



**NSW  
Resources  
Regulator**

COMPLIANCE AUDIT PROGRAM

# **EL8357 LADY ILSE EXPLORATION DRILLING PROGRAM**

Magmatic Resources Ltd



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# 1. Introduction

## 1.1. Background

Exploration licence 8357 (EL8357) was granted to Modeling Resources Pty Ltd in April 2015. The exploration area is in an agricultural area about 11 kilometres north of Wellington in Central NSW. Modeling Resources is a wholly owned subsidiary of Magmatic Resources Ltd which is the operator of the title.

Exploration drilling within EL8357 began in 2017, with three drilling programs being completed between 2017 and 2019. In late 2019 and early 2020, Magmatic Resources submitted three applications to conduct further exploration activities for assessable prospecting activities. The description of activities included:

- up to 65 auger holes, typically 5 to 10 metre depths, using a trailer mounted auger rig (auger drilling)
- 10 drill sites about 30 metres by 30 metres for RC drilling at each site using a track mounted drill rig (Lady Ilse RC drilling)
- 12 drill sites about 20 metres by 20 metres for RC drilling at each site (Lady Ilse RC/DD Programme 2).

The applications were approved by the NSW Resources Regulator in January, May and July 2020 respectively. At the time of the inspection in July 2020, nine RC holes had been completed in the current drilling program.

As part of the compliance audit program, an audit of the exploration activities associated with the Lady Ilse project within EL8357 was undertaken on 23 July 2020 by the Regulator within the Department of Regional NSW (the Department).

## 1.2. Audit objectives

The objectives of the audit were to:

- undertake a compliance audit of the Modeling Resources Pty Ltd (titleholder) and Magmatic Resources Pty Ltd (operator) 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 and/or its operator 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 Lady Ilse exploration project including:
  - exploration activities within EL8357, including a selected sample of exploration drillholes and auger holes
  - borehole sealing and rehabilitation activities for selected exploration activities undertaken since June 2019.
- a review of documents and records pertaining to the exploration activities
- the assessment of compliance for the period starting 1 June 2019 and ending 23 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 EL8357 (granted 8 April 2015 and renewal dated 24 May 2018)
- exploration activities application (ESF4) dated 11 December 2019 (Auger drilling) and associated approval dated 23 January 2020
- exploration activities application (ESF4) dated 24 April 2020 (Lady Ilse RC Drilling) and associated approval dated 13 May 2020
- exploration activities application (ESF4) dated 9 June 2020 (Lady Ilse RC/DD Programme 2) and associated approval dated 1 July 2020
- *Exploration Code of Practice: Environmental Management* (Version 2, April 2017)
- *Exploration Code of Practice: Rehabilitation* (Version 2, April 2017)

- *Exploration Code of Practice: Community Consultation* (Version 1.1, May 2016)
- *Exploration Code of Practice: Produced Water Management, Storage and Transfer* (Version 2, April 2017)
- *ESG4: Guideline for preparing an Environmental and Rehabilitation Compliance Report for exploration* (Version 2.1 November 2016)
- *Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales* (Version 2, March 2016)
- *Exploration Guideline: Annual activity reporting for prospecting titles* (Version 2a, April 2016) published by 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 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 in the sections below.

### 2.1. Opening meeting

The opening meeting was held onsite on 23 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 the 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:

- auger drilling line – completed and rehabilitated, paddock ploughed and cropped
- drillhole 20LIDD001 – hole completed and rehabilitated, paddock ploughed and cropped
- drillhole 20LIRC005 – drilled July 2020 with site clean-up completed but rehabilitation not yet started

- drillhole 20LIRC006 – drilled July 2020 with site clean-up completed but rehabilitation not yet started
- drillhole 20LIRC009 – drilling completed 22 July 2020, rehabilitation not yet started
- drillhole 20LIRC010 – drilling in progress.

## 2.3. Closing meeting

The closing meeting was held onsite on 23 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
<b>Compliance</b>	Sufficient and appropriate evidence is available to demonstrate the particular requirement has been complied with.
<b>Non-compliance</b>	<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><b>NC1</b> – the absence of planning or implementation of a required operational element which has the potential to result in a significant risk.</p> <p><b>NC2</b> – 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><b>NC3</b> – an administrative or reporting non-compliance which does not have a direct environmental or safety significance.</p> <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>
<b>Observation of concern</b>	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.

ASSESSMENT	CRITERIA
	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.
<b>Suggestion for improvement</b>	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.
<b>Not determined</b>	<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"> <li>■ insufficient information on the file relating to the period covered by the audit or insufficient evidence collected to reach a conclusion</li> <li>■ the wording on the criteria (approval condition) meant that no evidence could be gathered, or it was too difficult to gather the evidence.</li> </ul> <p>A ‘not determined’ assessment was also made where the condition was outside the scope of the audit.</p>
<b>Not applicable</b>	<p>The circumstances of the authorisation or titleholder 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 Magmatic Resources 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 EL8357 requires the licence holder to carry out the operations described in the approved work program. Work program WP-EL8357-2018-2021 was approved by (then) Division of Resources and Energy (DRE) on 24 May 2018 as part of the renewal of EL8357.

Magmatic Resources were in year 2 of the work program (2019-2020). Intended activities for year 2 in the approved work program included:

- follow-up reverse circulation (RC) and diamond drilling (DD) of advanced targets
- expansion of broader regional reconnaissance including soil sampling, rock chipping and mapping.

Auger drilling was completed in 2019 and RC drilling was in progress at the time of the audit. The work program was resubmitted with the annual report for year 1 with no variation. The work program appears to be tracking in accordance with the approved program.

Exploration data is maintained by the Magmatic Resources 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, '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.

Access agreements were observed to be in place for the properties upon which drilling was undertaken. Discussion with the landholder, on whose property drilling was in progress, confirmed that the access agreement was in place and he has been regularly consulted during the drilling program.

### 3.3. Native title and exempt areas

Condition 3 of EL8357 requires the licence holder to obtain the prior written consent of the Minister before carrying out any activities on land on which native title has 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.

Magmatic Resources had undertaken mapping and title searches to identify any exempted areas or areas to which native title may be applicable within the EL area. Several crown road reserves and a common were identified. Drilling programs have been planned to avoid those areas such that further approvals have not been required.

Drilling in progress at the time of the audit was undertaken on freehold land where native title was extinguished.

### 3.4. Community consultation

Condition 3 of EL8357 requires the licence holder to carry out community consultation in relation to the planning and conduct of exploration activities. Community consultation was required 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 title holder to conduct a risk assessment to identify and consider the range of opportunities and potential threats associated with community consultation and engagement.

Magmatic Resources has undertaken a community consultation risk assessment which was documented in Table 2 of the community consultation strategy. Generally, most of the exploration activities resulted in an impact assessment level of low. The auditor concurs with this assessment for the current drilling program given the nature and scale of the drilling operations.

#### 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.

Magmatic Resources had prepared a combined community consultation strategy for its eight tenements in the central west of NSW commensurate with the activity impact assessment documented under mandatory requirement no. 1. The strategy was noted to include EL8357.

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

- the risk assessment was documented in Section 1.3

- stakeholder identification was addressed in Section 2.2
- engagement mechanisms were identified in Section 2.3
- complaints management and feedback processes were documented in Section 2.4
- Section 2.5 of the strategy set out the requirements for monitoring and revising the strategy based on an evaluation of the landholder engagement activities
- Section 3 of the strategy documents the requirements for reporting.

### 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 Magmatic Resources has generally implemented the community consultation strategy. For example:

- stakeholder engagement records
- community consultation log
- land access agreements.

A community consultation report for the 2019 reporting year was submitted as part of the annual activity reporting required by condition 8 of EL8357. The report was reviewed by MEG and whilst the content was found to be adequate, Magmatic Resources were issued a letter from MEG stating that the report was not submitted within the required timeframe. The 2019 report was reviewed by the auditor and found to be generally consistent with the reporting guidance provided in Appendix 1 of the code of practice. The auditor also noted that Magmatic Resources had applied for, and were granted, an extension of time to submit the annual geological report and believed this extension would also apply to the community consultation report and the environmental and rehabilitation compliance reports.

## 3.5. Exploration activity approvals

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

Applications for activity approval have been made and granted for each drilling program. The audit focussed on the most recent exploration activity approvals as follows:

- exploration activities application (ESF4) dated 11 December 2019 (Auger drilling) and associated approval dated 23 January 2020
- exploration activities application (ESF4) dated 24 April 2020 (Lady Ilse RC Drilling) and associated approval dated 13 May 2020
- exploration activities application (ESF4) dated 9 June 2020 (Lady Ilse RC/DD Programme 2) and associated approval dated 1 July 2020.

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 EL8357 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. A Durock Drilling rig was set up on site 20LIRC010 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 identify the requirements for the management of chemicals, fuels and lubricants used during exploration activities.

The Durock Drilling supervisor advised that only minimal amounts of chemicals and oils were required for the drilling program. These were observed to be stored on the driller's support truck. Diesel for the rig and equipment was observed to be stored in a self-bunded fuel tank on the back of the support truck. A spill kit was also available on the support truck.

A rig nappy was observed in place under the rig (Figure 1). No evidence of hydrocarbon contamination was observed on any of the sites inspected.

Figure 1 Rig nappy in place under the drilling rig



### 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.

Produced water management was not identified as a specific requirement of the exploration activity approvals. However, Magmatic Resources had prepared a produced water management plan, generally in accordance with the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*.

The plan identified that there were no records of aquifers in the drilling program area and there were no recorded bores within two kilometres of the site. Risks to water quality or quantity were assessed to be low due to the minor amounts of non-artesian water expected in the area.

Controls identified in the plan included clear water discharged into geomatting or similar. Geomatting and a return water drainage system were observed in place at the drill rig on site 20LIRC010. Water collected in the metal skip bin was observed to be clear and, having been identified as water of stock quality, return water was observed to be discharged to the paddock through the return water system (Figure 2 and Figure 3).

Figure 2 Return water system from drill rig at site 20LIRC010



Figure 3 Return water discharged through geomatting into the paddock



### 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 cleared and cultivated paddocks (Figure 4) approximately one kilometre from the nearest sensitive receptor. Magmatic Resources established set drilling hours to manage potential noise impacts. This included 6am to 6pm, seven days per week. The Durock Drilling supervisor was aware of the work hours specified in the exploration activity approval.

Figure 4 Durock Drilling rig on site at 20LIRC010



### 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.

Drilling was not in progress at the time of the inspection of site 20LIRC010, so the controls could not be verified, but the dust extraction system on the drill rig and the cyclones were observed to be in place on site.

No air quality issues were observed at any of the sites inspected during the audit site inspection.

### 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.

Wastes from the drilling program were observed to be generally minimal. Durock Drilling staff advised that domestic wastes (i.e. lunch wrappings, drink containers) were collected and stored in waste bins for disposal off site. There was generally no evidence of littering at the sites inspected.

Drill cuttings from the RC holes were collected in bags for disposal off site at a licensed waste facility at the completion of drilling. Several of the recently drilled sites inspected were awaiting the collection of drill cutting bags following the results of laboratory testing (Figure 5).

*Figure 5 Sample bags and drill cuttings waiting to be collected at site 20LIRC009*



### 3.6.6. Vegetation clearance and surface disturbance

Mandatory requirements 6.1 to 6.4 require the title holder 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.

Generally, clearing of vegetation was not required for any of the drill sites inspected, nor was the construction of specific drill pads required. The drill rig and other vehicles were driven over the groundcover vegetation to each site with no access track construction required. The drill holes were planned to avoid trees and other vegetation, with all holes inspected being in cleared paddock areas (Figure 6).

*Figure 6 Typical drill hole in a cleared paddock (site 20LIRC005)*



Generally, the locations of the drill holes inspected were low risk for erosion and sedimentation due to the flat nature of the topography. No erosion or sedimentation was observed at any of the sites inspected and no specific controls were required.

### 3.6.7. Roads and tracks

Mandatory requirements 7.1 to 7.5 require the title holder 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.

Generally, tracks used to access drill sites during the audit site inspection were existing farm tracks. There was no evidence of new track construction for the current program with access to drill sites being drive-over existing vegetation. The tracks used during the audit site inspection were generally observed to be well maintained and trafficable.

Both Durock Drilling and Magmatic Resources staff advised that the drilling sites were shut down in periods of wet weather and no trucks were moved during rain events. Magmatic Resources reported that its geologists liaised with the landholder following periods of wet weather to confirm access to the sites.

The landowner confirmed he was consulted in the location of access to each site and generally had no issues with the drilling program. An access track along a fence line for a previous drilling program was observed to have been ripped and rehabilitated to the satisfaction of the owner.

### 3.6.8. Weeds, pest animals and disease

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

The supporting documentation for the applications for exploration activity approval included a control that vehicles will be kept clean and washed down so as not to introduce new weeds to the area. The Durock Drilling supervisor advised there was a Durock Drilling weed and seed cleaning procedure. In accordance with that procedure the drilling rig is cleaned before leaving the company depot in Dubbo.

Magmatic Resources staff advised that an inspection of the drill rig is completed when it is brought to site and any issues with vehicle cleanliness would result in the drill rig being returned to the depot.

The Magmatic Resources geologist asked for the Regulator's vehicle to be washed down at a facility in Wellington prior to going on the site inspection.

### **3.6.9. Livestock protection**

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

Livestock was not observed in the paddocks where drilling had taken place. Magmatic Resources confirmed that there had been no livestock in any of the paddocks during drilling, with the landholder moving stock to other paddocks to accommodate the drilling program. 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.

Magmatic Resources undertook searches through the AHIMS web service as part of its application for exploration activity approval, but no known aboriginal artefact sites had been recorded in the drilling area. It was noted that the area has been heavily modified by agricultural practices over several decades and the likelihood for artefacts was low.

### **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 Durock Drilling supervisor advised that the drill rig was equipped with a fire suppression system and fire extinguishers and emergency response equipment was observed to be located on the drill rig or within the associated trucks. All staff were trained in the use of this equipment.

### **3.6.12. Risk assessment**

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

Magmatic Resources had undertaken a risk assessment for each drilling program and had identified controls to manage key risks. For example, the presence of shallow groundwater was identified, and a produced water management plan was prepared to document controls and a trigger action response plan.

Relevant controls were identified through the application for exploration activity approval (Form ESF4) for each program and evidence was available to confirm that controls were implemented.

Magmatic Resources used a surface drilling inspection checklist to monitor the implementation and effectiveness of the risk controls.

### 3.7. Security deposit

Condition 5 of EL8357 requires the licence holder to provide a security deposit to secure funding for the fulfilment of obligations under the licence.

The security amount required was \$10,000. Departmental records confirm that amount is being held. Observations made during the site inspection did not identify anything that would create any uncertainty in the security amount required and currently held.

### 3.8. Rehabilitation

Condition 6 of EL8357 requires the title holder 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*.

Rehabilitation of previous drill programs on EL8357 was accepted by the Regulator as satisfactory in 2018. An application for rehabilitation completion and/or review of rehabilitation cost estimate (Form ESF2) was lodged for the auger drilling program completed in 2020 and is currently under review by the Regulator.

An assessment against the mandatory requirements of the code of practice was undertaken for the 2020 drilling programs as documented in the following sections.

#### 3.8.1. Risk assessment

Mandatory requirement 1 requires the title holder 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.

A rehabilitation risk assessment was submitted with a program specific rehabilitation management plan for each of the drilling programs. The final land use proposed was to return to its current usage as grazing and cropping fields. No significant risks were identified that would prevent achievement of the final land use.

### 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 was required to be prepared and submitted with the rehabilitation objectives and completion criteria.

The exploration activity approval applications lodged by Magmatic Resources indicated that the total surface disturbance area was less than five hectares. The drilling programs did not fall within the definition of a higher risk activity under the code of practice and a rehabilitation management plan was not required to be developed. However, Magmatic Resources submitted a program specific rehabilitation management plan with the supporting documentation for each application for exploration activity approval.

Rehabilitation objectives and completion criteria were detailed in the rehabilitation management plan submitted for each program with these being accepted as satisfactory by the Regulator. The objectives and completion criteria were generally consistent with the guidance material provided in the code of practice and were considered adequate for the drilling programs.

### 3.8.3. Rehabilitation program

Mandatory requirement 3 requires that the title holder to 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 requires that the title holder commence rehabilitation of a site as soon as reasonably practicable following the completion of activities on that site.

Rehabilitation of the holes completed under RC drilling program had not yet commenced. Site clean-up had generally been completed on most sites, but final rehabilitation had not been undertaken. Laboratory testing and initial analysis of data needed to be completed in case there was a need for further work at that hole.

Previous RC and DD drilling in 2018 had been successfully rehabilitated and signed off by the Regulator as satisfactory in 2018.

Magmatic Resources has submitted an application for rehabilitation completion and/or review of rehabilitation cost estimate (Form ESF2) for the auger drilling program completed in 2020 and is currently under review by the Regulator. This auger drilling area was inspected during the audit.

Rehabilitation of the auger drilling area involved ripping and returning the area to a cropping system. Following the rehabilitation, the landowner has ploughed the paddock and sown a barley crop indicating

that final land use has been achieved. It was also noted that a previous diamond drill hole had been drilled and rehabilitated in the same area.

Figure 7 Cropping of the paddock where auger drilling and a diamond drill hole had been completed and rehabilitated



Monitoring of rehabilitation was undertaken using the drill site environmental monitoring photos and the rehabilitation monitoring checklist. The monitoring checklist was noted to include:

- a site visit three months after completion to check the effectiveness of the erosion controls and the success of the revegetation progress
- an assessment of performance against the completion criteria
- consideration of intervention for weed control and fertiliser if required
- continued monitoring until the site is considered stable and no longer requires maintenance visits.

### 3.9. Annual activity reporting

Section 163C of the *Mining Act 1992*, clause 59 of the Mining Regulation and condition 8 of EL8357 require the licence holder to submit an activity report annually within one calendar month following the grant anniversary date. Annual activity reports are required to be prepared in accordance with the *Exploration guideline: Annual activity reporting for prospecting titles*.

During the audit scope period, Magmatic Resources had been submitting annual activity reports comprising:

- annual geological report

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

Reports for the 2019 reporting year were reviewed during the audit:

- Magmatic Resources Combo EL8357, Fourth Annual Report 2019
- EL8357 Prospecting Title Work Program, year 3 submission
- Magmatic Resources Ltd EL8357 Combo Community Consultation Report 2019
- Modeling Resources Environmental and Rehabilitation Compliance Report for Combo EL8357.

Generally, reports were found to be in accordance with the MEG and/or Regulator templates and guidance material. It was noted that an extension of time was sought and granted for the 2019 reports.

### **3.10. Core and sample storage**

Clause 65 of the Mining Regulation required 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.

Chip samples were being collected from the RC drilling program in progress. Generally, most samples had been removed to the Magmatic Resources core yard in Orange. An inspection of the core yard was not undertaken due to time and distance constraints.

It was observed that chip samples for the hole in progress were being collected in modular plastic chip trays (Figure 8) which were labelled with the hole number and depth.

Figure 8 Example of a chip tray from site 20LIRC010



### 3.11. 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. 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 were 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 Magmatic Resources has generally maintained records as required by the licence conditions and the exploration codes of practice. Examples of records reviewed included:

- rehabilitation risk assessment
- rehabilitation management plan
- produced water management plan
- examples of completed Rehabilitation Monitoring Checklists (e.g. site 20LIRC002 dated 17 July 2020)

- examples of completed Surface Drilling Inspection Checklists (e.g. site 20LIRC009 dated 15 July 2020)
- drill site environmental monitoring photos
- annual activity reports for 2019 reporting year
- land access agreements
- community consultation strategy
- community consultation log.

## 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, commitments made in the approved exploration activity application).

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

Discussions with Magmatic Resources' staff showed that they had a good understanding of the requirements under the *Mining Act 1992*, the conditions of title, and the exploration activity approval. Magmatic Resources were aware of the Regulator's self-assessment checklist for exploration and had downloaded a copy 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.

Magmatic Resources were using a contract driller to complete the drilling program. The Durock Drilling supervisor had a good understanding of the environmental controls required and had implemented the water management controls and chemical management controls at the drill site.

Magmatic Resources undertook an informal inspection and liaison meeting with the drilling crew at each hole to identify key issues and hazards and refine controls if required. For example, the water management controls at site 20LIRC010 were refined from that used on site 20LIRC009 to avoid the water management issues that were encountered at the previous site.

### 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.

Magmatic Resources has developed a series of inspection checklists to monitor the drilling program and the rehabilitation of the sites. These checklists included:

- surface drilling inspection checklist
- rehabilitation monitoring checklist
- drill site environmental monitoring photos.

Evidence of an adaptive management approach was provided during discussions with the Magmatic Resources geologist and the Durock Drilling supervisor who advised that changes were made to the return water management system for site 20LIRC010 to avoid issues encountered at the previous hole.

### 4.4. Title holder response to draft audit findings

Magmatic Resources was provided with a copy of the draft audit report and invited to submit a response to the draft audit findings. The response from Magmatic Resources indicated it 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 Magmatic Resources has achieved a high level of compliance with the requirements of the exploration licence, exploration activity approval and the exploration codes of practice.

Both the Magmatic Resources 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 on inspection checklists.

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