



**NSW
Resources
Regulator**

COMPLIANCE AUDIT PROGRAM

EL5675 EXPLORATION DRILLING PROGRAM

Alkane Resources Limited



Document control

Published by NSW Resources Regulator

Title: Compliance audit program: EL5675 exploration drilling program – Alkane Resources Limited

First published: August 2021

Authorised by: Director Compliance

CM9 reference: DOC21/563188

AMENDMENT SCHEDULE

Date	Version	Amendment
August 2021	1	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 (August 2021) 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	7
2. Audit methods	8
2.1. Opening meeting.....	8
2.2. Site interviews and inspections	8
2.2.1. Data collection and verification	8
2.2.2. Site inspections.....	8
2.3. Closing meeting.....	9
2.4. Compliance assessment definitions.....	9
2.5. Reporting.....	11
3. Audit findings	12
3.1. Work program	12
3.2. Access agreements.....	13
3.3. Native title and exempt areas.....	13
3.4. Community consultation.....	13
3.4.1. Risk assessment.....	14
3.4.2. Community consultation strategy.....	14
3.4.3. Implementation and reporting.....	15
3.5. Exploration activity approvals.....	15
3.6. Environmental management	16
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	21
3.6.8. Weeds, pest animals and disease	22
3.6.9. Livestock protection	22
3.6.10. Cultural heritage.....	22
3.6.11. Fire prevention	23
3.6.12. Risk assessment.....	23
3.7. Security deposit.....	23
3.8. Rehabilitation	24
3.8.1. Risk assessment.....	24
3.8.2. Rehabilitation objectives and completion criteria	24
3.8.3. Rehabilitation program	25
3.9. Annual activity reporting	26
3.10. Core and sample storage	27
3.11. Record keeping	29
4. Compliance management.....	31
4.1. Identifying compliance obligations	31
4.2. Subcontractor management	31
4.3. Inspections, monitoring and evaluation	32
4.4. Title holder response to draft audit findings	32
5. Audit conclusions.....	33

1. Introduction

1.1. Background

Exploration licence 5675 (EL5675) was granted to Compass Resources NL on 17 January 2000. The licence was transferred to Alkane Exploration Limited on 16 September 2002. The licence has been renewed several times, most recently on 1 March 2017 in the name of Alkane Resources Ltd (Alkane). The exploration area is in an agricultural area about eight kilometres south east of Peak Hill in central NSW.

There have been several exploration drilling programs undertaken on EL5675 in the last three years as part of the Tomingley Gold Project. The most recent programs are summarised in Table 1.

Table 1 Summary of recent exploration drilling programs on EL5675

Program	Activities
May 2020 - MAAG0005149	<ul style="list-style-type: none">■ development of an exploration drive■ underground exploration drilling■ bulk sample recovery program
April 2020 - MAAG0006313	<ul style="list-style-type: none">■ six diamond drill holes in the Roswell prospect
September 2020 - MAAG0008249	<ul style="list-style-type: none">■ 16 diamond drill holes■ 420 aircore holes
January 2021 - MAAG0009322	<ul style="list-style-type: none">■ 13 reverse circulation drill holes

These programs were approved by the NSW Resources Regulator within the Department of Regional NSW between April 2020 and January 2021.

As part of the Regulator's compliance audit program, an audit of the exploration activities associated with the Tomingley Gold Project, within EL5675, was undertaken on 20 April 2021.

1.2. Audit objectives

The objectives of the audit were to:

- undertake a compliance audit of the Alkane Resources Limited 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 title holder 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 Tomingley Gold Project including:
 - exploration activities within EL5675 including a selected sample of exploration drillholes
 - borehole sealing and rehabilitation activities for selected drilling activities undertaken since April 2019.
- a review of documents and records pertaining to the exploration activities
- the assessment of compliance for the period commencing 21 April 2019 and ending 20 April 2021.

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 EL5675 (granted 17 January 2000 and last renewed 1 March 2017)
- exploration activities application (ESF4) dated 25 February 2020 for six diamond drill holes in the Roswell prospect, and associated approval dated 27 April 2020 (MAAG0006313)

- exploration activities application (ESF4) dated 3 August 2020 for 16 diamond drill holes and 420 aircore holes, and associated approval dated 8 September 2020 (MAAG0008249)
- exploration activities application (ESF4) dated 4 December 2020 for 13 reverse circulation drill holes, and associated approval dated 19 January 2021 (MAAG0009322)
- Exploration Code of Practice: Environmental Management (Version 3, September 2017)
- Exploration Code of Practice: Rehabilitation (Version 3, September 2017)
- Exploration Code of Practice: Community Consultation (Version 1.1, May 2016)
- Exploration Code of Practice: Produced Water Management, Storage and Transfer (Version 3, September 2017)
- 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 3.0, December 2020) published by the Department of Regional NSW
- 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 title holder 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

An opening meeting was held onsite on 20 April 2021. 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:

- hole EPP042 – RC drilling in progress
- hole EPAC114 – RC hole rehabilitation completed
- hole KWAC071 – AC drilling in progress
- hole KWAC070 – AC hole recently drilled

- hole RWD046 – diamond drilling, not yet rehabilitated
- initial clean-up of RC holes adjacent to RWD046
- hole SARGT02 – diamond drilled geotechnical hole, partly rehabilitated
- hole SARGT01 – diamond drilled geotechnical hole, partly rehabilitated
- air core drill line RWAC023 to RWAC030 – rehabilitated about 12 to 18 months ago
- core and sample storage at the Alkane exploration office in Peak Hill.

2.3. Closing meeting

A closing meeting was held onsite on 20 April 2021. 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 2.

Table 2 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> <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-</p>

ASSESSMENT	CRITERIA
	<p>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 the scope of the audit.</p>
<p>Not applicable</p>	<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 Alkane 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 EL5675 requires the licence holder to carry out the operations described in the approved work program. Work program WP-EL5675-2017-2023 was approved by the (then) Division of Resources and Geoscience (DRG) on 10 January 2017 as part of the renewal of EL5675.

Alkane was in Year 5 of the work program (2021-20221). Intended activities for the audit scope period (years 3 and 4 of the approved work program) are summarised in Table 3.

Table 3 Summary of approved work program

Year 3	Year 4
Ground magnetic survey at Roswell and surrounds	Continued resource definition drilling at Roswell and San Antonio
Broad spaced RC drilling at El Paso, Roswell and San Antonio	Exploration drive to deep mineralisation potential
Diamond drilling to aid geological and structural modelling	Target evaluation RC drilling
Resource definition drilling using reverse circulation and diamond core drilling	Extension of ground magnetic survey

A review of the 2020 and 2021 annual exploration reports provided details of the exploration activities completed during the reporting periods. The activities included:

- ground magnetic surveying from Roswell to Smiths prospect was completed
- drilling was conducted on the Roswell, San Antonio and El Paso prospects, including 224 RC holes and 36 diamond holes
- petrographic study of selected drill core and RC chip samples from Roswell and San Antonio.

Generally, evidence was available to confirm that the work program was progressing as planned. Both RC and aircore drilling were in progress at the time of the audit site inspection.

Exploration data is maintained by the Alkane 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 is required to be agreed in writing between the holder of the prospecting title and each landholder of that area of land.

Alkane advised that it owns a large part of the exploration licence area where activities are carried out. One farm is under option and a land access agreement is in place for that property.

An example of a land access agreement dated April 2019 was sighted for a property where drilling was conducted within 200 metres of a dwelling. Evidence was sighted to indicate that landholder approval under Section 31 of the *Mining Act 1992*, to drill within 200 metres of the dwelling, had been obtained as part of the land access agreement.

3.3. Native title and exempt areas

Condition 3 of EL5675 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.

Alkane uses the services of a tenement manager for EL5675. The tenement manager has done land title searches across the EL area and identified any areas where native title may not have been extinguished, or any areas that may fall within the definition of an exempted area. A land claim was identified on a small area of land adjacent to the Newell Highway.

A review of drilling location data was used to confirm that drilling had not been undertaken in those areas and further approvals were not required.

3.4. Community consultation

Condition 3 of EL5675 requires the licence holder to carry out community consultation in relation to the planning and conduct of exploration activities. Community consultation is 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.

Alkane has prepared a community consultation risk assessment which was documented in Step 1 of the community consultation strategy. The risks identified included:

- failure to gain access to property
- poor record keeping leading to breach of mandatory requirements
- not allowing enough resources for community consultation
- failing to adequately respond to genuine community concerns.

Using the template provided in the code of practice, the activity impact level was assessed as medium. The auditor concurs with this assessment. Controls proposed to address the identified risks included:

- maintaining regular contact with landholders
- maintaining clear and timely communication to management on issues and complaints
- staff to complete community consultation training.

Evidence was available to demonstrate that these controls had generally been implemented for the exploration activities reviewed during the audit.

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.

Alkane has prepared a community consultation strategy for the exploration activities. The strategy was noted to include:

- an identification of the community stakeholders and development of a project contact details sheet
- consultation mechanisms appropriate for the medium activity impact assessment level
- the development of a process for dealing with and responding to complaints and enquiries

- a process for the revision of the community consultation strategy.

It was noted that the consultation strategy did not include a description of the objectives of the strategy. This is raised as observation of concern no. 1. Alkane should document the objectives of the community consultation strategy.

3.4.3. Implementation and reporting

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

Evidence was available to demonstrate that Alkane has generally implemented the community consultation strategy. For example:

- landholder correspondence register for day to day liaison with landholders
- key stakeholder consultation log maintained by Managing Director
- complaints register which detailed each complaint and the response and mitigation
- quarterly community newsletters
- newspaper advert in Narromine News
- community consultation reporting
- University of Queensland community consultation training undertaken by Alkane Resources community consultation staff.

The community consultation strategy was noted to be reviewed annually during the preparation of the community consultation reports.

Community consultation reports for the 2019 and 2020 reporting years were submitted as part of the annual activity reporting required by condition 8 of EL5675. Departmental records showed that the 2019 and 2020 reports were reviewed by MEG and the content was found to be adequate.

The 2021 report was reviewed by the auditor and found to be generally consistent with the reporting guidance provided in Appendix 2 of the code of practice.

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 focused on three of the most recent exploration activity approval as follows:

- Exploration activities application (ESF4) dated 25 February 2020 for six diamond drill holes in the Roswell prospect, and associated approval dated 27 April 2020 (MAAG0006313)
- Exploration activities application (ESF4) dated 3 August 2020 for 16 diamond drill holes and 420 aircore holes, and associated approval dated 8 September 2020 (MAAG0008249)
- Exploration activities application (ESF4) dated 4 December 2020 for 13 reverse circulation drill holes, and associated approval dated 19 January 2021 (MAAG0009322)

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

3.6. Environmental management

Condition 4 of EL5675 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 requires 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. At the time of the audit site inspection, a Strike Drilling RC rig was set up at hole EPP042 (Figure 1) and a Durock Drilling aircore rig was set up at hole KWAC071 (Figure 2).

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.

Figure 1 Strike Drilling RC rig set up at site EPP042



Figure 2 Durock Drilling AC rig set up on site KWAC071



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.

For the RC drilling, Strike Drilling were using biodegradable drilling fluids (e.g. MaxFoam XF). All drilling fluids, fuels and oils were observed to be stored on the support truck in a bunded storage area. A spill kit bin was observed on the support truck with the stored chemicals (Figure 3). The Strike Drilling supervisor advised that only minimal amounts of chemicals were kept on site, generally enough for one day's use. Most chemicals, fuels and oils were stored in a container in the laydown yard at the Alkane exploration office. A rig nappy was observed in place under the drill rig (Figure 4), with similar spill containment provided under the lighting plant.

For the AC drilling, Durock Drilling were storing oil and grease in drums on the back of the support vehicle. A spill kit was also located on the back of the vehicle, but it was observed to not be very accessible (Figure 5). As suggestion for improvement no. 1, it is suggested that Durock Drilling re-organise the support vehicle to make the spill kit more accessible.

A diesel fuel trailer was observed at the air core drill site (Figure 6). It was noted that a minor drip had established from a hose clamp. Once pointed out by the auditors, the Durock Drilling staff quickly attended to the hose, tightening the clamp and stopping the leak. At the time of the site inspection, the AC rig was not operational due to issues with the compressor. Oil was observed to be leaking from a

bleed tap on the rig. Durock Drilling staff had placed absorbent matting under the leak to catch any oil dripping from the tap (Figure 7).

No evidence of hydrocarbon contamination was observed on any of the sites inspected.

Figure 3 Spill kit on Strike Drilling support truck



Figure 5 Inaccessible spill kit on Durock Drilling support vehicle

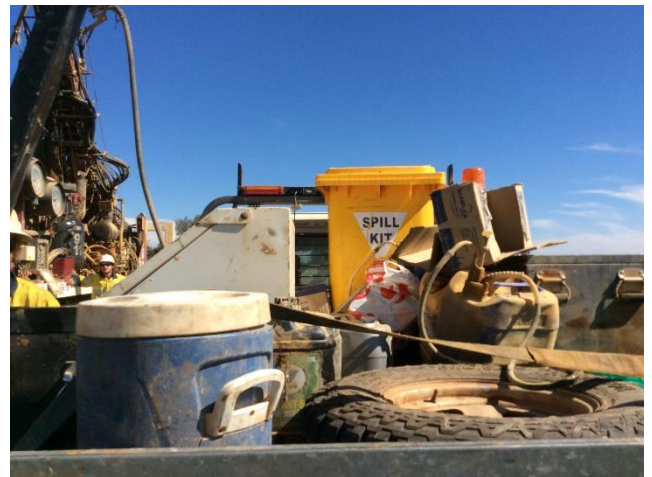


Figure 4 Rig nappy in place under Strike Drilling rig



Figure 6 Durock Drilling fuel trailer



Figure 7 Spill matting in place to catch drips from Durock air core 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.

Drilling was being undertaken using a RC drill rig and an aircore drill rig. Water was not required for the drilling process. At some holes, incidental water was encountered during RC drilling. Water was discharged to ground with minimal impacts observed. The method of discharge was consistent with the controls identified in the environmental risk assessment for RC drilling prepared for the exploration activities.

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 on large pastoral landholdings. Generally, no sensitive receptors were observed in proximity to the sites inspected, but it was observed that drilling was conducted within 200 metres of one residence. A written land access agreement and an approval from the landowner were in place for this drilling. To mitigate noise impacts for this resident, Alkane arranged for the resident to temporarily relocate for the two-week period that drilling was undertaken. Noise impacts were generally low risk.

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.

RC drilling was in progress at the time of the site inspection. Given the location of the drill site is remotely located away from residences, poor air quality was a low risk. The Strike Drilling supervisor advised that cyclones are fitted to the drill rig to reduce air quality impacts. 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. Both drilling contractors, Strike Drilling and Durock Drilling, advised that wastes were collected from each site and disposed of in bins located at the Alkane exploration office in Peak Hill. There was generally no evidence of littering at the sites inspected.

Drill cuttings from the RC drilling were collected in bags and were stored at a temporary storage facility on Kyalite Road at the completion of drilling.

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. Both RC and aircore drilling sites inspected were in cleared paddock areas. The drill rig and other vehicles were driven over the groundcover vegetation to each site, with no formal access track construction required.

The drill holes were planned to avoid trees and other vegetation (Figure 8 and Figure 9).

Generally, most drill hole locations inspected were low risk for erosion and sedimentation due to the flat nature of the topography. No specific erosion and sediment controls were required for any of the sites inspected, and no evidence of erosion or sedimentation was observed during the site inspection.

Figure 8 Strike Drilling rig in cleared paddock



Figure 9 View along the aircore drill line towards the Durock aircore rig



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 requirement for the construction of new access tracks with access to drill sites. The tracks used during the audit site inspection were generally observed to be well maintained and trafficable, despite recent rain.

Alkane staff advised that the drilling sites were generally shut down in periods of wet weather and no trucks were moved during rain events. Weather forecasts are monitored and where possible, drill rigs were removed from site prior to major rain events. For other rain events, site inspections are undertaken daily to determine site conditions and, where issues are observed, drilling is cancelled for the day.

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 as well as animal and plant diseases.

Alkane has implemented a vehicle hygiene procedure in accordance with the controls documented in the environmental risk assessment for exploration activities. Drill rigs and support vehicles are inspected upon arrival on site with rigs washed down between properties. Records of rig inspections are maintained by Alkane.

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.

During the audit site inspection, no livestock was observed in the paddocks where drilling had taken place. Alkane staff advised that, generally, the landholders will move livestock to other paddocks during drilling. Sumps were not being used for the drilling programs and no specific controls were required.

3.6.10. Cultural heritage

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

Alkane undertook searches through the AHIMS web service as part of its application for exploration activity approval. No known aboriginal artefact sites were recorded in, or near the search areas. During archaeological studies for the environmental impact statement for mine development, ten potential archaeological heritage items were identified, including two objects in the Roswell drilling area and two

scarred trees in a stand of existing vegetation. These areas have been quarantined from drilling and demarcated with flagging tape to avoid impacts on site.

3.6.11. Fire prevention

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

Fire extinguishers and emergency response equipment were observed to be located on both the Strike Drilling and Durock Drilling rigs, or within the associated trucks. All staff were reported to be trained in the use of this equipment. In addition, Alkane has a field vehicle fitted with 250-litre water tanks and a fire pump which is placed on site during slashing of any vegetation required for the drilling programs. Fire weather forecasts are monitored, and drilling is ceased when fire dangers are at catastrophic level or a total fire ban is declared. It was noted that the rural fire service contact numbers were included on the site induction sheet.

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.

Alkane prepared an environmental management risk assessment for the exploration activities. Controls were proposed for the risks identified. Generally, evidence was available to confirm that the controls were implemented. For example:

- spill kits were observed at each drilling rig set up
- use of existing farm tracks for access to each site
- rig washed down prior to arrival on site and washed down between properties
- firefighting unit present during slashing.

The risk assessment document was also noted to include the monitoring and review processes. For example, a drill site environmental monitoring sheet has been developed to facilitate monitoring of environmental factors for each new drill hole.

3.7. Security deposit

Condition 5 of EL5675 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 \$388,000. Departmental records confirm that amount is being held. The exploration activity approvals in 2020 for the AC/RC drilling programs triggered the increase in security to \$388,000.

3.8. Rehabilitation

Condition 6 of EL5675 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*.

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.

Alkane documented the rehabilitation risk assessment as part of the document titled 'Environmental Risk Management (Exploration)' which was prepared for the exploration operations. Key risks to successful rehabilitation outcomes and the controls required to address them included:

- Adoption of inappropriate or inadequate rehabilitation techniques, using standard Alkane rehabilitation procedures developed over 20 years, discussed with landholder.
- Soil compaction from exploration activities, ground ripped during rehabilitation including temporary tracks.
- Contamination resulting from exploration activities, only biodegradable drilling muds and fluids used, spill kits on site. All produced cuttings/mud removed from site during rehabilitation.
- Lack of rehabilitation care and maintenance, maintain drillhole monitoring sheets and maintain exploration environmental management strategy.

3.8.2. Rehabilitation objectives and completion criteria

Mandatory requirement 2 requires the title holder, 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 (CEA) approval applications lodged by Alkane indicated that the total surface disturbance area for each application 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 for each program.

A review of our records confirmed that rehabilitation objectives and completion criteria were developed and submitted for each exploration activity approval. 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 generally appropriate for the drilling programs in progress.

It was noted during the site inspection that there was an area of targeted drilling over several years where rehabilitation had not yet been completed. This area was within the proposed mine pit footprint. Alkane Resources was noted to be using the same rehabilitation objectives and completion criteria for each drilling program. However, Alkane are seeking to use a different set of criteria for rehabilitation of exploration holes within the proposed mine footprint. As suggestion for improvement no. 2, Alkane should consider the development of a specific set of rehabilitation objectives and completion criteria for rehabilitation of exploration holes within the proposed mine footprint and submit those to the Regulator.

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 each hole was noted to include:

- removal of any equipment and wastes from site, including any drill cuttings
- PVC drill collar cut about one metre below ground level (not required for AC drilling)
- landform restored if required and any topsoil replaced
- site ripped and revegetated.

Examples of rehabilitation of the drill holes on EL5675 are shown in Figure 10 and Figure 11.

Figure 10 Rehabilitation of previous RC drilling



Figure 11 Rehabilitation of previous RC drilling



Rehabilitation monitoring is generally undertaken visually, with a series of photos taken and compared to the baseline photos. The rehabilitation photos were noted to be maintained electronically. It was noted that a rehabilitation tracking spreadsheet is maintained with rehabilitation of each hole tracked against the rehabilitation objectives and completion criteria. Rehabilitation progress is reviewed at six months after completion of rehabilitation and any further works required are documented on the drill site environmental monitoring sheet.

3.9. Annual activity reporting

Section 163C of the *Mining Act 1992*, clause 59 of the Mining Regulation and condition 8 of EL5675 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, Alkane 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 and 2020 reporting years were reviewed during the audit:

- Annual Activities Report, Tomingley Gold Project, Exploration Licence 5675, Report for the period 18 January 2019 to 17 January 2020
- Annual Activities Report, Tomingley Gold Project, Exploration Licence 5675, Report for the period 18 January 2020 to 17 January 2021
- EL5675 Prospecting Title Work Program, year 3 submission 2019
- EL5675 Prospecting Title Work Program, year 4 submission 2020
- Annual Community Consultation Report – Tomingley Gold Project, Exploration Licence 5675 for the period 18 January 2019 to 17 January 2020
- Annual Community Consultation Report – Tomingley Gold Project, Exploration Licence 5675 for the period 18 January 2020 to 17 January 2021
- Annual Environmental and Rehabilitation Compliance Report, Tomingley Gold Project, Exploration Licence 5675 for the period 18 January 2019 to 17 January 2020
- Annual Environmental and Rehabilitation Compliance Report, Tomingley Gold Project, Exploration Licence 5675 for the period 18 January 2020 to 17 January 2021.

Generally, reports were found to be in accordance with the MEG and/or Regulator templates and guidance material.

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 are required to be labelled, stored and managed in a manner that preserves the integrity of the core or samples.

Chip samples and core have been collected from the drilling programs on EL5675, with all chip samples and core stored at the core yard at Alkane's Peak Hill exploration office (Figure 12). Core was observed to be stored in metal core trays (Figure 13) with the trays labelled with hole number, tray number, start and finish depths, and indicators of downhole direction.

Chip samples were observed to be stored in modular plastic chip trays with each tray labelled with hole number and depth (Figure 14).

Figure 12 Alkane Resources core yard



Figure 13 Core tray labelling



Figure 14 Chip tray labelling



3.11. Record keeping

Sections 163D and 163E of the *Mining Act 1992* relates 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 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 Alkane has generally maintained records as required by the licence conditions and the exploration codes of practice. Examples of records reviewed included:

- environmental and rehabilitation risk assessment
- rehabilitation objectives and completion criteria
- photographic records of drill sites
- annual activity reports for 2019 and 2020 reporting years
- induction materials
- land access agreements
- community consultation strategy
- community consultation log (excel spreadsheet)
- newspaper adverts and quarterly community newsletter updates
- land tenure mapping
- drill collar records
- waste management records

- environmental monitoring records
- rehabilitation records in excel spreadsheet
- core storage map and 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, commitments made in the approved exploration activity application).

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

Discussions with Alkane staff showed that they had a good understanding of the requirements under the *Mining Act 1992*, the conditions of title, the exploration activity approvals, and the exploration codes of practice. It was noted that systems and processes have generally been developed to address the compliance requirements and provide evidence through the maintenance of mandatory records.

4.2. Subcontractor management

Contractors are often used to undertake specialist tasks (i.e. exploration drilling). While 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.

Alkane were using contract drillers to complete the RC and air core drilling programs. It was noted that Alkane undertook an induction with each drilling crew at the start of the drilling program to identify key issues and hazards and establish controls as required. Induction records are recorded on the Site and Drill Rig Induction Acknowledgement form. Supervision of the drilling operations was undertaken by the Alkane geologists. The geologists raise any issues of concern directly with the driller for corrective action.

Both the Strike Drilling and the Durock Drilling supervisors had a good understanding of the environmental controls required for the drilling programs and had implemented chemical management and waste management controls at the drill 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.

Alkane has developed an inspection and monitoring program to monitor the drilling program and the rehabilitation of drill sites. Records of inspection and monitoring were observed to be documented on the drill site environmental monitoring checklist. Generally, rehabilitation monitoring is undertaken using photographic records.

Alkane staff advised that the environmental risk assessment for exploration is reviewed for each exploration activity approval. During this review, the effectiveness of the controls implemented on the previous drilling program is reviewed and controls amended to reflect the risks associated with the new program.

4.4. Title holder response to draft audit findings

Alkane was provided with a copy of the draft audit report and invited to submit a response to the draft audit findings.

Alkane did not have any amendments or corrections to the draft audit report. The response submitted by Alkane did provide a brief description of corrective actions undertaken to address the audit findings as follows:

- Alkane has recently included documented objectives into the Community Consultation Strategy
- Durock Drilling has re-organised their vehicle to make the spill kit more accessible
- Alkane has submitted updated Rehabilitation Objectives and Criteria to take in account a different criteria for rehabilitation of drill holes within the open cut design.

5. Audit conclusions

From the evidence gathered during the audit, and observations made on site during the audit site inspections, it was concluded that Alkane 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 Alkane staff and the contract drillers 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.

No non-compliances were identified during the audit. One observation of concern and two suggestions for improvement were identified as documented in Table 4 and Table 5.

Table 4 Summary of observations of concern

OBSERVATION OF CONCERN NO.	DESCRIPTION OF ISSUE	RECOMMENDATION
1	It was noted that the community consultation strategy did not include a description of the objectives of the strategy.	Alkane should document the objectives of the community consultation strategy.

Table 5 Summary of suggestions for improvement

SUGGESTIONS FOR IMPROVEMENT	DESCRIPTION OF ISSUE
1	It is suggested that Durock Drilling re-organise the support vehicle to make the spill kit more accessible.
2	Alkane should consider the development of a specific set of rehabilitation objectives and completion criteria for rehabilitation of exploration holes within the proposed mine footprint and submit those to the Regulator.