



**NSW
Resources
Regulator**

COMPLIANCE AUDIT PROGRAM

BOWDENS SILVER PROJECT - EL5920 & EL6354 EXPLORATION DRILLING PROGRAM



Document control

Published by NSW Resources Regulator

Title: Compliance audit program: Bowdens Silver Project - EL5920 & EL6354 Exploration drilling program – Bowdens Silver Pty Ltd

First published: October 2020

Authorised by: Director Compliance

CM9 reference: DOC20/752654

AMENDMENT SCHEDULE

Date	Version	Amendment
October 2020	1.0	First published

© State of New South Wales through Regional NSW 2020. You may copy, distribute, display, download and otherwise freely deal with this publication for any purpose, provided that you attribute Regional NSW as the owner. However, you must obtain permission if you wish to charge others for access to the publication (other than at cost); include the publication in advertising or a product for sale; modify the publication; or republish the publication on a website. You may freely link to the publication on a departmental website.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (October 2020) and may not be accurate, current or complete. The State of New South Wales (including Regional NSW), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.

Contents

1. Introduction	5
1.1. Background	5
1.2. Audit objectives.....	6
1.3. Audit scope.....	6
1.4. Audit criteria	6
1.5. Publishing and disclosure of information	8
2. Audit methods	9
2.1. Opening meeting.....	9
2.2. Site interviews and inspections	9
2.2.1. Data collection and verification	9
2.2.2. Site inspections.....	9
2.3. Closing meeting.....	10
2.4. Compliance assessment definitions.....	10
2.5. Reporting.....	12
3. Audit findings.....	13
3.1. Work program	13
3.2. Access agreements.....	13
3.3. Native title and exempt areas.....	14
3.4. Community consultation.....	14
3.4.1. Risk assessment.....	14
3.4.2. Community consultation strategy.....	15
3.4.3. Implementation and reporting.....	15
3.5. Exploration activity approvals.....	16
3.6. Environmental management	17
3.6.1. Use of chemicals, fuels and lubricants	17
3.6.2. Water.....	19
3.6.3. Noise and vibration	19

3.6.4. Air quality	20
3.6.5. Waste management	20
3.6.6. Vegetation clearance and surface disturbance.....	20
3.6.7. Roads and tracks	22
3.6.8. Weeds, pest animals and disease	22
3.6.9. Livestock protection	22
3.6.10. Cultural heritage.....	23
3.6.11. Fire prevention	23
3.6.12. Risk assessment.....	23
3.7. Security deposit.....	24
3.8. Rehabilitation.....	24
3.8.1. Risk assessment.....	24
3.8.2. Rehabilitation objectives and completion criteria.....	25
3.8.3. Rehabilitation program	25
3.9. Annual activity reporting	27
3.10. Core and sample storage	28
3.11. Previous licence areas.....	29
3.12. Record keeping	30
4. Compliance management.....	32
4.1. Identifying compliance obligations	32
4.2. Subcontractor management	32
4.3. Inspections, monitoring and evaluation	33
4.4. Titleholder response to draft audit findings	33
5. Audit conclusions.....	34

1. Introduction

1.1. Background

Exploration licence 5920 (EL5920) was granted to Silver Standard Australia Pty Ltd in January 2002. The exploration area is located approximately 19 kilometres north west of Kandos in central NSW. The licence was initially granted over 131 units, but with partial relinquishments at renewals over the years, the licence is now 32 units. Bowdens Silver Pty Ltd (Bowdens Silver) acquired the title in 2016 and was the titleholder at the time of the audit.

EL5920 was originally granted over the combined area of previous exploration licences, namely EL3252, EL3311, EL3671, EL5005, EL5284 and EL5817. These licences were cancelled once EL5920 was granted. The liability for rehabilitation of the exploration activities on these previous exploration licences remained with the titleholder of EL5920 pursuant to condition 13.

EL6354 was granted to Silver Standard Australia Pty Ltd in December 2004. It is immediately adjacent to EL5920 to the north. The licence was initially granted over 43 units but with partial relinquishments at renewals over the years, the licence is now 10 units. Bowdens Silver Pty Ltd (Bowdens Silver) acquired the title in 2016 and was the titleholder at the time of the audit. Exploration drilling in EL6354 commenced in 2020.

Exploration drilling within EL5920 began in October 2002 and several drilling campaigns have been completed since that time. In 2016 and 2017, Bowdens Silver submitted applications for three drilling programs within EL5920:

- Gumarooka drilling program
- Waste emplacement sterilisation drilling program
- Stage 2 exploration drilling program.

In May 2020, Bowdens Silver submitted an application for drilling in EL6354 as part of a regional exploration drilling program.

The above programs (including some modifications) have been approved.

In May 2020, Bowdens Silver was successful in getting a grant under the NSW Government New Frontiers Co-operative Drilling Program for the completion of a regional drilling program that included both EL5920 and EL6354.

As part of the compliance audit program, an audit of the exploration activities associated with the Bowdens Silver project within EL5920 was undertaken on 22 July 2020 by the NSW Resources Regulator within the Department of Regional NSW (the Department). At the time of the inspection in July 2020, seven holes of the current exploration drilling projects had been completed – six in EL5920 and one in EL6354.

1.2. Audit objectives

The objectives of the audit were to:

- undertake a compliance audit of the Bowdens Silver exploration activities against the requirements of the *Mining Act 1992* and the conditions of the exploration licence and activity approvals issued pursuant to that Act
- assess the operational performance of the exploration activities and the ability of the titleholder to implement management systems and controls to provide for sustainable management of the operations.

1.3. Audit scope

The scope of the audit included:

- the exploration activities associated with the Bowdens Silver exploration project including:
 - exploration activities within EL5920 and EL6354, including a selection sample of exploration drillholes from the Stage 2 drilling program and the Gumarooka drilling program
 - borehole sealing and rehabilitation activities for selected drilling activities undertaken since June 2019.
- a review of documents and records pertaining to the exploration activities
- the assessment of compliance for the period commencing 1 June 2019 and ending 22 July 2020.

1.4. Audit criteria

The audit criteria against which compliance was assessed included:

- *Mining Act 1992*, specifically, sections 5, 30, 140, 163C to 163E, 163G, 378D

- Mining Regulation 2016, specifically clauses 59 to 68
- conditions attached to EL5920 (granted 30 January 2002 and last renewed 23 May 2017)
- conditions attached to EL6354 (granted 6 December 2004 and last renewed 27 October 2016)
- exploration activities application (Form ESF4) for the Gumarooka exploration program (EL5920) - modification dated 13 December 2019 and associated approval dated 9 January 2020
- exploration activities application (Form ESF4) for the Stage 2 exploration program (EL5920) – modification 5 dated 22 September 2017 and associated approval dated 3 October 2017
- exploration activities application (Form ESF4) for the waste rock sterilisation drilling program (EL5920) – modification 1 dated 13 November 2017 and associated approval dated 15 October 2017
- exploration activities application (Form ESF4) for the Bowdens Regional Exploration Program (EL6354) –dated 27 March 2020 and associated approval dated 8 May 2020
- *Exploration Code of Practice: Environmental Management* (Version 2, April 2017) published by the (then) NSW Department of Planning and Environment
- *Exploration Code of Practice: Rehabilitation* (Version 2, April 2017) published by the (then) NSW Department of Planning and Environment
- *Exploration Code of Practice: Community Consultation* (Version 1.1, May 2016) published by the (then) NSW Department of Industry – Resources and Energy
- *Exploration Code of Practice: Produced Water Management, Storage and Transfer* (Version 2, April 2017) published by the (then) NSW Department of Planning and Environment
- *Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales* (Version 2, March 2016) published by the (then) NSW Department of Industry – Resources and Energy
- *Exploration Guideline: Annual activity reporting for prospecting titles* (Version 2a, April 2016) published by the (then) NSW Department of Industry, Skills and Regional Development, Division of Resources and Energy

- *ESG4: Guideline for preparing an environmental and rehabilitation compliance report* (Version 2.3, March 2019) published by NSW Resources Regulator

1.5. Publishing and disclosure of information

This audit report will be published on the NSW Resources Regulator's website consistent with Section 365 of the *Mining Act 1992*.

This audit report may be publicly disclosed consistent with the *Government Information (Public Access) Act 2009*.

2. Audit methods

The audit process involved the interview of site personnel, a review of documentation and samples of records provided by the titleholder and/or operator and a site inspection of the operations to determine the level of compliance of the operations and assess the status of the operational performance. The audit process and methodology are described in more detail below.

2.1. Opening meeting

The opening meeting was held onsite at the Bowdens Silver project office on 22 July 2020. The audit team was introduced, and the scope of their responsibilities was conveyed to the auditees. The objectives and scope of the audit were outlined. The methods to be used by the team to conduct the audit were explained, including interview of personnel, review of documentation, examination of records and a site inspection to assess specific compliance requirements.

2.2. Site interviews and inspections

2.2.1. Data collection and verification

Where possible, documents and data collected during the audit process were reviewed on site. Several documents were unable to be reviewed on site and were provided following the site visit.

All information obtained during the audit process was verified by the audit team where possible. For example, statements made by site personnel were verified by viewing documentation and/or site inspections where possible. Where suitable verification could not be provided, this has been identified in the audit findings as not determined.

2.2.2. Site inspections

A site inspection was undertaken of the following sites within EL5920:

- area of rehabilitation near site BGR204 - drilled 2002
- line of drill holes including site BGR164 – drilled in 2001 under previous title EL3252
- site BRC17-019 – RC hole drilled in 2017 and rehabilitation completed in 2018
- site BD20-001 – drilling completed in July 2020 and rehabilitation not yet commenced

- site BD20-010 – drill rig had moved onto the drill pad on the morning of the site inspection and drill rig set up was in progress
- drill pad for BRD18-001 and BRD18-002 – holes capped awaiting further downhole testing
- waste oil storage facility
- core yard.

An inspection of the single hole drilled on EL6354 was not undertaken due to time and access constraints.

2.3. Closing meeting

The closing meeting was held onsite at the Bowdens Silver project office on 22 July 2020. The objectives of this meeting were to discuss any outstanding matters, present preliminary findings and outline the process for finalising the audit report.

2.4. Compliance assessment definitions

The reporting of results from the compliance audit was determined based on the definitions presented in Table 1.

Table 1 Audit assessment categories

ASSESSMENT	CRITERIA
Compliance	Sufficient and appropriate evidence is available to demonstrate the particular requirement has been complied with.
Non-compliance	<p>Clear evidence has been collected to demonstrate the particular requirement has not been complied with. There are three subcategories of non-compliance reflecting the severity and level of risk associated with the non-compliance:</p> <p>NC1 – the absence of planning or implementation of a required operational element which has the potential to result in a significant risk.</p> <p>NC2 – an isolated lapse or absence of control in the implementation of an operational element which is unlikely to result in a significant risk.</p> <p>NC3 – an administrative or reporting non-compliance which does not have a direct environmental or safety significance.</p>

ASSESSMENT	CRITERIA
	<p>Note: The identification of a non-compliance in this audit may or may not constitute a breach of, or offence under, the <i>Mining Act 1992</i>. Non-compliances identified in this audit report may be further investigated by the Regulator and regulatory actions may be undertaken.</p>
<p>Observation of concern</p>	<p>Where an auditee may be compliant at the time of the audit but there are issues that exist that could result in the potential for future non-compliance if not addressed.</p> <p>Observation of concern was also used where an issue may not have particular compliance requirements, but which was not conducive to good management or best practice.</p>
<p>Suggestion for improvement</p>	<p>Where changes in processes or activities inspected or evaluated at the time of the audit could deliver improvement in relation to risk minimisation, sustainable outcomes and management practices.</p>
<p>Not determined</p>	<p>The necessary evidence has not been collected to enable an assessment of compliance to be made within the scope of the audit.</p> <p>Reasons why the audit team could not collect the required information include:</p> <ul style="list-style-type: none"> ■ insufficient information on the file relating to the period covered by the audit or insufficient evidence collected to reach a conclusion ■ the wording on the criteria (approval condition) meant that no evidence could be gathered, or it was too difficult to gather the evidence. <p>A ‘not determined’ assessment was also made where the condition was outside of the scope of the audit.</p>
<p>Not applicable</p>	<p>The circumstances of the authorisation or title holder have changed and are no longer relevant (e.g. no longer mining, mining equipment and plant has been removed).</p> <p>An invoking element in the criteria was not activated within the scope of the audit.</p>

2.5. Reporting

Following completion of the site audit, the audit checklists were completed, and audit notes were reviewed to compile a list of outstanding matters to be noted in the audit report. This report was prepared to provide an overview of the operational performance of the site in relation to the exploration activities and identify any non-compliances or observations of concern noted by the auditors during the site inspections and interviews.

The draft audit findings were forwarded to Bowdens Silver for comment. Consideration was given to the representations made during the finalisation of the audit report as discussed in the audit findings.

3. Audit findings

3.1. Work program

Condition 1 of EL5920 and EL6354 requires the licence holder to carry out the operations described in the approved work program. Work program WP-EL5920-2017-2023 was approved by the (then) Division of Resources and Energy (DRE) on 27 February 2017 as part of the renewal of EL5920. Work program WP-EL6354-2015-2020 was approved by the (then) Division of Resources and Energy (DRE) on 22 December 2015 as part of the renewal of EL6354.

Bowdens Silver are in year 4 of the renewal period for EL5920 and in year 5 of the renewal period for EL6354. Activities proposed for year 4 of EL5920 include resource infill drilling and further definition drilling of exploration targets. Activities proposed for year 5 of EL6354 include one planned drill hole and continued geological mapping and geochemical sampling. Bowdens Silver were granted funding under the New Frontiers Co-operative Drilling Program for a regional drilling program on EL5920 and EL6354. Drilling was in progress at the time of the audit.

Evidence in the form of annual exploration reports, annual work programs, geological data, and other records were reviewed to verify that the work programs had been generally progressing as planned. No variations to the approved work program for EL5920 have been sought over the three years since renewal. Variations have been sought for EL6354 where RC drilling was proposed in year 4 (2018-2019) but Bowdens Silver's review of available exploration data for EL 6354 warranted the undertaking of a drill program at that time with more data needed to generate a prospective target. Drilling in EL6354 was undertaken in 2020 as planned.

Exploration data is maintained by the Bowdens Silver geologists and submitted to the Department's Mining Exploration and Geoscience (MEG) with the annual activity reports as required.

3.2. Access agreements

Section 140 of the *Mining Act 1992* states that 'the holder of a prospecting title must not carry out prospecting operations on any particular area of land except in accordance with an access arrangement or arrangements applying to that area of land'. The access arrangement was required to be agreed in writing between the holder of the prospecting title and each landholder of that area of land.

Bowdens Silver advised that it owns most of the land within the EL area and access agreements were not required. No drilling has been undertaken on land within EL5920 which is not owned by Bowdens Silver. One exploration borehole has been drilled on EL6354. Land within EL6354 is not owned by

Bowdens Silver and a standard land access agreement was negotiated and signed with the landowner prior to drilling.

3.3. Native title and exempt areas

Condition 2 of EL5920 and EL 6354 requires the licence holder to obtain the prior written consent of the Minister before carrying out any activities on land on which native title had not been extinguished. Similarly, Section 30 of the *Mining Act 1992* requires the consent of the Minister before a licence holder undertakes any activities within an exempted area.

Bowdens Silver commissioned McCullough Robertson to undertake a native title extinguishment report over both EL5920 and EL6354 as part of the preparations for the environmental impact statement for the Bowdens Silver project. To date, drilling has not been undertaken in areas to which native title may have applied so further approvals under condition 2 were not required. It is now considered that native title has been extinguished.

Additionally, Bowdens Silver has identified exempted areas with the exploration licence areas and mapping was provided to demonstrate that drilling had not been undertaken in those areas. Further approvals under section 30 of the *Mining Act 1992* were not required.

3.4. Community consultation

Condition 3 of EL5920 and EL6354 requires the licence holder to carry out community consultation in relation to the planning and conducting of exploration activities. Community consultation is to be carried out in accordance with the requirements of *Exploration Code of Practice: Community Consultation*.

An assessment against the mandatory requirements of the code of practice was undertaken as documented in the following sections.

3.4.1. Risk assessment

Mandatory requirement 1 of the code of practice requires the titleholder to conduct a risk assessment to identify and consider the range of opportunities and potential threats associated with community consultation and engagement.

Bowdens Silver had undertaken a risk assessment for the community consultation aspects of the drilling program, based on the template provided in table 2 of the code of practice. The assessed activity impact level was medium, which the auditor concurred with given the known community sensitivities

associated with the Bowdens Silver project. The risk assessment was noted to be documented and Bowdens staff advised that the risk level was reviewed annually.

3.4.2. Community consultation strategy

Mandatory requirement 2 requires the preparation of a community consultation strategy to manage the risks identified in the risk assessment. Mandatory requirement 3 sets out the requirements for preparation of the community consultation strategy.

Bowdens Silver had prepared a community consultation strategy for the exploration program on EL5920 and EL6354 corresponding with the activity impact assessment documented under mandatory requirement number 1.

The strategy was reviewed during the audit and was found to address the requirements of the code of practice. For example:

- stakeholder identification was addressed in section 3.2
- engagement mechanisms were identified in section 4.2 of the strategy and in the detailed community and landholder liaison plan
- the complaints management process was documented in section 4.6
- section 5 of the strategy set out the requirements for monitoring and revising the strategy based on an evaluation of the landholder engagement activities.

During the preparation of the environmental impact statement for the Bowdens Silver mining project, the company established a community consultative committee (CCC). The CCC was identified as a stakeholder in the community consultation strategy and the Bowdens Silver Community Liaison Officer advised that exploration activities are included in the scope of the CCC meetings.

3.4.3. Implementation and reporting

Mandatory requirement 4 requires the titleholder to implement, monitor and report annually on the community consultation strategy.

Evidence was available to demonstrate that Bowdens Silver had generally implemented the community consultation strategy. For example:

- minutes of community consultative committee meetings
- excel based complaints register and complaints records

- community contact log
- project information sheets and newsletters.

Although typically only a requirement for high impact activities (as identified in section 1.9 of appendix 1 of the code of practice), Bowdens Silver had employed a community liaison officer to be responsible for the implementation of the community consultation strategy and providing annual reports in accordance with the code of practice requirements.

Community consultation reports for EL5920 and EL6354 for the 2019 reporting year were submitted as part of the annual activity reporting required by condition 8 of EL5920 and condition 10 of EL6354. The reports were reviewed by MEG and accepted as adequate. The 2019 community consultation reports were reviewed by the auditor and found to be generally in accordance with the guidance in appendix 2 of the code of practice.

3.5. Exploration activity approvals

Section 23A of the *Mining Act 1992* required the holder of an exploration licence to obtain an activity approval prior to carrying out assessable prospecting operations.

Bowdens Silver had undertaken several exploration drilling programs in EL5920 and EL6354 since 2015. Applications for activity approval have been made and granted for each drilling program as follows:

- exploration activities application (Form ESF4) for the Gumarooka exploration program (EL5920) - modification dated 13 December 2019 and associated approval dated 9 January 2020
- exploration activities application (Form ESF4) for the waste rock emplacement sterilisation drilling program (EL5920) – modification 1 dated 13 November 2017 and associated approval dated 15 November 2017
- exploration activities application (Form ESF4) for the Stage 2 exploration program (EL5920) – modification 5 dated 22 September 2017 and associated approval dated 3 October 2017
- exploration activities application (Form ESF4) for the Bowdens Regional Exploration Program (EL6354) –dated 27 March 2020 and associated approval dated 8 May 2020

The audit focussed on the Gumarooka and waste rock emplacement sterilisation drilling programs in EL5920. The Stage 2 exploration program had not commenced, and an application had been submitted by Bowdens Silver to modify the Stage 2 program from that previously approved.

Generally, evidence was available to confirm that activities are being carried out in accordance with the exploration activity approval and the codes of practice as documented in the following sections.

3.6. Environmental management

Condition 4 of EL5920 and EL6354 requires the licence holder to prevent or minimise, so far as is reasonably practicable, any harm to the environment arising from the activities carried out under the licence. Condition 2 of the exploration activity approval required the licence holder to carry out the activity in compliance with part B of the *Exploration Code of Practice: Environmental Management*.

No evidence of environmental harm beyond that approved in the exploration activity approvals was observed at the sites visited during the site inspection. Ophir Drilling rig RIG01 was set up on site BD20-010 within EL5920 at the time of the audit. The exploration drilling was observed to be generally undertaken in accordance with the *Exploration Code of Practice: Environmental Management* as documented in the following sections.

3.6.1. Use of chemicals, fuels and lubricants

Mandatory requirements 1.1 to 1.4 identified the requirements for the management of chemicals, fuels and lubricants used during exploration activities.

Drilling fluids, oils, greases and other chemicals were observed to be stored in a trailer which is towed to each drill site location and banded appropriately. The Ophir Drilling supervisor advised that all fluids used as part of drilling operations were non-hazardous. Several 20 litre drums of AMC DET XTRA were observed in the trailer. The labelling on the drums identified the substance as non-hazardous chemical and non-dangerous goods (Figure 1). Diesel for the vehicles and equipment was observed to be stored in a self-banded fuel tank on the back of the driller's light vehicle.

The drilling crew demonstrated a good knowledge of the correct storage and handling of chemicals and fuels in accordance with relevant safety data sheets. A fully stocked spill kit was observed on site at BD20-010 (Figure 2). The kit included items such as absorbent materials, spill control matting, and spill socks. The drill operators were able to identify each component of the kit and described in detail how each would be used in the event of an incident.

Drill rig set-up was in progress during the site inspection. Drilling had not commenced but a rig nappy was observed adjacent to the drill rig, ready to be placed under it (Figure 3).

Bowdens Silver had provided a waste oil storage container at one of its properties. This was observed to be suitably banded in a roofed storage shed, as well as having a guard to restrict access (Figure 4).

Figure 1 Example of non-hazardous drilling chemicals



Figure 2 Fully stocked spill kit at BD20-010



Figure 3 Rig nappy ready to be placed under drill rig



Figure 4 Bunded waste oil storage



3.6.2. Water

Mandatory requirements 2.1 and 2.2 require the licence holder to implement all measures to prevent, so far as reasonably practicable, causing adverse impacts on water quality and quantity, including groundwater levels and pressure.

Water was used in the drilling process. This water was sourced from a dam on the property and pumped to a portable water tank, sited near the drill sites, through a poly-pipe network.

Inground sumps have been used for the drilling process (Figure 5). Once drilling has been completed, the water in the sumps was left to settle, tested, and then released if testing showed the water quality to be suitable. If release of water from the sump was not available as an option, the water was removed from the sump using a sucker truck.

Once the water had been released or removed from the sump, the sediments were left to dry (Figure 6) and then the sumps filled in and rehabilitated.

Figure 3 Fenced inground sump at BD20-001



Figure 4 Sediment left to dry out before backfilling at BD20-001



3.6.3. Noise and vibration

Mandatory requirement 3.1 requires the licence holder to implement all practicable noise management measures to ensure that noise levels meet acceptable noise criteria for sensitive receivers.

The drilling program was being undertaken in paddocks and ridge country approximately one kilometre from the nearest sensitive receptor. The sound power level for the rig had been calculated and Bowdens Silver had undertaken noise monitoring at different distances from the rig to establish a baseline. It was noted that no sensitive receivers, including residences, were visible from any of the drill sites inspected.

3.6.4. Air quality

Mandatory requirement 4.1 requires the title holder to implement all measures to prevent, so far as practicable, pollution caused by dust and other air pollutants.

The Ophir Drilling supervisor advised that drilling fluids were used for all cored holes, which minimised the generation of dust. The rig was not operational during the audit site inspection, but it was noted that there were no sensitive receptors within 500 metres of the drill sites.

No air quality issues were observed at any of the sites inspected during the audit site inspection. It was noted that recent rain in the area had dampened ground conditions.

3.6.5. Waste management

Mandatory requirement 5.1 requires the title holder to manage all waste in a manner which does not, as far as practicable, cause harm to the environment.

Waste from the drilling program was observed to be generally minimal. Ophir Drilling staff advised that domestic waste (i.e. lunch wrappings, drink containers) were collected and stored in waste bags for disposal in the skip bin at the project office. Domestic garbage bags were observed in the driller's site caravan. There was generally no evidence of littering at the sites inspected.

3.6.6. Vegetation clearance and surface disturbance

Mandatory requirements 6.1 to 6.4 require the titleholder to:

- minimise the extent of any vegetation clearing and surface disturbance to as low as practicable
- implement all measures to prevent, so far as practicable:
 - adverse impacts to fauna caused by vegetation clearing or surface disturbance
 - causing any land degradation or pollution of land and water
 - harm to the environment when disturbing land in areas of potential or actual acid sulfate soils.

Evidence was sighted to confirm that drill sites are marked out in advance of drilling. Blue flagging tape was observed on several trees at each of the drill sites to demarcate the drill pad area (Figure 7). Generally, there was no clearing of trees outside the marked area. Cleared trees were windrowed at the site of each drill pad, ready to be respread during rehabilitation activities once drilling had been completed (Figure 8). These vegetation windrows were also used as erosion and sediment controls with little evidence of erosion or sedimentation observed at any of the drill sites inspected.

Figure 5 Blue flagging tape to mark drill pad site



Figure 6 Windrowed vegetation at the edge of a drill site



Bowdens Silver has established a gateway process, using the iAuditor software, with a series of 'gates' that must be passed during the drilling program. For example, Gate 1 – Prepare drill pad includes a checklist that considers whether:

- the site is located according to approved co-ordinates
- the drill pad disturbance area has been identified and clearly marked
- appropriate erosion and sediment controls have been installed
- a Gate 2 - Ecology checklist has been completed for the site.

The Gate 2 – Ecology checklist includes a general site ecology check including identifying any mature trees that need to be removed to construct the drill pad.

Examples of the use of these gate checklists were reviewed by the audit team to confirm that the system is implemented.

3.6.7. Roads and tracks

Mandatory requirements 7.1 to 7.5 require the titleholder to:

- consult with relevant landholders prior to establishing any new roads or tracks
- plan, design, construct and use roads and tracks in a manner which minimises the area and duration of disturbance
- construct any crossing of rivers, permanent and intermittent water lands and wetlands to prevent impacts on fish habitats
- refrain from using any unsealed road or track during wet conditions to prevent damage to that road or track
- repair all damage to existing roads and tracks resulting from exploration activities.

Bowdens Silver owned the land on which drilling was undertaken on EL5920 so consultation with the landowner over the planning and design of new tracks was not required. The tracks observed during the audit site inspection were generally well maintained and trafficable.

Both Ophir Drilling and Bowdens Silver staff advised that the drilling sites were shut down in periods of wet weather and no trucks were moved during rain events. Rain had occurred in the area in the weeks before the site inspection and no evidence of damage to roads or tracks was observed during the audit site inspection.

3.6.8. Weeds, pest animals and disease

Mandatory requirement 8.1 requires the titleholder to implement all practicable measures to prevent the introduction and spread of weeds, pest animals and animal and plant diseases.

Section 3.5.9 of the REF for the drilling program identified that all vehicles, machinery and equipment would be inspected and cleaned prior to arriving on site to prevent the spread of weed species. Examples of rig inspection checklists were provided for review by the audit team. The Ophir Drilling supervisor also advised that the drill rig and other vehicles were washed down before arriving on site, with washdown noted as an item on the drillers' plods.

3.6.9. Livestock protection

Mandatory requirement 9.1 requires the titleholder to implement all measures to prevent, as far as practicable, causing adverse impacts to livestock.

No livestock was observed in the paddocks or other areas where drilling had taken place. Bowdens Silver advised that sheep were moved to different paddocks to avoid drilling locations. Given the absence of livestock from the drilling areas, no specific controls were required.

3.6.10. Cultural heritage

Mandatory requirement 10.1 requires the titleholder to implement all measures to prevent, so far as practicable, harm to Aboriginal cultural heritage and non-indigenous cultural heritage.

Cultural heritage searches and assessments were completed during the preparation of the Review of Environmental Factors (REFs) lodged with the activity applications for the drilling projects. The presence of cultural heritage artefacts was checked by the Bowdens Silver Environmental Officer as part of the Gate 1 – Prepare drill pad checklist and when required, barrier fencing tape was used to fence off known sites along access tracks.

3.6.11. Fire prevention

Mandatory requirement 11.1 requires the titleholder to implement all measures to prevent, as far as practicable, the ignition and spread of fire.

The Ophir Drilling supervisor advised that the drill rig is equipped with fire suppression systems and fire extinguishers are located on the drill rig, on the rod truck and in the support vehicles. Ophir Drilling had also implemented a process for hot work which included an assessment of the potential for fire ignition.

Bowdens Silver staff and the Ophir Drilling supervisor advised that they had procedures for checking the NSW Rural Fire Service website daily for fire danger ratings and the presence of fires nearby. This information was available and noted to be included on the Bowdens Silver fortnightly rig inspection checklist.

3.6.12. Risk assessment

Mandatory requirement 12.1 requires the titleholder to monitor the risks associated with activities and, if the risk associated with an activity changes, implement revised environmental management controls.

The REFs prepared for each of the drilling programs provide a comprehensive identification and assessment of environmental impacts. Management strategies and controls to minimise impacts are documented in the REF and summarised in the summary of potential impacts in table 12. The statement of commitments in table 13 of the REF included the controls required to manage the identified impacts.

In addition to the REF, Bowdens Silver had developed an exploration site wide health, safety and environmental risk assessment which provided information on current controls and any proposed

additional controls where the current risk level was ranked high. This site wide risk assessment is reviewed and updated annually.

3.7. Security deposit

Condition 5 of EL5920 and EL6354 requires the licence holder to provide a security deposit to secure funding for the fulfilment of obligations under the licence.

The security deposit required for EL5920 was reassessed following the exploration activity approvals granted in 2016 and 2017 and was increased to \$347,000. This amount is held by the Department. The modifications to the exploration activity approvals since 2017 have not required any increase in the security deposit.

The security deposit for EL6354 was assessed as \$10,000 and is held by the Department. The exploration activity approval in May 2020 did not trigger the requirement for any increase in security, given that only one hole was planned to be drilled.

3.8. Rehabilitation

Condition 6 of EL5920 and EL6354 requires the titleholder to carry out rehabilitation of all disturbance caused by activities carried out under the licence in accordance with the requirements of the *Exploration Code of Practice: Rehabilitation*.

An assessment against the mandatory requirements of the code of practice was undertaken for the 2020 drilling program in EL5920 as documented in the following sections. A similar assessment was not conducted for EL6354 because the exploration drill site was not inspected during the audit.

3.8.1. Risk assessment

Mandatory requirement 1 requires the titleholder to conduct a risk assessment to evaluate the range of potential threats and opportunities associated with rehabilitating disturbed areas to a condition that could support the intended final land use.

Rehabilitation risk assessments were provided as part of the submission of rehabilitation objectives and completion criteria. Examples reviewed during the audit included:

- Waste rock emplacement sterilisation drilling project Version 0 dated 19 July 2017
- EL5920 Mod 5 IP extension drilling activity approval Version 0 dated 5 October 2017
- Rehabilitation management plan Version 1 dated January 2020.

A range of hazards were identified and assessed, including delay in vegetation establishment, weed establishment in rehabilitated areas, animal ingress, and extreme rainfall events. Controls were identified for each potential threat.

3.8.2. Rehabilitation objectives and completion criteria

Mandatory requirement 2 requires the titleholder, no later than 14 days prior to the commencement of surface disturbing activities, to provide to the Secretary a copy of specific, measurable, achievable, realistic and time-bound rehabilitation objectives and completion criteria. For higher risk prospecting operations, a rehabilitation management plan is required to be prepared and submitted with the rehabilitation objectives and completion criteria.

The exploration activity approval application and REF lodged by Bowdens Silver for each of the drilling programs indicated that the total surface disturbance area was less than five hectares for each program. The drilling programs individually did not fall within the definition of a higher risk activity under the code of practice and rehabilitation management plans were not required to be developed. Although not technically required, Bowdens Silver prepared a rehabilitation management plan that applies to assessable exploration activities. This plan includes:

- a rehabilitation risk assessment
- rehabilitation objectives and completion criteria
- rehabilitation procedures and risk mitigation measures
- measurement and monitoring of rehabilitation performance outcomes.

The rehabilitation objectives and completion criteria were noted to be based on the template in appendix 2 of the *Exploration Code of Practice: Rehabilitation*. These were reviewed by the auditor during the audit and found to be appropriate for the drilling program in progress.

The rehabilitation objectives and completion criteria, and the rehabilitation management plan, were submitted to the Regulator as required by the mandatory requirement of the code of practice and were accepted as satisfactory.

3.8.3. Rehabilitation program

Mandatory requirement 3 states that the titleholder must develop, implement and complete a rehabilitation program (which includes a monitoring program) to rehabilitate disturbed areas to a condition that can support the intended final land use. Mandatory requirement 4 states that the

titleholder must commence rehabilitation of a site as soon as reasonably practicable following the completion of activities on that site.

Rehabilitation was undertaken as soon as practicable after drilling activities had finished. Rehabilitation of drill sites included:

- removal of drill collars to below ground level
- backfilling and reshaping of drill pad areas
- ripping of the area
- any salvaged topsoil containing seed banks was re-spread over the reshaped areas
- any salvaged vegetation was re-spread over the area
- installation of erosion and sediment controls as required.

An example of rehabilitation of a drill site completed in 2018 is shown in Figure 9 and Figure 10.

Figure 7 Rehabilitation at BRC17-019 - area reshaped and ripped, vegetation re-establishing



Figure 8 Salvaged vegetation and sediment fencing at rehabilitated site BRC17-019



Rehabilitation monitoring was documented on Gate 5 – Rehabilitation checklists. Monitoring was undertaken at intervals of one to three months post-rehabilitation, and again at six to 12 months post-rehabilitation. Checks included:

- vegetation establishment
- presence of weeds

- erosion and sediment controls in place and effective.

3.9. Annual activity reporting

Section 163C of the *Mining Act 1992*, clause 59 of the Mining Regulation and condition 8 of EL5920 and condition 10 of EL6354 require the licence holder to submit reports annually within one calendar month following grant anniversary date. Annual activity reports are required to be prepared in accordance with the *Exploration guideline: Annual activity reporting for prospecting titles*.

For the last three years, Bowdens Silver has been submitting annual activity reports comprising:

- annual geological report
- revised work program
- environmental rehabilitation and compliance report
- community consultation report.

Reports for EL5920 and EL6354 for the 2019 reporting year were reviewed during the audit:

- Bowdens Silver Project, EL5920, Annual Report 31 January 2019 to 30 January 2020, submitted 28 February 2020
- Prospecting Titles Work Program, EL5920 year 3 submission 2019
- Environmental and Rehabilitation Compliance Report for Exploration Licence 5920 Bowdens Silver Pty Ltd, 31 January 2019 to 30 January 2020, submitted 28 February 2020
- Bowdens Silver Project, EL5920 Annual Community Consultation Report, 31 January 2019 to 30 January 2020, submitted 28 February 2020
- Bowdens Silver Project, EL6354, Annual Report 6 December 2018 to 5 December 2019, submitted 20 December 2019
- Prospecting Titles Work Program, EL6354 year 5 submission 2019
- Environmental and Rehabilitation Compliance Report for Exploration Licence 6354 Bowdens Silver Pty Ltd, December 2018 to December 2019, submitted December 2020
- Bowdens Silver Project, EL6354 Annual Community Consultation Report, 6 December 2018 to 5 December 2019, submitted 20 December 2019.

Generally, reports were found to be in accordance with the MEG and/or Regulator templates and guidance material. The 2019 reports were all submitted within the required timeframes.

3.10. Core and sample storage

Clause 65 of the Mining Regulation requires the holder of an authority to, so far as is reasonably practicable, collect, retain and preserve:

- all drill cores remaining after sampling
- characteristic samples of the rock or strata encountered in any drill holes.

All core and samples collected were required to be labelled, stored and managed in a manner that preserved the integrity of the core or samples.

For the holes inspected during the audit, core was produced from the diamond drilling. The cores were observed to be stored in modular plastic core trays and were generally stored in an open core yard (Figure 11) at the Bowdens Silver project office and workshop complex. Core and samples from both EL5920 and EL6354 are stored in the core yard. Each core tray was observed to be covered with a lid (Figure 12), and labelled with hole number, tray number, start and finish depths (Figure 13). Any zones of loss of core were identified with wooden or plastic blocks containing relevant information. Core trays were observed to be present for each of the holes inspected during the audit.

Some older core and the chip samples from previous drilling programs were observed to be stored in a well organised storage shed (Figure 14). Discussions with Bowdens Silver staff identified that no core had been disposed of to date.

Figure 9 Core trays stacked on pallets in the core yard



Figure 11 Example of core tray labelling



Figure 10 Lids on core trays stored in the open core yard



Figure 12 Chip samples on racks in the storage shed



3.11. Previous licence areas

Condition 13 of EL5920 requires the licence holder to rehabilitate any areas disturbed by operations carried out under the previous exploration licences – EL3252, EL3311, EL3671, EL5005, EL5284 and EL5817.

Several examples of previously drilled exploration holes were observed during the audit site inspection (Figure 15 and Figure 16). Bowdens Silver staff advised that a program is in place to map and photograph the current condition of each of these holes. Following completion of the inventory, a

rehabilitation program will be developed to progressively rehabilitate the holes, starting with those holes that are outside the proposed Bowdens Silver Mine footprint.

Figure 13 An area of older rehabilitation - note white PVC casings still above ground level – drilling in this area in both 1998 and 2002



Figure 14 White PVC casings marking a line of holes drilled on EL3252 in 2001



3.12. Record keeping

Sections 163D and 163E of the *Mining Act 1992*, related to the creation and maintenance of records required under the Act, the regulations, or a condition of title state that records must be kept in a legible form for production to any inspector, and must be maintained for a period of four years after the expiry or cancellation of the title. Specific requirements for the types of records to be maintained for exploration activities are detailed in the mandatory requirements of the exploration codes of practice as follows:

- mandatory requirement 6 of the rehabilitation code of practice
- mandatory requirement 13.1 of the environmental management code of practice
- mandatory requirement 5 of the community consultation code of practice.

Records reviewed during the audit demonstrated that Bowdens Silver has generally maintained records as required by the licence conditions and the exploration codes of practice. Examples of mandatory and other records reviewed included:

- land access agreements
- community and landholder liaison plan
- community contact log
- complaints register
- examples of environmental audit records for each drill pad
- examples of drilling operations rig inspection checklists
- risk assessment documentation, including:
 - community consultation risk assessment
 - rehabilitation risk assessment
 - exploration site-wide health, safety and environmental risk assessment.
- examples of the implementation of the gateway process, for example:
 - Gate 1 – Prepare drill pad records
 - Gate 2 – Ecology records
 - Gate 4 – Drilling operations records
 - Gate 5 – Rehabilitation records.

4. Compliance management

4.1. Identifying compliance obligations

Identifying compliance obligations is a critical step in the development of an effective compliance management system. Compliance obligations for an exploration project can include:

- regulatory requirements (for example, the *Mining Act 1992*)
- conditions imposed on the grant, renewal, or transfer of exploration licences
- exploration activity approvals
- exploration codes of practice
- specific commitments made by the organisation (for example, REF commitments).

Once identified, compliance obligations should be reviewed periodically to identify any changes in those obligations (i.e. changes in legislation).

Discussions with Bowdens Silver staff showed that staff had a good understanding of the requirements under the *Mining Act 1992*, the conditions of title, and the exploration activity approval. Bowdens Silver had used the Regulator's self-assessment checklist for exploration to undertake its own assessment against its compliance obligations. Generally, evidence was available to confirm that compliance obligations have been identified and understood.

4.2. Subcontractor management

Contractors are often used to undertake specialist tasks (i.e. exploration drilling). Whilst the responsibility for compliance or the implementation of environmental controls is often passed to the contractor, the licence holder will retain accountability for compliance with its licence conditions and other compliance obligations. It is important that the licence holder exercises management control of its contractors by specifying contract requirements, providing oversight of contracted works, and evaluating the performance of the contractor during the contracted works.

Bowdens Silver was using a contract driller for the drilling program. Environmental and compliance obligations of the driller were specified in the contract documents. An induction process for the drilling crew was also established with the induction highlighting the environmental and safety obligations for the drilling crew.

During the drilling program, the Bowdens Silver geologist did a fortnightly rig inspection which included a range of environmental checks including:

- spill kit is available and stocked
- crew are aware of fire danger rating for the day and the weather forecast
- drill site access track and site clearing are kept to a minimum
- vehicles are using established tracks
- rig nappies and other bunds are in place and effective.

In addition to the fortnightly rig inspection, the Bowdens Silver environmental supervisor completes a periodic audit of the drilling program using the iAuditor software.

The activities of the drilling crew were documented on the daily surface drilling report which Ophir Drilling provides to Bowdens Silver.

4.3. Inspections, monitoring and evaluation

An effective inspection, monitoring and evaluation process is required to:

- monitor the implementation of the risk controls
- evaluate the effectiveness of those controls based on an assessment of inspection and monitoring data
- implement an adaptive management approach if monitoring shows that controls may be ineffective.

Bowdens Silver had developed a gateway process for the exploration drilling programs with a series of checks (called gates) at various stages throughout the life of the program. These inspection gates were documented using the iAuditor software package. Examples of the use of the gate checklists were reviewed by the audit team which confirmed that the system is well implemented and documented.

4.4. Titleholder response to draft audit findings

Bowdens Silver was provided with a copy of the draft audit report and invited to submit a response to the draft audit findings. The response from Bowdens Silver indicated they had no specific comments on the content of the draft report. No changes to the draft were made in the final version.

5. Audit conclusions

From the evidence reviewed during the audit, and observations made on site during the audit site inspections, it was concluded that Bowdens Silver has achieved a high level of compliance with the requirements of the exploration licences, exploration activity approval and the exploration codes of practice.

Both the Bowdens Silver staff and the contract driller had a good knowledge of the environmental issues and controls associated with the drilling activities. Evidence was generally available to confirm implementation of the controls. Robust and comprehensive inspection and monitoring systems have been developed, with these inspections being documented using the iAuditor software.

No non-compliances or observations of concern were identified during the audit.