to prevent a recurrence of the incident</p>	In Control	Trespass and unauthorised removal of trees in August 2019. Incident report was provided to the Biodiversity Conservation Trust as required by this condition. BCT satisfied with the report and actions taken by South32.	

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Use of the land by servants, agents, leases or licensees	8	The landowner must incorporate all relevant requirements of this agreement in any lease or licence issued for the biobank site, and must at all times ensure that any servant, contractor, consultant, agent, lessee or licensee occupying the biobank site area shall be aware of, and not undertake any act inconsistent with, the landowner's obligations under this agreement.	In Control	Landcare have been provided a copy of the agreement as required.	
Change of land ownership of subdivision of land	9.1	The landowner must notify the Chief executive in writing of any change of: 9.1.1 - ownership of the biobank site, or any part thereof, within seven (7) days after the change of ownership of the biobank site; or 9.1.2 - lessee of the biobank site, or any part thereof, within twenty-eight (28) days after the change of lessee or licensee of the biobank site. The notice must include the name and address and other relevant contact details of the new	In Control	Not triggered	
Change of land ownership of subdivision of land	9.2	The landowner must provide a copy of this agreement, including a copy of each management plan and a copy of all records required to be kept under the record keeping requirements, to the transferee before completion of the assignment, transfer, disposal or sale of any interest in the biobank site.	In Control	Not triggered	
Change of land ownership of subdivision of land	9.3	The landowner must notify the Chief Executive in writing no less than 14 days before the biobank site is subdivided.	In Control	Not triggered	

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Change of land ownership of subdivision of land	9.4	The landowner cannot assign, transfer, dispose of or sell its rights, title or interest in part of the land containing any area of the biobank site unless the landowner and the Minister have first agreed to vary the agreement to apportion the obligations and rights under the agreement in respect of that part of the biobank site that will be assigned, transferred, disposed of or sold.	In Control	Not triggered	
Right to enter biobank site for research and monitoring	10.1	<p>The landowner must permit access to the biobank site at any time to the Minister, the Chief Executive, an authorised officer or an officer of OEH for the purpose of carrying out research or monitoring in relation to the biodiversity values on the biobank site for which biodiversity credits have been created under this agreement, but only where the person has given reasonable notice to the landowner and the landowner's agent, lessee or licensee, of the intention to enter the biobank site for that purpose and the nature of the research or monitoring that will be conducted. In exercising its right of access under this clause, the Minister, the Chief Executive, an authorised officer or an officer of OEH must ensure that such access does not:</p> <p>10.1.1 - result in physical or radio interference which obstructs, interrupts or impedes the use or operation of any telecommunications network and telecommunications service of a lessee or licensee of a part of the land; or</p> <p>10.1.2 - interfere with the electricity supply separate from the landowner's electricity supply to any part of the land occupied by a lessee or licensee.</p>	In Control	BCT have been given access as required for the purpose of the annual audit.	

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Right to enter biobank site for research and monitoring	10.2	The Minister, Chief Executive, an authorised officer or an officer of OEH may make a written request to the landowner to consent to any other person specified in the written request to enter the biobank site for the purpose of carrying out the research or monitoring referred to in clause 10.2, whether or not that person will accompany the Minister, Chief Executive, an authorised officer or an officer of OEH. The landowner will not unreasonably withhold consent.	In Control	Not triggered	
Ownership of the land and registration of this agreement	13.4	If the landowner elects to identify the exact boundaries of the biobank site on the Deposited Plan for the land, the landowner must bear any additional costs of registration.	In Control	Not triggered	
Variation and termination	14.1	Subject to clause 14.2, this agreement can only be varied or terminated in accordance with the Act.	In Control	Not triggered	
Dispute resolution	16.1	Where there is a dispute, difference or claim (dispute), the party raising the dispute must notify the other party in writing of the nature of the dispute, including the factual and legal basis of the dispute.	In Control	Not triggered	
Dispute resolution	16.2	Within 14 days of the written notice, the Chief Executive and the landowner, or nominated senior representatives of the parties, must confer to attempt to resolve the dispute, and if the dispute cannot be resolved within twenty-one (21) days of the written notice, the Chief Executive and the landowner will refer the matter to mediation.	In Control	Not triggered	

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Dispute resolution	16.3	The parties will agree on the terms of appointment of the mediator and the terms of the mediation in writing within twenty-eight (28) days, failing which the mediation will be at an end and either party may commence court proceedings in respect of the dispute, difference or claim.	In Control	Not triggered	
Dispute resolution	16.4	If the matter has not been resolved within 28 days of the appointment of the mediator, the mediation process will be at an end and either part may commence court proceedings in respect of the dispute, difference or claim.	In Control	Not triggered	
Notices	21.1.	Any notice, consent, information, application or request that must or may be given or made to a party is only given or made if it is in writing and delivered or posted to that party as its address set out (in the agreement), or faxed to that party at its fax number set out (in the agreement).	In Control	Not triggered	
Annexure A: Maps of biobank sites	Ref.	Requirement / Obligation			
Maps of Biobank site	Map A	Map A - Biobank site boundary map dated 01/03/2016.	In Control		
Maps of Biobank site	Map B	Map B - Vegetation zones, management zones and photo points map dated 16/05/2016.	In Control		
Maps of Biobank site	Map C	Map C - <i>Grevillea parviflora</i> subsp. <i>Parviflora</i> locations dated 09/05/2016	In Control		
Maps of Biobank site	Map D	Map D - <i>Epacris purpurascens</i> var. <i>Purpurascens</i> locations dated 10/05/2016.	In Control		
Maps of Biobank site	Map E	Map E - Koala habitat polygon dated 13/05/2016	In Control		

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Annexure C: Management actions and management plans	Ref.	Requirement / Obligation			
Standard Management Actions Grazing	Section 1	Stock must not be permitted to graze in any area, remove stock immediately - Ongoing from commencement date	In Control	<p>Comments as per past annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Excluding the one horse observed in the eastern section of MZ1 in Oct 2018, no other stock observed in all management zones on each site visit. The fence allowing the neighbour's horse to enter the site was repaired to prevent further access to the site. Significant grazing by stock animals continues to occur on the private property (to the south) without incursion into the site.</p>	

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<p>Standard Management Actions Weed Control</p>	<p>Section 1</p>	<p>Comply with Weed MP - Section 3 - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. Weed control at MZ1, MZ2, MZ3 and Transmission easement and edges of MZ56 and MZ7 adjoining easement on each site visit using herbicide and hand pulling of species listed in BioBanking Agreement (BBA) 215. Maintenance Sweeps for key weed threats through MZ4, MZ6 and MZ7. No access permitted to MZ5 due to the high cliffs and gorges, however no weeds observed in adjoining management zones during maintenance sweeps. Herbicides have been used on the BioBanking site at the quarterly site visits to undertake management actions (i.e. weed control) in each respective management zone as listed in the BBA. A list of herbicide used at each visit is available (if required). Additional herbicide treatment required in MZ1, MZ2, MZ3 and the transmission easement for Blue periwinkle, Paterson's curse, Bridal creeper, African lovegrass, Stinking Roger, Thistle, Fleabane, Paddy's Lucerne and woody species such as Privet. As per the BBA, areas previously disturbed require ongoing control for at least the following 10 years, after which time these zones are to be reassessed for the need for further control.</p>	
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<p>Standard Management Actions Weed Control</p>	<p>Section 1</p>	<p>Review Weed Management Plan every 4 -6 years. Notify Chief Executive in writing within 14 days of commencement of review. Findings of the review must be submitted to Chief Executive within 3 months of commencing the review. Chief executive to determine if update is required. Landowner must submit updated plan within 3 months of this request. Update must cover matters as per 2.2. of Section 1. - Ongoing from first payment date</p>	<p>N/A</p>	<p>BioBanking Agreement 215 only made on 1/2/17.</p>	
<p>Standard Management Actions Fire</p>	<p>Section 1</p>	<p>Comply with Fire MP - Ongoing from first payment date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No ecological burns are planned in any zone until at least 2026 and then the site will be reconsidered for future ecological burns in a mosaic pattern across the site. Heavy senescence of <i>Acacia</i> spp. (predominantly <i>A. decurrens</i>) in MZ1, MZ2 and MZ7. Fuel loads vary in all management zones but are at least 15 -20 tonnes per hectare or greater across the site.</p> <p>Action Completed Satisfactorily</p>	

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Standard Management Actions Fire	Section 1	Review Fire Management Plan every 4 -6 years. Notify Chief Executive in writing within 14 days of commencement of review. Findings of the review must be submitted to Chief Executive within 3 months of commencing the review. Chief executive to determine if update is required. Landowner must submit updated plan within 3 months of this request. Update must cover matters as per 3.2. of Section 1. - Ongoing from first payment date	N/A	BioBanking Agreement 215 only made on 1/2/17	
Standard Management Actions Fire	Section 1	Do not light fires on the Biobank site other than for purposes of ecological burning of if permitted as a permissible activity as per Item 4, Clause 3.6. - Ongoing from commencement date	In Control	No ecological burns are planned in any zone until at least 2026 and then the site will be reconsidered for future ecological burns in a mosaic pattern across the site. Heavy senescence of <i>Acacia</i> spp. (predominantly <i>A. decurrens</i>) in MZ1, MZ2 and MZ7. Fuel loads vary in all management zones but are at least 15 -20 tonnes per hectare or greater across the site. No evidence of recent fire activity during all six site visits (BBA suggests last burn/wildfire was in 2004). Comment from last annual audit by BCT (18/9/19) - Action Completed Satisfactorily - No planned burns required until 2026. No evidence of recent fire activity observed during inspection.	

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<p>Standard Management Actions Human Disturbance</p>	<p>Section 1</p>	<p>No activities that will adversely effect biodiversity must be carried out except those permitted under Clause 3.6 - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <ul style="list-style-type: none"> • Access for management purposes includes South32 and Landcare Australia (land management contractor) staff. There is no ability for stock or unauthorized motor vehicles to access the site with the current exclusion fencing in place. • Routine inspections conducted at each site visit to ensure fencing is secure and that there have been no incursions (except for the horse observed as listed in item 1 above). • OEH mapping shows there is a spotlight location on the site as part of ongoing Koala surveys in South Western Sydney. <p>Action Completed Satisfactorily:</p> <p>Unauthorised clearing of approximately 8 trees (presumably for firewood) was reported to the BCT by the landowner in August 2019 (see separate report - doc19/843854). The landowner has repaired the fencing that was damaged to gain access to the site and has committed to install signs warning that the area is under surveillance to deter similar incidents in future. Signage has been installed.</p>	
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Standard Management Actions Human Disturbance	Section 1	Human activities that have negative effect on biodiversity are permitted if they are listed under Clause 6 or if they are undertaken as part of the management plans - Ongoing from commencement date	In Control	Trespass and unauthorised removal of trees in August 2019. Report was provided to the Biodiversity Conservation Trust as required.	
Standard Management Actions Human Disturbance	Section 1	Must not store or dispose of waste - Ongoing from commencement date	In Control	Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. No waste has been observed on the site during quarterly site visits this year. Action Completed Satisfactorily - No stored west observed during site inspection.	
Standard Management Actions Human Disturbance	Section 1	Must take all reasonable steps to remove waste deposited by others, or which is otherwise present on the site - Ongoing from first payment date	In Control	Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. No waste has been observed on the site during quarterly site visits this year. Action Completed Satisfactorily - No stored waste observed during site inspection.	

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<p>Standard Management Actions Human Disturbance</p>	<p>Section 1</p>	<p>Signage must be installed and maintained to deter human disturbance including dumping. Signage must be the biobanking signs available by OEH - Within 3 months of first payment date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Signage and fencing as per the BBA have been installed and are in good working order. Minor repairs required on the northern boundary to ensure no further incursions of horses onto the site from the neighbouring property.</p> <p>Action Completed Satisfactorily</p>	
<p>Standard Management Actions Human Disturbance</p>	<p>Section 1</p>	<p>Fencing of 3 km of the site. \$4500 allocated every three years to maintain fencing. Single sign to be installed at each of the two locked gates - Within 3 months of first payment date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Signage and fencing as per the BBA have been installed and are in good working order. Minor repairs required on the northern boundary to ensure no further incursions of horses onto the site from the neighbouring property.</p> <p>Action Completed Satisfactorily</p>	
<p>Standard Management Actions Human Disturbance</p>	<p>Section 1</p>	<p>Retain the management access track on the Cataract River side - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Existing access track retained.</p> <p>Action Completed Satisfactorily</p>	

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<p>Standard Management Actions Retention of regrowth and remnant Veg</p>	<p>Section 1</p>	<p>Native veg must not be cut down, felled, thinned, logged, killed, destroyed, poisoned, ringbarked, uprooted, burnt etc. Except in accordance with Fire Management Plan or Permissible Development under Clause 3.5 - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No native vegetation has been removed, killed, destroyed or poisoned on the site. No evidence or observation of recent ringbarking or tree felling (since commencement of the BBA) on the site. No evidence of fire activity.</p> <p>Unauthorised clearing of approximately 8 trees (presumably for firewood) was reported to the BCT by the landowner in August 2019. The landowner has repaired the fencing that was damaged to gain access to the site and has committed to install signs warning that the area is under surveillance to deter similar incidents in future. No evidence of recent fire activity observed during inspection</p> <p>Action Completed Satisfactorily</p>	
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<p>Standard Management Actions Replanting or supp planting</p>	<p>Section 1</p>	<p>Planting required in the 0.5 Ha Management Zone 3 - 250 plants. Record date of planting - commencing from first payment date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19)</p> <p>As per the Section 6.6 of the BBA, a planting program has been implemented as a "local planting day", with preparation on 15/05/18 and planting on 22/05/18 for the species listed in the planting schedule.</p> <p>250 canopy tube stock were watered on 22/10/18, 04/01/19 and 20/02/19. Currently there is a 90% success rate in survivability of the canopy species planted.</p> <p>Rob Porter (Illawarra Landcare) confirmed by email on 20/9/19 that species planted are consistent with planting schedule. Plant numbers installed are also consistent with planting schedule except for Eucalyptus crebra where 38 rather than 50 plants were installed. This minor deviation from the planting schedule is acceptable.</p> <p>Action Completed Satisfactorily</p>	
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<p>Standard Management Actions Replanting or supp planting</p>	<p>Section 1</p>	<p>Protect plants from grazing for two years or until 50cm high. Record the date when the plant height requirements are met. - commencing from first payment date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Plant guards have been installed around plantings.</p> <p>Action Completed Satisfactorily</p>	
<p>Standard Management Actions Replanting or supp planting</p>	<p>Section 1</p>	<p>Survey the plants for success - Conduct first survey 24 months after completion of planting, then every 12 months for 5 years</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Currently there is a 90% success rate in survivability of the canopy species planted.</p> <p>Not required until 24 months following planting</p> <p>Action Completed Satisfactorily.</p>	
<p>Standard Management Actions Replanting or supp planting</p>	<p>Section 1</p>	<p>Seeds and plants used for planting must be obtained from locally collected provenances, unless reasons to do otherwise. - Conduct first survey 24 months after completion of planting, then every 12 months for 5 years</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Rob Porter (Illawarra Landcare) confirmed by email on 26/9/19 that all plantings were sourced from Western and South Western Sydney.</p> <p>Action Completed Satisfactorily.</p>	

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<p>Standard Management Actions Retention of Dead Timber</p>	<p>Section 1</p>	<p>Don't remove dead timber except for firewood for one household (landowner) or fencing repairs. - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No dead timber (standing or fallen) has been removed and no additional timber has been introduced to the site since commencement of the BBA. Observations made during maintenance sweeps for all zones during annual and quarterly sites visits.</p> <p>No evidence of dead timber removal observed during inspection.</p> <p>Action Completed Satisfactorily</p>	
<p>Standard Management Actions Retention of Dead Timber</p>	<p>Section 1</p>	<p>Timber brought from outside must be documented - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No dead timber (standing or fallen) has been removed and no additional timber has been introduced to the site since commencement of the BBA. Observations made during maintenance sweeps for all zones during annual and quarterly sites visits.</p> <p>No evidence of dead timber removal observed during inspection.</p> <p>Action Completed Satisfactorily</p>	

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<p>Standard Management Actions Erosion Control</p>	<p>Section 1</p>	<p>Take reasonable steps to prevent, control erosion - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No areas identified across the site which currently require any supplementary erosion control or stabilisation. Observations made during maintenance sweeps for all zones during annual and quarterly sites visits.</p> <p>No evidence or erosion observed during site inspection.</p> <p>Action Completed Satisfactorily</p>	
<p>Standard Management Actions Erosion Control</p>	<p>Section 1</p>	<p>Don't remove rocks from the site - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No rock removal has occurred on the site since the commencement of the BBA. Site monitored for rock removal at either quarterly or annual site visits to the respective management zones.</p> <p>No evidence of rock removal observed during inspection.</p> <p>Action Completed Satisfactorily</p>	

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<p>Standard Management Actions Erosion Control</p>	<p>Section 1</p>	<p>Can bring rocks from outside the site but once onsite cant be removed. - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No rock removal has occurred on the site since the commencement of the BBA. Site monitored for rock removal at either quarterly or annual site visits to the respective management zones.</p> <p>No evidence of rock removal observed during inspection.</p> <p>Action Completed Satisfactorily</p>	
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<p>Additional Management Actions Control of Feral and Overabundant Native Herbivores</p>	<p>Section 2</p>	<p>Comply with the Management Plan - Ongoing from first payment date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Negligible feral or overabundant native herbivory (wallabies, kangaroo scats, but good floral recruitment observed). In accordance with the BBA annual inspection required for species traces. Opportunistic observations made during weed control and maintenance sweeps for all zones during either the annual and/or quarterly site visits. Minimal rabbit scratching/scat mounds observed in transmission easement (20/02/2019). No rabbit burrow/warrens found on property, numerous (generally inactive) wombat burrows also did not show signs of rabbits in residence. No evidence of goats or deer observed in the immediate areas.</p> <p>Action Completed Satisfactorily</p>	
<p>Additional Management Actions Control of Feral and Overabundant Native Herbivores</p>	<p>Section 2</p>	<p>Review Management Plan every 4 -6 years. Notify Chief Executive in writing within 14 days of commencement of review. Findings of the review must be submitted to Chief Executive within 3 months of commencing the review. Chief executive to determine if update is required. Landowner must submit updated plan within 3 months of this request. Update must cover matters as per 3.2. of Section 1. - Ongoing from first payment date</p>	<p>N/A</p>	<p>BioBanking Agreement 215 only made on 1/2/17</p>	

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<p>Additional Management Actions Vert Pest Management</p>	<p>Section 2</p>	<p>Comply with Vertebrate Pest MP - Ongoing from first payment date</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19)</p> <p>No pest animals observed during any site visits (only scats). Fox scat was observed in the transmission easement (20/02/2019). The pest management plan is not due for review until 2021, however liaison with Sydney Region Local Land Service will continue so as to determine if and when a fox/wild baiting program should be undertaken on the site.</p> <p>Action Completed Satisfactorily</p>	
<p>Additional Management Actions Vert Pest Management</p>	<p>Section 2</p>	<p>Review Pest Management Plan every 4 -6 years. Notify Chief Executive in writing within 14 days of commencement of review. Findings of the review must be submitted to Chief Executive within 3 months of commencing the review. Chief executive to determine if update is required. Landowner must submit updated plan within 3 months of this request. Update must cover matters as per 3.2. of Section 1. - Ongoing from first payment date</p>	<p>N/A</p>	<p>BioBanking Agreement 215 only made on 1/2/17</p>	

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<p>Additional Management Actions Nutrient control</p>	<p>Section 2</p>	<p>Fertilisers or pesticides not to be used except for weed or pest control - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No fertilizers have been used on the site since the commencement of the BBA. No evidence of fertiliser or pesticide use observed during site inspection. Herbicide use appears to be appropriate for implementation of management actions.</p> <p>Action Completed Satisfactorily</p>	
<p>Additional Management Actions Control of exotic fish</p>	<p>Section 2</p>	<p>Not relevant to this site - Ongoing from first payment date</p>	<p>N/A</p>	<p>Not relevant to this site</p>	
<p>Additional Management Actions Maintenance or reintroduction of natural flow regimes</p>	<p>Section 2</p>	<p>Don't impede natural flow regimes - Ongoing from commencement date</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No artificial structures installed to impede the natural flow regimes on the site. Natural flow regimes are maintained on the site in accordance with the BBA No evidence of artificial structures being constructed to impede natural flow regimes observed during site inspection.</p> <p>Action Completed Satisfactorily</p>	

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Standard Management Plan Weed Management Plan	Section 3	Spray/Slashing in Management Zones - Spray/Slashing 4 times per year (MZ1-3). Some moment zones only required once per year (MZ4, 5 & 6)	In Control	Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. Level and type of weed control reported by landowner is consistent with agreement. Action Completed Satisfactorily	
Standard Management Plan Weed Management Plan	Section 3	Site inspections as weed treatments applied. Annual inspection and Monitoring Report - Annually from first payment date	In Control	Included in South32 BioBanking Agreement Annual Report. 2020 report due 18th August.	
Standard Management Plan Fire for Conservation	Section 3	Fires intervals between 7 and 30 years - Once every 12 to 30 years	In Control	Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. No planned burning in any zones until 2026 Action Completed Satisfactorily	
Standard Management Plan Fire for Conservation	Section 3	Exclude fire until 2026. Unplanned fires permitted. Must not burn >25% of the site at any one time. - Once every 12 to 30 years	In Control	Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. No planned burning in any zones until 2026 Action Completed Satisfactorily	

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Standard Management Plan Fire for Conservation	Section 3	In MZ5 totally exclude fire other than wildfire - Once every 12 to 30 years	In Control	Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. No evidence of recent fire activity during all six site visits (BBA suggest last burn/wildfire was in 2004). No evidence of recent fire activity observed during inspection. Action Completed Satisfactorily	
Standard Management Plan Fire for Conservation	Section 3	Visual monitoring in 2026 as per MP table - 2026	N/A	Not required until 2026	
Standard Management Plan Fire for Conservation	Section 3	Monitoring prior to and after burning as per table - 2026 or following a wildfire	In Control	Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020. No evidence of recent fire activity during all six site visits (BBA suggest last burn/wildfire was in 2004). No evidence of recent fire activity observed during inspection.	
Standard Management Plan Fire for Conservation	Section 3	Periodic trittering along fence lines is permitted but must not affect canopy or mid storey - Every 5 years	N/A	BioBanking Agreement 215 only made on 1/2/17	

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<p>Standard Management Plan Control of Feral and Overabundant Native Herbivores</p>	<p>Section 3</p>	<p>Monitoring of number and impacts on annual basis - No or negligible occurrence on the site</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No control required due to no or negligible impacts and no or low levels of occurrence. Tubestock planted in MZ3 to be protected with tree guards</p> <p>Annual inspections of species traces and potential impacts by suitably qualified restoration ecologist or environmental scientist</p> <p>No evidence of feral herbivore activity observed during site inspection; some macropods present. Tubestock in MZ3 are protected with tree guards. Monitoring undertaken as required and confirms negligible occurrence/impacts</p> <p>Action Completed Satisfactorily</p>	
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<p>Standard Management Plan Control of Feral and Overabundant Native Herbivores</p>	<p>Section 3</p>	<p>Protect MZ3 Planting - Review annually</p>	<p>In Control</p>	<p>Comments as per recent annual audit by BCT (site visit 18/9/19)</p> <p>No control required due to no or negligible impacts and no or low levels of occurrence. Tubestock planted in MZ3 to be protected with tree guards</p> <p>Annual inspections of species traces and potential impacts by suitably qualified restoration ecologist or environmental scientist</p> <p>No evidence of feral herbivore activity observed during site inspection; some macropods present. Tubestock in MZ3 are protected with tree guards. Monitoring undertaken as required and confirms negligible occurrence/impacts</p> <p>Action Completed Satisfactorily</p>	
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<p>Standard Management Plan Control of Feral and Overabundant Native Herbivores</p>	<p>Section 3</p>	<p>Species traces and potential impacts - Annually</p>	<p>In Control</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>No control required due to no or negligible impacts and no or low levels of occurrence. Tubestock planted in MZ3 to be protected with tree guards Annual inspections of species traces and potential impacts by suitably qualified restoration ecologist or environmental scientist No evidence of feral herbivore activity observed during site inspection; some macropods present. Tubestock in MZ3 are protected with tree guards. Monitoring undertaken as required and confirms negligible occurrence/impacts</p> <p>Action Completed Satisfactorily</p>	
<p>Standard Management Plan Vertebrate Pest Management Plan</p>	<p>Section 3</p>	<p>1080 baiting - If warranted (Consult OEH/LLS)</p>	<p>In Control After Action Close-out</p>	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Annual monitoring for traces and scats to record date, location and estimated number of pest species identified. 1080 baiting program for fox/dogs/rabbits to be implemented if required, in consultation with LLS. No evidence of vertebrate pest activity observed during site inspection. Monitoring identified some fox activity.</p> <p>Action Completed Satisfactorily</p>	<p>BCT Recommendation: Liaise with Local Land Services regarding the likely effectiveness of undertaking a fox baiting program on the site. Fox baiting will occur in Spring 2020.</p>

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Standard Management Plan Vertebrate Pest Management Plan	Section 3	Den fumigation or habitat removal - If warranted	In Control	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Annual monitoring for traces and scats to record date, location and estimated number of pest species identified. 1080 baiting program for fox/dogs/rabbits to be implemented if required, in consultation with LLS.</p> <p>No evidence of vertebrate pest activity observed during site inspection. Monitoring identified some fox activity.</p> <p>Action Completed Satisfactorily</p>	
Standard Management Plan Vertebrate Pest Management Plan	Section 3	Qualitative observation for traces and scats - Annually	In Control	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>Annual monitoring for traces and scats to record date, location and estimated number of pest species identified. 1080 baiting program for fox/dogs/rabbits to be implemented if required, in consultation with LLS.</p> <p>No evidence of vertebrate pest activity observed during site inspection. Monitoring identified some fox activity.</p> <p>Action Completed Satisfactorily</p>	
Annexure D: Monitoring, reporting and record keeping requirements	Ref.	Requirement / Obligation			

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Monitoring		<p>Photo Points - Within 12 months or commencement date and every 12 months thereafter</p>	In Control	<p>Comments as per last annual audit by BCT (site visit 18/9/19). The 2020 annual audit is not due till after August 2020.</p> <p>The landowner must ensure that photographs are taken at photo-points at each of the locations and in the direction identified in the table titled 'Locations of photo points' shown in section 1.2, Annexure D of the biobanking agreement, within 12 months of the commencement date and then at least every 12 months thereafter.</p> <p>No photos were taken from PP10 for WHS reasons due its location in a steep gully. This is an acceptable minor variation.</p> <p>Action Completed Satisfactorily</p>	
Monitoring		<p>Percentage of ground cover present on the biobank site - Annually</p>	In Control	<p>Minimal stock incursion (excluding individual horse since previous reporting period) has allowed groundcover to be maintained as a similar density across the site over the previous 2 years due to the installation of the exclusion fencing (refer to photopoints for further detail).</p> <p>As per South32 Appin BioBanking Agreement Annual Report. 2020 report due 18th August 2020.</p>	

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Monitoring		Number of stock and dates when stock have entered - Quarterly	In Control	One stock incursion to the eastern side of MZ 1 in Oct 2018, the fence was repaired and there has been no further evidence of stock on the site since the installation of the fencing. As per South32 Appin BioBanking Agreement Annual Report. 2020 report due 18th August 2020.	
Monitoring		Physical condition of fencing - control of stock - control of humans - control of ferals and overabundant herbivores - control of vertebrates pests - Quarterly	In Control	a. Currently maintained to the standard to exclude stock from the site and inspected annually (inspected 26/4/2018 and 20/02/19). Next audit due after August 2020. b. Currently maintained to a standard to control human disturbance and inspected annually (inspected 26/4/2018 and 20/02/19). Next audit due after August 2020. c. Currently maintained to a standard to control feral or overabundant herbivores and/or vertebrate pests and inspected annually (inspected 26/4/2018, 22/10/2018, 04/01/2019 and 20/02/19) - Negligible feral or overabundant native herbivory observed in all management zones. Next audit due after August 2020. As per South32 Appin BioBanking Agreement Annual Report. 2020 report due 18th August 2020.	

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Monitoring		Records of human disturbance - Bi-annually	In Control	Nil human disturbance observed at the site (inspected on 26/04/18, 22/10/18, 04/01/19 and 20/02/19). Next audit due after August 2020. As per South32 Appin BioBanking Agreement Annual Report. 2020 report due 18th August 2020.	
Monitoring		Evidence of erosion - Bi-annually	In Control	No areas identified across the management zones which currently require any supplementary erosion control or stabilisation (inspected on 26/04/18, 22/10/18, 04/01/19 and 20/02/19). As per South32 Appin BioBanking Agreement Annual Report. 2020 report due 18th August 2020.	
Monitoring		Evidence of water - Bi-annually	In Control	No evidence of waste was observed during the quarterly site visits on 26/4/18, 22/10/18, 04/01/19 and 20/2/19. As per South32 Appin BioBanking Agreement Annual Report. 2020 report due 18th August 2020.	