Exploration directive

Alberta

Contents

Revision History

Version Date	Author, Organization	Description
November 8. 2006	Alberta Sustainable Resource Development	26 Exploration Directives created.
December 1, 2013	Alberta Environment and Sustainable Resource Development, Alberta Energy Regulator	Updated to reflect changes with introduction of REDA and the Alberta Energy Regulator.
January 22, 2021	Alberta Environment and Parks, Alberta Energy Regulator	Consolidation of the 26 Exploration Directives and technical, operational, and procedural provisions transferred from the Exploration Regulation into consolidated Exploration Directive.
April 6, 2022	Alberta Environment and Parks, Alberta Energy Regulator	Updated formatting, terms, and sections 1, 3, 5, 7, 10, 11, 12, 13, 14, 15, 18, 19 and 22 content to align with current day processes, operations, and new technologies.
April 21, 2022	Alberta Environment and Parks, Alberta Energy Regulator	Edited section 7, updated name change in section 11 and corrected error in Section 15.

1.0 Introduction

This Exploration Directive (the Directive) sets out geophysical (seismic) exploration and monitoring requirements when conducting geophysical exploration programs in accordance with Part 8 of the *Mines and Minerals Act* in the Province of Alberta. This Directive is authorized under Part 8 of the *Mines and Minerals Act* and forms part of the Exploration Regulation (AR 284/2006) (the Regulation) as published by the Department of Alberta Environment and Parks.

References to licensee or permittee throughout this directive means a program licensee or program permittee as defined in sections 1(ee) and 1(ff) of the Regulation and includes any authorized land agents or sub-contractors working on behalf of a licensee or permittee.

In addition to Alberta Environment and Parks, the Alberta Energy Regulator (the AER) has regulatory responsibilities under the Directive. As used in the Directive, "relevant Department authority" means

a. the AER, regarding the exploration of energy resources (as defined in *Responsible Energy Development Act*) and other activities being conducted in respect of an energy resource activity (as determined by the *Responsible Energy Development Act*), and

b. Alberta Environment and Parks (AEP), Lands Policy and Program Branch for all other exploration activities, in which case, a reference to relevant Department authority may also include the Minister of Environment and Parks.

The licensee and permittee should follow all submission processes as outlined in this directive. If, upon submission to the AER, the AER determines that the activity is not under their authority in accordance with the *Responsible Energy Development Act*, the application will be referred by the AER to AEP for review and decision.

Questions related to requirements of this directive should be referred to the AER.

Questions related to issues or updates needed to this directive should be referred to the Public Lands Policy Section in AEP.

Contact information for the relevant Department authorities are:

Alberta Environment and Parks
Lands Division, Lands Policy and Programs Branch,
Public Land Policy Section
2nd Floor, 9915 108 Street Edmonton, Alberta
T5K 2G8
Email: AEP.Info-Centre@gov.ab.ca
Phone: 310-0000

And

Alberta Energy Regulator
Attention: Geophysical Exploration Authorizations
(Calgary Head Office)
Suite 1000, 250 – 5th Street SW Calgary, Alberta
T2P 0R4
Email: Exploration@aer.ca
Phone: 780-427-2876
Toll-free: 1-855-297-8311

2.0 Restricted Exploration Areas

2.1 Background

As per section 11 of the Regulation, no person shall conduct exploration, operate a type of energy source, conduct a method of exploration, etc., in any area of Alberta in which exploration is prohibited or restricted except in accordance with the conditions of this Directive.

2.2 Requirements

The licensee or permittee shall comply with the requirements, prohibitions, and restrictions for areas of Alberta delineated and described at alberta.ca and search for “Exploration Restricted Areas”.

2.3 Procedure

Numerous areas of Alberta have been identified as having specified requirements, prohibitions and restrictions. These exploration-restricted areas, along with the specified requirements, prohibitions and restrictions, are described at alberta.ca and search for “Exploration Restricted Areas.” As the exploration restricted areas will be updated and revised continuously, the exploration restricted areas will display a revision date.

The exploration approval that is issued by the AER under section 23 of the Regulation will identify the exploration restricted area(s) by number. The program licensee or permittee is to ensure these areas are identified and they are in compliance with the specified requirements, prohibitions or restrictions. It is the responsibility of the program licensee and permittee to ensure they are using the current version (found on Alberta Environment and Parks web page) of the specified area.

Additions or changes to any Exploration Restricted area by AEP will be communicated to persons or Associations that represent such persons who will be directly affected by the proposed directives prior to implementation as per this Directive.

2.4 Other

If any discrepancy exists between the written description of the Exploration Restricted Area and the area shown on a map, the written description of the area prevails.

3.0 Review of Program Approvals and Conditions

3.1 Background

As per section 12 of the Regulation, a program licensee or permittee has the right to request a review of the AER's decision if the licensee or permittee believes that a decision, approval condition(s) or site-specific operating constraint(s) contained in an exploration approval is unreasonable. Upon written request by the licensee or permittee, the AER may review a decision in respect of a program of exploration.

3.2 Requirements

The Government of Alberta's *Master Schedule of Standards and Conditions* (MSSC) contains information on desired outcomes, best management practices and applicable approval conditions for a licensee and permittee to follow when applying for geophysical exploration programs. The *Policy and Procedures Document for Submitting the Geophysical Field Report (GFR) Form* also contains details on environmental standards and best management practices for licensees and permittees to follow when applying for and conducting geophysical operations on public lands in Alberta.

If the licensee or permittee is unable to meet applicable MSSC conditions for geophysical programs or geophysical field report (GFR) requirements, sufficient rationale and mitigation measures should be provided up front with an application submission or during application review. If there is no resolution through mitigative actions regarding outstanding operational issues, the licensee for a program approval applied for under section 23 of the Regulation may be refused and the licensee will be notified of non-approval in writing.

The program licensee or permittee can request a review under section 12 of the Regulation of the AER's decision upon the licensee' receipt of written confirmation of non-approval or approved operating conditions.

The program licensee may request a review of the AER's decision regarding:

- Non-approval of an application that was made under section 23 of the Regulation for an exploration program.
- An operating condition or site-specific operating constraint contained in an exploration program approval.

3.3 Procedure

The applicant must submit a written request to the AER to initiate a review. To support the request, the applicant must state the reason(s) supported by sufficient rationale, mitigation measures and the expected resolution.

Provided the AER has all relevant information for the request for review they will respond to the applicant with an acknowledgement of receipt of the request within five (5) business days.

Upon completion of the review of all materials submitted by the licensee or permittee, the AER will decide if the review is rejected or if it is upheld (resolved to the satisfaction of the applicant). A copy of the decision will be communicated to the applicant in writing.

3.4 Other

There are no fees associated with the review of a geophysical program approval or operating conditions under section 12 of the Regulation.

4.0 Release of Program Information

4.1 Background

Under section 13 of the Regulation, subject to the *Freedom of Information and Protection of Privacy Act*, as it relates to personal information and this Directive, information collected in relation to an approved exploration program may be released.

4.2 Requirements

Subject to the *Freedom of Information and Protection of Privacy Act* as it relates to the release of personal information, on the request in writing made by any person to the relevant Department authority, the Minister may release and make available to that person information that is held in the records of the Department in relation to an approved exploration program in accordance with the following:

A release of information may be made:

- at any time after 2 years following the date of completion, or
- at any time during that 2-year period if the relevant Department Authority is satisfied that the licensee has consented to the release.

At any time after the approval by the relevant Department authority of a final plan for a program of exploration, information as to the location of lines in the final plan may be released by the relevant Department authority to a branch or division of the Department designated for the purpose of identifying the location of those lines on access maps to which persons involved in the conduct of exploration in Alberta will have access.

The written request must indicate the approved exploration program and the program information being requested, and the phone number and the address of the requester must be provided with the written request. The request is to be submitted to the AER at InformationRequest@aer.ca

4.3 Procedure

The following information is considered program information:

- The preliminary plan application.
- The approval that was issued for the particular exploration program.
- All other approvals associated with that exploration program (e.g., temporary field authorization).
- The geophysical field report that was submitted and approved.
- Any and all parameters of the program design and execution.
- The final plans and maps related to the exploration program that are contained in the relevant Department authority's records.

Written requests for program information must be submitted to the AER at InformationRequest@aer.ca.

1. The program licensee must agree to the release of any program document that falls within two years of the completion date of a program of exploration conducted in Alberta.
2. Program documents that are two years or older (i.e., two years after the completion date of a program of exploration conducted in Alberta) may be released without the program licensee's consent on requests submitted to the AER.
3. Program information will be provided in hard copy or printed copy only.

4.4 Other

Program information does not include information or correspondence between the program licensee, program permittee or any other person authorized by the program licensee or program permittee to communicate or consult with First Nations and the First Nations, or any details of a First Nations Consultation plan or program.

5.0 Application for Licence, Permit or Unique Identification Numbers

5.1 Background

An exploration licence is required to apply for approval to conduct a geophysical program. An exploration permit is required to operate or conduct the approved geophysical program in the Province of Alberta. An application for an exploration licence or exploration permit may be made under section 16(2) of the Regulation.

Third party operators or subcontractors hired by a licensee or permittee to conduct work on a program of exploration may also apply for a unique identification number (UIN) under section 41(4) of the Regulation. Having a UIN eliminates the need for an operator to change the program licensee's or permittee's number on equipment displayed in the field as an operator moves between programs.

An operator may apply for and hold either a permit number or UIN.

5.2 Requirements

5.2.1 For an exploration licence the applicant must:

1. Complete the "Application for Exploration Licence or Permit Form" which can be viewed or downloaded from the AER website at www.aer.ca
2. Prove to the satisfaction of the AER that the applicant is a corporation and entitled to carry on business in Alberta.
3. Pay an application fee of $100.00 by attaching the fee to the form. Payment may be:
   a. cash, or
   b. a certified cheque made payable to the Alberta Energy Regulator, or
   c. a money order made payable to the Alberta Energy Regulator.
4. Pay a security deposit of $10,000.00 by attaching the deposit to the form. Payment may be:
   a. cash, or
   b. a certified cheque made payable to the Alberta Energy Regulator, or
   c. a money order made payable to the Alberta Energy Regulator.

It is the AER's expectation that two separate cheques, one for the exploration licence application fee and one for exploration licence deposit are attached to the application. The security deposit must not be combined with any other payment required by the AER.

5.2.2 For an exploration permit the applicant must:

1. Complete the "Application for Exploration License or Permit Form" which can be viewed or downloaded from the AER website at aer.ca.
2. Prove to the satisfaction of the AER that the applicant is a corporation and entitled to carry on business in Alberta.
3. Pay an application fee of $100.00 by attaching the fee to the form. Payment may be:
   a. cash, or
   b. a certified cheque made payable to the Alberta Energy Regulator, or
   c. a money order made payable to the Alberta Energy Regulator.
4. Pay a security deposit of $5,000.00 by attaching the deposit to the form. Payment may be:
   a. cash, or
   b. a certified cheque made payable to the Alberta Energy Regulator, or
   c. a money order made payable to the Alberta Energy Regulator.

It is the AER's expectation that two separate cheques one for the exploration permit application fee and one for exploration permit deposit are attached to the application. The security deposit must not be combined with any other payment required by the AER.

5.2.3 For an exploration UIN the applicant must:

1. Complete the UIN application form which can be viewed or downloaded from the AER website at aer.ca.
2. Pay an application fee of $100.00 by attaching the fee to the form. Payment may be:
   a. cash, or
   b. a certified cheque made payable to the Alberta Energy Regulator, or
   c. a money order made payable to the Alberta Energy Regulator.

5.3 Procedure

The application for an exploration licence, permit or UIN, which includes the completed form, application fee and appropriate deposit, must be sent to the AER.

If a security deposit payee is different than the licensee or permittee (i.e., security deposit is paid by a third-party), security deposits will be held in the name of, and refunded to the licensee or permittee, and not the third-party payee.

In accordance with section 19(4) of the Regulation, security deposits may be refunded once a request for cancellation of licence or permit is received. Refer to section 23 of this Directive on how to request cancellation of a licence or permit.

Application fees are non-refundable.

6.0 Application for Exploration Approval

6.1 Background

Under section 23 of the Regulation, a licensee as defined in section 106 (g) of the *Mines and Minerals Act* or a person authorized by the licensee may apply to the AER in writing (a geophysical application) for an exploration approval. The AER may refuse to grant an exploration approval until the applicant has complied with all procedures and requirements set forth in the exploration directives that relate to the application for exploration approval.

6.2 Requirements

1. A geophysical application for an exploration approval must be submitted electronically as per the Digital Geophysical Submissions Specifications. These specifications can be viewed or downloaded from the AER website at aer.ca.
2. An application fee of $350 or an amendment fee of $175 applies to a geophysical application for an exploration approval. The fee may be paid by cash, certified cheque or money order made payable to the Alberta Minister of Finance.
3. A completed geophysical field report must be submitted with the geophysical application for a geophysical program that is being proposed on public lands. A geophysical application remains incomplete until the geophysical field report form is approved at the field level.
4. The geophysical field report form and the "Policy and Procedures Document for Submitting the Geophysical Field Report Form" can be viewed or downloaded from the AER website at aer.ca.
5. When a geophysical program is proposed to be conducted in whole or in part in a Municipality or Special Area, the Municipality or Special Areas Board must:
   - Be notified of the intent to conduct a geophysical operation through the "Notice of Intent for a Geophysical Program" form that is can be viewed or downloaded from the AER website at aer.ca.
   - A signed copy or documentation showing the "Notice of Intent of a Geophysical Program" was delivered must be included as part of the geophysical application for an exploration approval.
6. Application for time lapse seismic programs approval must have "Time Lapse" or "TL" within the prospect name to identify the program as a time-lapse seismic program.
7. An application for a Vertical Seismic Profile (VSP) must be submitted digitally.
8. Application must be accompanied by the "Preliminary Geophysical Application Information Cover Sheet" that can be viewed or downloaded from the AER website at aer.ca.
9. Maps are preferred to be on a 1:50,000 scale. A larger scale may be used for larger programs. Information that is required on the map by the "Preliminary Geophysical Application Information Cover Sheet" must be clearly depicted.
10. If the program licensee, as defined in Section 1(ee) of the Regulation, is planning to exceed the maximum charge size (20 kg) or the maximum shot hole depth (20 m) described in section 17 of this Directive of the Regulation, the program licensee must:
    - Provide the AER with written justification for exceeding the maximum charge size or hole depth, and
    - Submit a written justification for exceeding the maximum charge size (20 kg) or the maximum shot hole depth (20 m) with the geophysical application.
11. An explosive charge cannot be loaded into the hole or the hole drilled beyond the permitted depth until written approval is obtained from the AER.

6.3 Procedure

The Application Disposition Process and Tracking (ADEPT) automated system provides to the geophysical industry the window for application submissions. Digital submission requirements are described in the "Digital Geophysical Submissions Specifications" document. To access the ADEPT system and view these specifications search "Systems and Tools" on the AER website at aer.ca. Exploration program application submissions must be sent GeoSub@aer.ca.

7.0 Geophysical Amendments and Temporary Field Authorizations

7.1 Background

Under section 30 and 31 of the Regulation, the program licensee or permittee may move a seismic line for an approved exploration program being conducted on private land, road allowances and public lands in accordance with this Directive.

7.2 Requirements

7.2.1 Private Land and Road Allowance Amendments

For minor changes or amendments to programs on private land a program licensee must first obtain consent from a private landowner to gain access to private land for any geophysical operations. To provide industry with flexibility to address landowner concerns relating to the location of buildings, wells, corrals, etc. without the need to amend an approved exploration program, the licensee or permittee may move a seismic line in an approved exploration program being conducted on private lands without obtaining an amendment to the exploration approval if the line is moved:

a. Within the quarter section in which it is located as shown on the preliminary plan approved for the program, or
b. To an adjoining quarter section if the location of a line in that quarter section is shown on the preliminary plan approved for the program or in an amendment to the exploration approval.

The Program licensee is required to obtain an amendment to an approved exploration program on private land if:

- line movement that changes the orientation of the line,
- additional lines are added,
- the approved lines of a program are extended, or
- lines are moved from private land to road allowances or road allowances to private land.

7.2.2 Public Lands Geophysical Temporary Field Authorizations (TFA) and Amendments

The Program Licensee is required to obtain a Geophysical Temporary Field Authorization (TFA) for minor changes to programs on public lands that are not already authorized under the preliminary program approval, the approved GFR or allowable under the Policy and Procedures Document for the Geophysical Field Report Form.

A TFA application may only be submitted after a preliminary program approval has been granted and before notification of program completion.

The AER may approve TFA activities on public lands up to the following limits per program:

Table 7.2.3 Geophysical TFA Criteria on public lands

Activity	Criteria	FNC requirements
New Cutline or Extension: additional new cut seismic line(s) or the extension of new cut seismic line(s).	Maximum of 10 km of new cutline or new cutline extension	An FNC Pre-Consultation Assessment is required only when the total area of a new clearing exceeds 0.5 ha. An FNC decision of either "No Consultation Required" or a decision of "Adequacy" is required at time of issuance for a new clearing that exceed 0.5 ha.
Existing Cutline or Extension: the use of an already existing seismic line(s) or to utilize an extended length of an already authorized existing seismic line(s).	Maximum of 30 km of existing cutline use or existing cutline extension	First Nations or Metis Settlement Consultation not required.
Staging Areas or Mag Sites: The use of additional area to facilitate storage of equipment, parking or heli-assist operations.	Existing clearings should be used wherever possible	An FNC Pre-Consultation Assessment is required only when the total area of the new clearing exceeds 0.5 ha. An FNC decision of either "No Consultation Required" or a decision of "Adequacy" is required at time of issuance for a new clearing that exceed 0.5 ha.
Watercourse Crossings: installation of additional temporary watercourse crossings.	Only temporary watercourse crossings are permitted (no culverts, concrete footings, wing walls, etc.)	First Nations or Metis Settlement Consultation not required.
Stub Lines: additional infill line(s) or area(s) required between planned seismic lines due to a barrier or hazard	Minimal clearing preferred with hand cut being desirable	First Nations or Metis Settlement Consultation not required.
Shifting of Lines: line(s) or segments of a line moved or relocated due to a barrier, environmental hazards, topography, or operability	Within the same row of quarter sections	First Nations or Metis Settlement Consultation not required.
Push Outs: area taken to facilitate equipment passing along one way access routes or turnarounds.	Pushouts should consist of natural openings and avoid planted areas	First Nations or Metis Settlement Consultation not required.
Temporary Access: additional temporary access required outside of the approved preliminary program plan	Existing access only	First Nations or Metis Settlement Consultation not required.

The program licensee is required to obtain a formal amendment to an approved exploration program on public land if:

- the overall operating methodology of a program changes, or
- activities fall outside of Table 7.2.3 TFA criteria.

Refer to section 6 of this Directive to submit a formal amendment for an existing exploration program approval.

7.3 Procedure

A TFA may be requested by completing the temporary field authorization form found on the AER website under Forms and emailing it to Exploration@aer.ca.

Information that must be included with TFA requests to ensure appropriate review includes:

- a completed TFA form,
- a detailed Public Land Standing Report (PLSR) to assess ownership or adjacency issues for any new quarter section that is affected by the addition of lines,
- a plan or map of the proposed activities,
- If required, any consent(s), and
- If First Nations or Metis Settlement Consultation is required, a File Number for Consultation (FNC)

7.4 Other

A copy of the TFA approval must be included with the Final Plan submission. TFA activities must also be recorded on all final plan maps and the Final Plan New Cut Data Summary Sheet.

There are no fees associated with requests for TFA's.

Timber Damage Assessment (TDA) fees will be accounted for and charged under the final plan submission.

8.0 Extension to an Exploration Approval

8.1 Background

Section 33(3) of the Regulation provides for extending the terms of an exploration approval. This alleviates the need for the program licensee to resubmit an application for approval and allows the existing program to continue without disruption.

8.2 Requirements

The term of an exploration approval may be extended if the program licensee or permittee makes a written request to the AER. An extension to an exploration approval must be approved by the AER and the AER will review and make adjustments for seasonal operating conditions.

8.3 Procedure

To request an extension to an exploration approval, the licensee or permittee must make a written request to the AER at the address listed under contact information.

The request for an extension to the terms of a previously issued exploration approval will result in a review of the geophysical field report form (if public lands are involved) and also the conditions of the previous exploration approval.

If the geophysical field report form or the conditions of the exploration approval are no longer applicable, they will be modified accordingly through amending the geophysical field report form and issuing an amendment to the exploration approval.

The licensee or permittee will receive written confirmation from the AER stating whether their request for an extension to the terms of the exploration approval has been approved or rejected. If the request is granted and there are changes or additions to the operating conditions, these will be attached to the written confirmation as an amendment to the exploration approval.

8.4 Other

There are no fees associated with a request for an extension to the terms of an exploration approval.

9.0 Final Plan Submission

9.1 Background

Under Section 34 of the Regulation, a program licensee is required to file a final plan for an approved program of exploration with the AER. The final plan must be submitted within 90 days following the date of program completion, which is the date on which the recording phase of an approved program is completed.

9.2 Requirements

A final plan submission is required for all approved geophysical programs that have been completed in the Province of Alberta as described below:

1. The Application Disposition Process and Tracking (ADEPT) automated system provides to the geophysical industry the window for final plan submissions for all approved geophysical programs that have been conducted in the Province of Alberta. To access search “ADEPT” on the AER website at aer.ca
2. Final plans must be digitally submitted as described under Procedures. To access the procedures search “Guides for Forms Completion” on the AER website at aer.ca
3. Digital submission requirements are described in the “Digital Geophysical Submissions Specifications” document. To view these specifications search “Guides for Forms Completion” on the AER website at aer.ca
4. Final Plan submission must be accompanied by the “Final Geophysical Program Information Cover Sheet” to access the form search “Exploration Forms” at aer.ca
5. Maps are preferred to be on a 1:50,000 scale map. A larger scale may be used for larger programs if information that is required by the “Final Geophysical Program Information Cover Sheet” cannot be clearly depicted.
6. In the case of a program that was conducted on public land that is within the location of, or subject to, a Forest Management Agreement or timber licence, a copy of the final plan must be provided to the holder of the Forest Management Agreement or timber licence.
7. If the program did not commence, a letter of cancellation must be submitted to the AER at the address below prior to or within 30 days of the expiry date of the program approval.
8. There are no fees associated with a cancellation or final plan submission.

9.3 Procedure

9.3.1 Final Plans

The final plan submission must be digitally submitted through the Application Disposition Processing and Tracking (ADEPT) system.

9.3.2 Interim Final Plans

Interim final plans are required of all Time Lapse (TL) geophysical programs conducted within the Province of Alberta within 90 days of completion of the first recording event and by July 31 of each year subsequent recording events occur until the Approval expires as described below:

- Copies of all interim final plans must be submitted to the AER at geosub@aer.ca.

If no activity occurred on the program a declaration stating such must be submitted **by July 31 of each year** until the program expires.

10.0 Notice to Relevant Department Authority for Commencement, Temporary Cessations, and Completion

10.1 Background

Under sections 37 and 39 of the Regulation, the licensee and permittee is required to provide the relevant department authority with notice regarding the particulars of the approved exploration program upon commencement, temporary cessation, and completion.

10.2 Requirements

10.2.1 Notification of Program Commencement

Program commencement is the date on which entry to the land to conduct exploration first occurs following the approval of a program of exploration.

Commencement activities may include activities that cause surface disturbance such as line cutting, drilling, or any treatment of site locations to prepare it for geophysical activity.

On private land, where landowner consent is received prior to program approval, flagging and locating program lines and sites can be completed prior to program commencement as long as no surface disturbance occurs (including line cutting).

On public lands, consent is not required prior to program approval for flagging and locating program lines from the relevant Department authority where no surface disturbance occurs.

The licensee or permittee must notify the AER within five (5) business days prior to the date of commencement, unless agreed upon in writing from the AER to a different time period. The notice of commencement must be completed using the commencement form found on the AER website under Forms and emailing it to Exploration@aer.ca.

10.2.2 Notification of Temporary or Interim Cessation

Program operations are considered to have temporarily ceased, if before the date of program completion:

a. the crew and equipment in a program of exploration are to be removed from the location of the program for a period of 30 days or more as shown on the approved preliminary plan, or
b. for monitoring programs that continuously record (i.e. microseismic), construction or site maintenance causing surface disturbance (includes line cutting) of the station or site(s) is completed.

The licensee or permitee must, before ceasing operations under clauses (a) or (b) above, provide the relevant Department authority and any relevant land authorities notice in writing of the date on which exploration field operations are to temporarily cease and of the approximate date on which the operations are to be resumed, including any changes to the date on which exploration field operations under the program are to be resumed.

The AER must be notified in writing of the required temporary cessation information by emailing Exploration@aer.ca.

In the case of a program of exploration conducted in whole or in part on land that is within the location of or subject to a forest management agreement or timber licence, temporary cessation notifications apply, with necessary modifications, as if the holder of the forest management agreement or timber licence were a relevant land authority.

For temporary notification to Relevant Land Authorities (Municipalities, Special Areas board, Alberta Transportation) see section 11.0 of this directive.

Failure of Resumption Notice

If on the date on which exploration field operations under the program were notified to be resumed, and in a case where:

- a resumption notice is not given, and

- operations are not resumed, and
- requests for resumption information, when requested by the AER in writing, fails to be provided

the exploration approval granted in respect of the program of exploration will be deemed to have been completed and expired on the date operations were temporary ceased.

10.2.3 Notification of Program Completion

Program completion is the date on which the recording phase of an approved exploration program is completed.

For time lapse (4D) or microseismic programs, program completion is the date when the recording phase is completed for the last and final term of the program.

The licensee or permittee must notify the AER within five (5) business days after to the date of completion, unless agreed upon in writing from the AER to a different time period. The notice of completion must be completed using the completion form found on the AER website under Forms and emailing it to Exploration@aer.ca.

10.3 Procedure

The AER must be notified of program commencement, temporary cessations and completion by downloading a copy of applicable forms and emailing them to Exploration@aer.ca.

When the required information for program commencement is received by the AER, a confirmation number for commencement will be given to the program licensee or program permittee. This confirmation number should be recorded by the licensee or permittee as verification that the AER has been notified of commencement. Once the licensee or permittee receives the confirmation number for commencement, the exploration program can begin.

When the required information for program completion is received by the AER a confirmation number for completion will be given to the licensee or permittee. This confirmation number should be recorded by the licensee or permittee as verification that the AER has been notified of program completion.

When the required information for program temporary cessations is received by the AER, the information will be recorded; however, a confirmation number will not be given.

11.0 Notice to Relevant Land Authorities and Holders of Forest Management Agreements and Timber Licenses

11.1 Background

Under sections 37, 38 and 39 of the Regulation, the licensee or permittee is responsible to provide written notification to the Relevant Land Authorities and holders of forest management agreements and timber licenses upon the commencement, temporary cessation, and completion of an approved exploration program. The manner and format of that notification is set forth in the requirements and procedure of this directive.

11.2 Requirements

Relevant Land Authorities includes Alberta Transportation, Municipal Council, and/or the Special Areas Board if an approved program is to be conducted wholly or partially within their administrative areas. Notifications to Relevant Land Authorities must be provided to:

a. Operations manager for the Minister of Transportation in relation to a program of exploration that is to be conducted, or is being conducted, in whole or in part on highways that are subject to the direction, control and management of the Minister of Transportation.
b. Municipal Council for the municipality in which all or part of the program occurs.
c. Special Areas Board for the Special Area in which all or part of the program occurs.

11.2.1 Commencement Notification

Not less than 2 business days nor more than 15 business days prior to the date of commencement, or if the relevant land authority has agreed in writing to a different time or period of time for the purpose of this subsection, at or before that time or within that period of time, the licensee or permittee shall ensure that the relevant land authority and holders of forest management agreements and timber licenses is provided with:

a. written notice of the date of commencement in the form required by this Directive, and
b. a copy of the exploration approval and of the approved preliminary plan for the program of exploration.

11.2.2 Program Amendment Notification

If the relevant Department authority approves an amendment to the exploration approval for an approved exploration program at any time after the earlier of

a. compliance by the program licensee or program permittee with the requirements in 11.2.1 above, and
b. the time or period of time specified for compliance by the program licensee or program permittee pursuant to the requirements in 11.2.1 above, and
c. the relevant land authority is the Special Areas Board or the council of a municipality,

the licensee or permittee shall, not more than 2 business days after the approval of the amendment, ensure that written notice of the amendment is provided to the relevant land authority and holders of forest management agreements and timber licenses.

11.2.3 Temporary or Interim Cessation Notification

Temporary cessations to relevant land authorities and holders of forest management agreements and timber licenses must be given prior to the removal of the crew and equipment from the location of the program as shown in the approved preliminary plan.

11.2.4 Completion Notification

Not more than one business day after the date of completion of an approved exploration program that was conducted in whole or in part in a municipality or special area or on a highway referred to in subsection (1)(b)(iii), a forest management agreement area or timber license area, the licensee or permittee shall ensure that written notice of the date of completion is provided to the relevant land authority and holders of forest management agreements and timber licenses.

11.3 Procedure

Written notifications to Relevant Land Authorities and holders of forest management agreements and timber licenses must use the following forms which can be viewed or downloaded from the AER website at aer.ca:

- Notice of Commencement for Geophysical Operations
- Notice to Temporarily Cease or Resume Operations for Geophysical Operations
- Notice of Completion for Geophysical Operations

11.4 Other

If an approved program is amended the licensee or permittee shall ensure the Relevant Land Authority, the holder of the forest management agreement or the holder of a timber licence is notified of the amendment in writing.

12.0 Change in Designation of Program Permittee

12.1 Background

Under section 40 of the Regulation, the program permittee may be changed by giving written notification to the AER.

12.2 Requirements

The program permittee is responsible for managing the approved exploration program, all field operators, and field operation of exploration equipment used in the conduct of the exploration program.

The new program permittee must be a holder of a valid permit.

12.3 Procedure

Changing the Program Permittee

To transfer a program of exploration to another permittee after program commencement, the program licensee must provide written notification to the AER, identifying who the new program permittee is, including the permit number, permittee supervisor name and contact information.

If program operations temporarily ceased and a temporary cessation notice was provided under section 10.2.3 of this Directive, the new program permittee must comply with section 38 of the Regulation by submitting re-commencement notification to the AER and to the holder of a forest management agreement or a timber license, as described in section 11 of this Directive.

12.4 Other

There are no fees associated with a change in program permittee.

Although a program of exploration can be transferred between permittee's, permit identification numbers are non-transferable between companies.

13.0 Operation of Exploration Equipment

13.1 Background

Under sections 41 and 55 of the Regulation, a program licensee, permittee and their subcontractors are required to display their license number, permit number or unique identification number, and program number as indicated below.

13.2 Requirements

13.2.1 Operator Identification on Equipment and Vehicles

The program licensee and permittee must ensure that exploration equipment and vehicles used by or on behalf of the licensee, permittee or their subcontractors clearly displays appropriate identification numbers when used to conduct activities on exploration programs.

Third-party operators or subcontractors hired by the program licensee or permittee may apply for a unique identification number (UIN) under section 41(4) of the Regulation and display that number on their equipment being used in connection with the exploration program instead of displaying the program licensee's or permittee's number. Having a UIN eliminates the need for a subcontractor to change identification numbers on their equipment as they may move from program to program.

If a subcontractor chooses to not obtain a UIN, the subcontractor must display either the program's licence or permit number for the active exploration program.

One of the following identification numbers must be clearly displayed on equipment and vehicles as follows:

a. For licensees, the letters "LIC. NO.", followed by the identification number which must be at least 10 cm high and located on equipment or vehicle(s), or
b. For permittees, the letters "PERMIT NO." followed by the identification number which must be at least 10 cm high and located on equipment or vehicle(s), or
c. For subcontractors, the letter "U" followed by the identification number which must be at least 10 cm high and located on equipment or vehicle(s).

Types of exploration equipment and vehicles that must display an identification number are as follows:

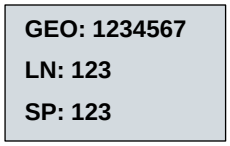
- Wheeled or tracked survey vehicles that are used in surveying the exploration program.
- Mechanical line cutting equipment used in construction and development of a seismic line (e.g., cats and mulchers).
- Wheeled or tracked drilling equipment used in the program.
- Wheeled or tracked equipment used in producing surface energy for the program.
- Vehicles used in recording operations.
- Vehicles used in line cleanup.
- Vehicles used on-site on a regular or continuous basis.

Vehicles exclude ATV's, UTV's, sleds and snowmobiles which do not require an identification number.

13.2.2 Program Identification Tags

To the extent possible, the licensee and permittee must, before the equipment and vehicles are removed from the program location, ensure that a metal program identification tag is clearly impressed or engraved to contain the GEO program number, the program line number and program source point number (figure 13.2.2.1 below) and is displayed in the location(s) of a program of exploration as follows:

Figure 13.2.2



13.2.2.1 For Explosive Energy Source(s)

If an explosive energy source is used in the conduct of a program of exploration, the licensee and permittee shall, to the extent possible, ensure that, a program tag is securely affixed in a location that is readily visible and is:

a. facing the centre source point,
b. on the same side of the highway or road as the center source point if there is a highway or public road, and
c. not more than 10 metres from each centre source point.

13.2.2.2 For Non-Explosive Energy Source(s) and Microseismic stations

If a non-explosive energy source is used in the conduct of a program of exploration, the program licensee and program permittee shall, to the extent possible, ensure that a program tag is securely affixed and readily visible:

a. for linear activities, at minimum, at the beginning and end of every line, and any main access points along a line
b. for non-linear activities or microseismic stations, at each station or site location(s).

13.2.2.3 Other

When appropriate and justified, the regulatory body may provide written exemptions to program tag requirements upon written request from the licensee or permittee.

14.0 Use of Products in Exploration

14.1 Background

Under section 42 of the Regulation, the licensee and permittee shall use only approved products as described in this directive.

14.2 Requirements

For the purposes of Section 42 of the Regulation approved “product” means:

a. program tags which meet the requirements of section 13.2.2 of this directive.
b. shot hole plugs which are non-toxic, can withstand environmental conditions in which the plugs are to be used without breakage, and ensures the plugs remain in place downhole in a safe and secure condition.
c. sealing materials which are non-toxic and effectively seal the wellbore given the environmental conditions in which the sealing material is to be used; may include: suitable cement, grout, foam, concrete, bentonite or equivalent commercial slurry or clay slurry.
d. survey markers which can withstand environmental conditions in which the survey marker is to be utilized.
e. any other product that has been applied for and approved as part of an exploration program application.

15.0 Distance Requirements

15.1 Background

Pursuant to section 44 of the Regulation, setback distances from specified structures are required for various energy sources used in an approved exploration program.

15.2 Requirements

15.2.1 Explosive Seismic Energy Source

An explosive energy source uses dynamite or other explosives to produce a signal for acquiring exploration data. Charges or accumulated charges for each shot point that are larger than 20 kg must be approved for each program (section 49 of the Regulation). The setback distance for an explosive energy source is set forth in Table 15.6 “Required Setback Distance for Explosives”. With written consent of the owner, reduced setback distances can be used as set forth in the table where it states, “setback distance with consent of owner”. Consents must be made available to the regulatory body upon request. All distances are measured from the shot point(s) to the closest point of the structure(s).

15.2.2 Non-Explosive Seismic Energy Source

A non-explosive energy source uses mechanically generated energy at the ground surface that produces a seismic signal for acquiring exploration data. This includes vibrating sources, mechanical impulsive sources or air guns and excludes sources used solely for generating electromagnetic signals (such as ground-penetrating radar or electromagnetic surveys). The setback distance for a non-explosive energy source is set forth in Table 15.7 “Required Setback Distances for Non-Explosives”. With written consent of the owner, reduced setback distances can be used as set forth in the table where it states, “setback distance with consent of owner”. Consents must be made available to the regulatory body upon request. All distances are measured from the nearest base plate, striking plate, or surface contact to the closest point of the structure(s).

15.2.3 Specified Structures and Vibration Thresholds

Specified structures are defined and listed in Table 15.5 “Specified Structures and Definitions”. Structures are grouped by setback distance requirement and categories A, B, C, D and E.

As a best practice, operators should limit vibration intensity (Peak Particle Velocity (PPV) measured in millimeters per second) to below:

- 50 mm/s for structures listed in category A and B,
- 80 mm/s for structures listed in category C, and
- 125 mm/s for structures listed in category D.

15.4 Other

Exceptions to setback distances listed in Tables 15.6 and 15.7 may be considered and approved by the Regulatory body through a written request submitted as part of an exploration program application submission.

Information to include in written requests to ensure appropriate review:

- the structure and reduced setback being requested,
- the type of energy source that will be used and details of its operation,
- any consent(s) from the owner of the structure,
- justification for requiring the reduced setback, and
- planned mitigation for any identified risk.

TABLE 15.5 SPECIFIED STRUCTURES AND DEFINITIONS

	STRUCTURE CATEGORY				
	A	**B**	**C**	**D**	**E**
SPECIFIED STRUCTURES	Dams*	Residence, barn or building(s) with a concrete base; Water well or developed springs*; Observation wells, piezometers and geotechnical instruments*; Cemetery	High pressure pipeline*; Energy resource activity[1] category B specified structures; Concrete water pipelines Concrete lined irrigation canals (>4 m width); Dugouts*	Low pressure pipeline*; Non-concrete water pipelines; Septic tank*; Septic mound*	Buried telecommunication lines or cables Abandoned wells*

***** *refer to specified structure definition below*

[1] *as defined under the Responsible Energy Development Act (REDA)*

Structure	**Definition**
Abandoned wells	A well licensed under Directive 056 that has been drilled, abandoned, cut, and capped at surface.
Dams	Dams are structures that provide live storage capacities of 30,000 cubic metres or more and are 2.5 metres or more in height; or, are structures that are classified as being a significant, high, very high or extreme consequence in the Dam and Canal Safety Directive under the Water Ministerial Regulation; or, are structures that exist for the purpose of storing flowable tailings.
Dugout	Dugouts are earthen excavations designed to collect water and store it for domestic use during drier times. Typically, dugout capacity ranges from a few hundred cubic meters to thousands of cubic meters. Distances should be measured from the inside edge of high-water mark.
High Pressure Pipeline	High pressure pipelines are pipelines that operate at or are intended to operate at a pressure in excess of 700 kPa. Distances are measured from the centre of the pipeline. These pipelines could be above or below ground. Additional distance requirements under the Canadian Energy Regulator Act, Pipeline Act and Pipeline Rules may apply and should be used in conjunction with these setback distances.
Low Pressure Pipeline	Low pressure pipelines, are pipelines that operate at, or are intended to operate at a pressure of 700 kPa or less. Distances are measured from the centre of the pipeline. These pipelines could be above or below ground. Additional distance requirements under the Canadian Energy Regulator Act, Pipeline Act and Pipeline Rules may apply and should be used in conjunction with these setback distances.
Observation wells, piezometers, and geotechnical instruments	These are observation wells, piezometers and geotechnical instruments that are used for monitoring (e.g., Groundwater Observation Well Network (GOWN) and Alberta Transportation research and monitoring stations). Excludes energy resource activities observation wells, piezometers, and geotechnical instruments (see category C specified structures).
Water wells or Developed springs	Water wells includes both active and inactive water wells. A developed spring is an area of local groundwater discharge being used for domestic and/or non-domestic purposes. Excludes energy resource activities water wells (see category C specified structures).
Septic Tank	A septic tank is defined as a tank that is used as a septic storage device.
Septic Mound	A septic mound is a septic drain field located above the natural ground surface.

TABLE 15.6 REQUIRED SETBACK DISTANCES FOR EXPLOSIVES

	A	B		C		D	E
Explosive Charge Size (kg)	Setback distance	Setback distance	Setback distance with consent of owner	Setback distance	Setback distance with consent of owner	Setback distance	Setback distance
up to 0.125	200 m	180 m	16 m	32 m	8 m	5 m	2 m
0.126 to 0.25	200 m	180 m	23 m	32 m	11 m	8 m	2 m
0.26 to 0.50	200 m	180 m	32 m	32 m	16 m	11 m	2 m
0.51 to 0.75	200 m	180 m	39 m	32 m	20 m	13 m	2 m
0.76 to 1.00	200 m	180 m	45 m	32 m	23 m	15 m	2 m
1.01 to 1.50	200 m	180 m	55 m	32 m	28 m	18 m	2 m
1.51 to 2.00	200 m	180 m	64 m	32 m	32 m	21 m	2 m
2.01 to 4.00	200 m	180 m	90 m	45 m	45 m	30 m	5 m
4.01 to 6.00	200 m	180 m	110 m	55 m	55 m	37 m	5 m
6.01 to 8.00	200 m	180 m	128 m	64 m	64 m	42 m	5 m
8.01 to 10.00	200 m	180 m	142 m	70 m	70 m	47 m	5 m
10.01 to 12.00	200 m	180 m	156 m	78 m	78 m	52 m	5 m
12.01 to 20.00	200 m	200 m	200 m	100 m	100 m	67 m	5 m

Charge size is the accumulated mass of explosive at a shot point. All distances are measured from the shot point(s) to the structure(s).

TABLE 15.7 REQUIRED SETBACK DISTANCES FOR NON-EXPLOSIVES

		STRUCTURE CATEGORY						
		A	**B**		**C**		**D**	**E**
Source Type	Combined fundamental force* (ff) or Total weight	Setback distance	Setback distance	Setback distance with consent of owner	Setback distance	Setback distance with consent of owner	Setback distance	Setback distance
Vibrator A	ff is less than 25,000 lbs.	50 m	50 m	16 m	15 m	5 m	5 m	2 m
Vibrator B	ff is less than 55,000 lbs and greater than 25,000 lbs.	100 m	100 m	25 m	15 m	8 m	5 m	3 m
Vibrator C	ff is equal to or greater than 55,000 lbs.	100 m	100 m	50 m	15 m	10 m	5 m	3m
Mechanical A	less than 6500 lbs.	100 m	100 m	16 m	15 m	5 m	5 m	2 m
Mechanical B	between 6500 lbs and 15,000 lbs.	100 m	100 m	25 m	15 m	8 m	5 m	3 m
Mechanical C	greater than 15,000 lbs.	100 m	100 m	50 m	15 m	10 m	5 m	3 m
Portable	equipment is equal to or less than 350 lbs.	50 m	50 m	5 m	15 m	5 m	3 m	2 m

**Combined vibrator ff is defined as the sum of all vibrators fundamental force sweeping at one location (number of vibrators multiplied by the ff). All distances are measured from the nearest base plate, striking plate, or surface contact to the structure(s).*

16.0 Flowing Holes and Encountering Gas

16.1 Background

Occasionally an aquifer or stratum releases water that comes to the ground surface or flows. This may occur during or after a shot hole or test hole is drilled (i.e., flowing holes). The licensee and permittee, under sections 46(1) and 47 of the Regulation, must follow pre-established procedures when this occurs.

16.2 Requirements

1. When water is released from a stratum or aquifer and rises to the surface of a shot hole or test hole while drilling, the program licensee or permittee for the approved exploration program must immediately discontinue the drilling and ensure no explosive charge is loaded in the shot hole.
2. When aquifer or stratum releases water that comes to the ground surface or flows from a shot hole or test hole, the water must be contained to the aquifer or stratum of origin as described in the procedures section of this Directive.
3. For commenced operations, when water is released from a shot hole or test hole, step drilling procedures must be implemented before successive shot holes or test hole drilling is continued.
4. When a shot hole becomes a flowing hole before a charge is detonated, the charge is to be shot. This is due to the danger of detonating the charge while attempting to confine the flow to the aquifer or stratum of origin.
5. The licensee or permittee must immediately submit a flowing hole report, which can be viewed or downloaded from the AER website at aer.ca, for each flowing shot hole or test hole that is encountered for any approved exploration programs. The report can be e-mailed to exploration@aer.ca,
6. The licensee or permittee must immediately submit a flowing hole report, which can be viewed or downloaded from the AER website at aer.ca, for each shot hole or test hole that encounters gas for any approved exploration programs. The report can be e-mailed to Exploration@aer.ca.

16.3 Procedure

16.3.1 Containment of Released Water or Water Rises to the Ground Surface

1. For commenced programs, immediately discontinue drilling the shot hole or test hole.
2. For commenced or completed programs, contain the water from the shot hole or test hole to the aquifer of origin as quickly as possible using one of the following methods:
   a. Use of inflatable plugging device and bentonite:
      - Remove bentonite and approved hole plug (plastic) from hole.
      - Sound shot hole or test hole to bottom to establish the depth and check for bridging of hole (sand and gravel).
      - Insert inflatable plugging device to the bottom (total depth) of the hole.
      - Inflate and check for effect on flow rate of water.
      - If flow rate does not cease, deflate plugging device and raise it 1 m up the shot hole or test hole and re-inflate.
      - Continue process in this manner until flow is stopped.
      - Remove the inflation pipe form the hole.
      - Install bentonite chips or pellets from the top of the inflatable plug to within 1 m of the surface.
      - Install approved hole plug and abandon the shot hole or test hole as per section 19 of this Directive.
      - Record the GPS location of the shot hole or hole and any information (if available) from a program tag next to the hole.
      - Remove all equipment, surplus materials and waste from the site.

   b. Pressure cement the shot hole or test hole from bottom to within 1 meter of the surface and abandon as per section 19 of this Directive; or

   c. Reverse auger bentonite into the shot hole or test hole from bottom to top; or

d. Contact the AER for approval to use any other method to contain water that is released or comes to the surface of a shot hole or test hole.

Note: The method, material and equipment used to contain the flow of water or gas to the aquifer or stratum from which it was released depends on variables such as (but not limited to) geology, flow rate, hole and ground surface condition.

16.3.2 Step Drilling / Commenced Programs

Drilling must be discontinued immediately if water is observed and/or the shot hole or test hole starts to flow at the surface. The water must then be confined to the aquifer or stratum of origin using the above procedure (Containment of Released Water or Water Rises to the Ground Surface). The "step up–step down" process described below **must** then be implemented.

1. Regardless of whether the next shot hole or test hole to be drilled in the program is part of a multi-hole pattern or the next hole in a sequence, the following steps must be taken:
    - If the depth at which the water was encountered in the flowing hole is known, the maximum depth of the next shot hole or test hole must be 3 m **less** than that point of encounter; **or**
    - The maximum depth of the next shot hole or test hole must be 3 m **less** than the drilled depth of the flowing hole.
2. If water is again observed, the water must be confined to the aquifer or stratum of origin using the procedure identified above (Containment of Released Water or Water Rises to the Ground Surface). As well, the drilling depth of the subsequent shot hole or test hole in the program must be "stepped up" by 3 m. Continue this process as long as water is observed.
3. Once water is no longer observed, the same drilling depth must be maintained for the next shot holes or test holes in the sequence for a minimum of 200 m. Beyond this distance, the drilling can be "stepped down" by 3 m at the next hole. If no water is observed, the following shot hole or test hole can be "stepped down" by another 3 m. This pattern must be followed until the original proposed drilling depth is reached.
4. If water is observed at any point, the drilling must again be "stepped up" by 3 m, as described above.

16.3.3 Flowing Hole Report

The flowing hole report, which can be viewed or downloaded from the AER website at aer.ca, is to be used to report any/all releases of water and/or gas from a commenced or complete program. The form must be submitted to the AER at Exploration@aer.ca

16.3.4 Other

Converting Flowing Hole to Water Well

A flowing shot hole or flowing test hole remains a shot hole or test hole as defined in the Regulation until the flow of water in the hole is confined and contained in accordance with the above procedure. The above procedure does not apply if the flow of water from a shot hole or test hole is confined and contained by the completion and operation of the flowing hole (shot hole or test hole) as a water well in accordance with the *Water (Ministerial) Regulation* (AR 205/98). If a flowing hole is to be converted to a water well, contact AEP.

Damage by a Third Party

If the shot hole(s) or test hole(s) complies with section 46 and/or section 47 of the Regulation, and the plugging is intentionally damaged or destroyed (unless through construction or upgrading of a highway or public road), the responsible party must repair the damage or re-plug the hole. This is in accordance with directions from the AER, as per section 53 of the Regulation.

17.0 Charges in Shot Holes and Depth of Shot and Test Holes that Exceed Maximum Levels

17.1 Background

Pursuant to section 49 of the Regulation, the maximum allowable depth of a shot hole or test hole in a program of exploration is 20 m. The maximum allowable explosive energy source that can be used in a shot hole is 20 kg. In some cases, the program licensee or permittee may propose to drill shot holes and/or test holes deeper than 20 m or use an explosive energy source within a shot hole that is greater than 20 kg allowed by the AER. The requirements and procedures for exceeding the maximum depth of a shot hole, test hole, or the maximum charge size are set forth in this Directive.

17.2 Requirements

17.2.1 Explosive Charges

If the size of the explosive charge proposed to be detonated in a shot hole drilled in the conduct of a program of exploration is greater than 20 kg, the licensee or permittee must:

- provide the AER with justification for exceeding the maximum charge size; this must accompany the submission for application for approval under section 23 of the Regulation,
- obtain written approval from the AER to exceed the maximum size; and
- ensure the explosive charge is not loaded in the shot hole before written approval is given by the AER.

17.2.3 Depth of Shot Hole

If the depth of a shot hole drilled in the conduct of a program of exploration is proposed to be drilled at a depth deeper than 20 m, which is the maximum allowable depth, the licensee or permittee must:

- provide the AER with written justification for exceeding the maximum allowable depth; this must accompany the submission for application for approval under section 23 of the Regulation,
- provide the AER with the proposed temporary and permanent shot hole abandonment procedures, and
- ensure the shot hole is **not drilled** beyond the maximum allowable depth **before** written approval is received.

17.2.4 Depth of a Test Hole

If a depth of a test hole drilled in the conduct of a program of exploration is proposed to be deeper than 20 m, which is the maximum allowable depth, the licensee or permittee must:

- provide the AER with written justification for exceeding the maximum allowable depth; this must accompany the submission for application for approval under section 23 of the Regulation,
- provide the AER with the proposed test hole temporary and permanent abandonment procedures, and,
- ensure the test hole is not drilled beyond the maximum allowable depth before written approval by the AER.

17.3 Procedure

The licensee or permittee must apply for written permission from the AER listed below to exceed the maximum charge size or the maximum allowable depths of shot holes or test holes. This must accompany the submission for application for approval under section 23 of the Regulation.

18.0 Temporary Abandonment of Shot Holes and Test Holes

18.1 Background

Under section 50 of Regulation, shot holes and test holes drilled in the conduct of an approved exploration program must not be left unattended until they are temporarily abandoned in accordance with this Directive.

18.2 Requirements

The licensee or permittee must ensure that each shot hole or test hole drilled in a program of exploration, drilled to a depth of 20 metres or less, that has not been permanently abandoned, is not left unattended until it is temporarily abandoned by complying with the “Procedures” section of this Directive or, is temporarily abandoned in a manner, if any, prescribed by the Minister under section 52 of the Regulation.

18.3 Procedure

18.3.1 Requirements for temporary abandonment of all shot holes:

a. The charge in the shot must be securely affixed to a winged sand point container.
b. Drill cuttings or other approval materials must be placed in the hole to secure the charge at the depth at which it was loaded.
c. The wire attached to the charge is pulled tight to the surface of the ground.
d. The number[1] of the program licensee is clearly marked on the approved shot hole plug.
e. All drill cuttings not required to fill the hole are spread evenly over the ground surrounding the hole.
f. Excess wire above the ground must be wrapped around the approved survey marker.

18.3.2 Requirements for temporary abandonment of shot holes for specified locations:

1. Requirements for temporary abandonment of shot holes drilled within the **White Area** of the province (excluding surveyed road allowances):
    a. An approved plug must be placed in the shot hole at a depth of not less than 1 m below the surface of the ground.
    b. Not less than 40 cm of an approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 60 cm of drill cuttings or other material obtained from the shot hole, and thoroughly tamped.

2. Requirements for temporary abandonment of shot holes drilled within a **surveyed road allowance**:
    a. An approved plug must be placed in the shot hole at a depth of not less than 4 m below the surface of the ground.
    b. Not less than 3.4 m of an approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 60 cm of drill cuttings or other material obtained from the shot hole, and thoroughly tamped.

3. Requirements for temporary abandonment of shot holes drilled within the **Green Area** of the province:
    a. An approved plug must be placed in the hole at a depth of not less than 1 m below the surface of the ground.

[1] Shot hole plugs may be marked by either a license or permit number until April 30, 2023.

b. Not less than 20 cm of approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 80 cm of an approved sealing product, drill cuttings or other material obtained from the shot hole, and thoroughly tamped.

4. Requirements for temporary abandonment of shot holes drilled at heli-portable sites of a heli-portable operations:
   a. An approved plug must be placed in the shot hole at a depth of not less than 1 m below the surface of the ground.
   b. Approved sealing product, drill cuttings or other material obtained from the shot hole must be used to fill from the approved plug to the ground surface and thoroughly tamped.

18.3.3 Requirements for temporary abandonment of all test holes:

a. The number[1] of the program licensee must be clearly marked on the plug.
b. All drill cuttings not required to fill the hole must be spread evenly over the ground surrounding the hole.

18.3.4 Requirements for temporary abandonment of test holes for specified locations:

1. Requirements for temporary abandonment of test holes within the **White Area** of the province (excluding surveyed road allowances):
   a. An approved plug must be placed in the hole at a depth of not less than 1 m below the surface of the ground.
   b. Not less than 40 cm of an approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 60 cm of drill cuttings or other material obtained from the hole, and thoroughly tamped.
2. Requirements for temporary abandonment of test holes within a surveyed road allowance:
   a. An approved plug must be placed in the hole at a depth of not less than 1 m below the surface of the ground.
   b. Not less than 40 cm of an approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 60 cm of drill cuttings or other material obtained from the hole, and thoroughly tamped.
   c. Temporary abandonment of test holes on road allowances requires a 1 m plug. Using the 4 m plug required for permanent abandonment of shot holes on road allowances creates difficulties when the test hole needs to be re-entered. If re-entry is not an issue, the test hole should be permanently abandoned as per section 19.3.2.2 of this Directive.
3. Requirements for temporary abandonment of test holes within the Green Area of the province:
   a. An approved plug must be placed in the hole at a depth of not less than 1 m below the surface of the ground.
   b. Not less than 20 cm of approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 80 cm of an approved sealing product, drill cuttings or other material obtained from the hole, and thoroughly tamped.

4. Requirements for temporary abandonment of test holes drilled at heli-portable sites of a heli-portable operations:
   a. An approved plug must be placed in the hole at a depth of not less than 1 m below the surface of the ground.
   b. Approved sealing product, drill cuttings or other material obtained from the hole must be used to fill from the approved plug to the surface and thoroughly tamped

[1] During transition until April 30, 2023 shot hole plugs may be marked by either a license or permit number.

18.4 Other

White and Green areas of the province are defined on the Environment and Parks Green/ White Area map dated September 13, 2012 Information Branch Base Map Data provided by the Government of Alberta under the Alberta Open Government License.

If shot holes and test holes are to be drilled to a depth of more than 20 m, temporary abandonment will be described and approved within the application for an approval to conduct exploration as per section 17.2.3 of this Directive.

19.0 Permanent Abandonment of Shot Holes and Test Holes and Alternate Shot Hole Abandonment

19.1 Background

Pursuant to sections 51 and 52 of the Regulation all shot holes and test holes drilled in the conduct of an approved exploration program are to be permanently abandoned immediately after detonation.

19.2 Requirements

19.2.1 Permanent Abandonment of Shot Holes and Test Holes

1. The licensee or permittee shall ensure that a **shot hole** drilled in a program of exploration to a depth of 20 metres or less is permanently abandoned:

    a. immediately after the detonation of the charge in the hole in accordance with the procedures of this Directive
    b. in a manner that is in accordance with the procedures of this Directive for each shot hole drilled in the operations, under the conditions, within the area or at or within the location in which or at or under which each shot hole was drilled, and
    c. in a manner, if any, prescribed by the AER under section 52 of the Regulation.

2. The licensee or permittee shall ensure that a **test hole** drilled in a program of exploration to a depth of 20 metres or less is permanently abandoned:

    a. within 30 days after the day on which the drilling of the hole is completed,
    b. in a manner that is in accordance with the procedures of this Directive for test holes drilled in the operations, under the conditions, within the area or at or within the location in which or at or under which the test hole was drilled, and
    c. in a manner, if any, prescribed by the AER under section 52.

3. The licensee or permittee shall ensure that, if a shot hole or test hole is drilled in a program of exploration to a **depth of more than 20 metres:**

    a. before permanently abandoning the shot hole or test hole, the AER is advised of the proposed abandonment and of the proposed procedure for abandonment and that the AER's approval for that proposed procedure for abandonment is obtained, and
    b. the procedure for abandonment of the shot hole or test hole approved by the AER under clause (a) is followed.

19.2.2 Alternative Shot Hole Abandonment

The AER may extend the time periods under section 19.2.1.1 or 19.2.1.2 and may prescribe directions, instructions, or provisions with respect to the temporary or permanent abandonment of shot holes or test holes that differ or vary from the requirements of this Directive or of the exploration approval for the program.

19.3 Procedure

19.3.1 Requirements for permanent abandonment of all shot holes:

    a. The excess wire attached to the charge must be pulled tight and cut level with the surface of the ground.
    b. The number[1] of the program licensee must be clearly marked on the approved shot hole plug.
    c. All drill cuttings not required to fill the hole must be spread evenly over the ground surrounding the hole.

[1] During transition until April 30, 2023 shot hole plugs may be marked by either a license or permit number.

19.3.2 Requirements for permanent abandonment of shot holes for specified locations are described below:

1. Requirements for permanent abandonment of shot holes drilled within the **White Area** of the province (excluding surveyed road allowances):

    a. An approved plug must be placed in the shot hole at a depth of not less than 1 m below the surface of the ground.
    b. Not less than 40 cm of an approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 60 cm of drill cuttings or other material obtained from the shot hole, and thoroughly tamped.

2. Requirements for permanent abandonment of shot holes drilled within a **surveyed road allowance**:

    a. An approved plug must be placed in the shot hole at a depth of not less than 4 m below the surface of the ground.
    b. Not less than 3.4 m of an approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 60 cm of drill cuttings or other material obtained from the shot hole, and thoroughly tamped.

3. Requirements for permanent abandonment of shot holes drilled within the **Green Area** of the province:

    a. An approved plug must be placed in the shot hole at a depth of not less than 1 m below the surface of the ground.
    b. Not less than 20 cm of approved sealing product (e.g., bentonite) must be placed on top of the approved plug, followed by not less than 80 cm of an approved sealing product, drill cuttings or other material obtained from the shot hole, and thoroughly tamped.

4. Requirements for permanent abandonment of shot holes drilled at **heli-portable sites** of a heli-portable operations:

    a. An approved plug must be placed in the shot hole at a depth of not less than 1 m below the surface of the ground.
    b. Approved sealing product, drill cuttings or other material obtained from the shot hole must be used to fill from the approved plug to the ground surface and thoroughly tamped.

Heli-portable operations and heli-portable sites are drill locations that exclude all ground access except by foot. Any form of access, including using mechanical equipment, vehicles or ATVs, is not permitted.

19.4 Other

White and Green areas of the province are defined on the Environment and Parks Green/ White Area map dated September 13, 2012 Information Branch Base Map Data provided by the Government of Alberta under the Alberta Open Government License.

If shot holes and test holes are to be drilled to a depth of more than 20 m, permanent abandonment will be described and approved within the application for an approval to conduct exploration as per section 19.2.1 of this Directive.

20.0 Clearing of Vegetation on Road Allowances

20.1 Background

In some cases, vegetation may need to be cleared on surveyed road allowances as part of conducting an approved exploration program. As per section 56 of the Regulation, the requirements and procedures for clearing of vegetation on road allowances are set forth in this Directive.

20.2 Requirements

In addition to section 56(b) and (c) of the Regulation, the procedure for clearing vegetation on a surveyed road allowance is outlined below.

20.3 Procedure

Before clearing vegetation on a surveyed road allowance as part of an approved exploration program, the licensee or permittee shall contact the Municipal District or Special Areas Board representative for the area in which the proposed vegetation clearing is to occur. The Municipal District or Special Areas Board representative may provide direction to the licensee or permittee on the method(s) to be used in clearing and disposing of vegetation.

If the Municipal District or Special Areas Board does not provide input or direction to the licensee or permittee on the method of clearing and disposing of vegetation, the licensee or permittee shall contact the AER for direction.

Section 7 of the *Forests Act*, states: “The Minister shall administer and manage timber on public land under the Minister’s administration and standing and cut timber on all road allowances.” Timber is described within the *Forests Act* as: “all trees living or dead, of any size or species and whether standing, fallen, cut or extracted."

If timber is required to be harvested on a surveyed road allowance, the licensee or permittee t must contact the Relevant Land Authority for approval prior to the harvesting and the transportation of that timber.

21.0 Cleanup of Debris, Refuse and Other Material

21.1 Background

Pursuant to and in accordance with section 57 of the Regulation, all debris, refuse and other material resulting from the conduct of an approved exploration program shall be cleaned up and disposed of in accordance with this Directive.

21.2 Requirements

The licensee or permittee is required to clean up and dispose of debris and refuse, which includes material associated with marking of access, survey materials, pipeline locates associated with the approved exploration program, cap wire and any other material that was utilized in the conduct of an approved exploration program.

21.3 Procedure

21.3.1 Under Favorable Conditions

Immediately after the completion date of an approved exploration program, all lines must be completely cleared of all survey materials, material associated with marking of access, pipeline

22.0 Request for Transfer of Program Licensee

22.1 Background

Pursuant to section 65 of the Regulation, the AER may transfer a program of exploration from one licence to another licence if both the current program licensee and the prospective program licensee agree.

22.2 Requirements

A program licensee as defined in section 1(ee) of the Regulation may apply for and receive an exploration approval from the AER as per section 23 of the Regulation.

To transfer an exploration program from one licensee to another licensee,

a. the transferor and the recipient of the transfer must agree to the transfer in writing, and
b. the recipient of the transfer must hold an active exploration licence as defined above.

The new program licensee will be responsible for all operations conducted under the program and must comply with all operating conditions and stipulations as originally outlined in the exploration program approval. This includes all liabilities associated with the exploration program (e.g., flowing and/or cratered holes etc.)

22.3 Procedure

To transfer a program(s) of exploration to another licensee, the existing program licensee must apply in writing to the AER, identifying the exploration program(s) and who the new program licensee will be.

To complete the transfer, both the new program licensee and existing program licensee must submit to the AER a signed document agreeing to the transfer.

Once the AER verifies the new program licensee holds an active licence, the applicants will be notified in writing that the transfer has been accepted and the AER records will reflect the change.

22.4 Other

There are no fees associated with the transfer of an approved exploration program from one licensee to another licensee.

Although a program of exploration can be transferred between licensee's, exploration licence identification numbers are non-transferable between companies.

To apply for an exploration licence refer to section 5.2.1 of this Directive.

23.0 Cancellation of Licence or Permit

23.1 Background

Pursuant to section 66(2) of the Regulation, if the permit of the program permittee as defined in section 1(ff) of the Regulation is cancelled or suspended after a program of exploration has commenced and before a program of exploration is completed, no person shall operate exploration equipment from the time of the cancellation or suspension of the permit until a permittee with a valid and subsisting permit has been designated as program permittee.

23.2 Requirements

If the permit issued under section 16 of the Regulation of a program permittee is cancelled or suspended, exploration equipment that is being used on that program under the authority of that program permittee must immediately cease operations. Before exploration operations can proceed, the program licensee as defined in section 1(ee) of the Regulation of an approved program has to designate to the AER, who is the “new” program permittee for that approved exploration program. The “new” program permittee must be a holder of a valid permit. The procedure to notify the AER is described in this Directive.

23.3 Procedure

The program licensee must notify the AER in writing as to who the “new” program permittee for the program of exploration will be. The new program permittee must comply with section 38 of the Regulation by submitting the commencement notification to the AER and to the holder of a forest management agreement or a timber license, as described in section 11 of this Directive.

24.0 Letter of Clearance

24.1 Background

Pursuant to section 58 of the Regulation, the program licensee as defined in section (ee) of the Regulation must make an application to the AER for a Letter of Clearance for programs of exploration conducted on public lands within 2 years of the date of program completion. Also in accordance with this section of the Regulation, the program licensee may make application to the AER for a Letter of Clearance for exploration conducted within a surveyed road allowance within two (2) years of program completion.

24.2 Requirements

24.2.1 Letter of Clearance for Programs Conducted on Public Lands

- Public lands as defined in section 1(gg) of the Regulation means land that is owned by the Crown in the Right of Alberta, but does not include mines and minerals or land within a road allowance.
- Application for Letter of Clearance for programs conducted on public lands must be made within two (2) years of the date of program completion as defined in section 1(h) of the Regulation.
- Application for letter of clearance for programs conducted on public lands must consist of a completed Geophysical Site Condition Report which can be viewed or downloaded from the AER website at aer.ca.
- If a program is conducted on public lands and a surveyed road allowance, the letter of clearance applied for will include both the public land portion as well as the surveyed road allowance.
- The completed Geophysical Site Condition Report must be emailed to exploration@aer.ca.
- The completed Geophysical Site Condition Report for Programs Conducted on Public Lands can either be signed electronically by importing a signature or be left unsigned but accompanied by a statement indicating the original report was signed and is available if required.
- If a signed copy is required, the program licensee will be contacted.

24.2.2 No Entry on Public Lands

If there was no commencement of an approved exploration program as defined in section 1(g) of the Regulation, a letter must be submitted to the AER listed below within 30 days of the expiry date of the program approval (as per section 34 of the Regulation) indicating “no entry” and the file will be closed.

24.2.3 Letter of Clearance for Program Conducted Within a Surveyed Road Allowance

After completion of an exploration program on a surveyed road allowance, a company may submit a request for a Letter of Clearance by completing the Geophysical Site Condition Report for Programs Conducted within a Surveyed Road Allowance. This program must not contain public lands, as only one letter of clearance will be issued per program.

24.2.4 Extension request for a Letter of Clearance on Public Lands

- In some cases, a geophysical program may require additional time to meet the requirements for a Letter of Clearance. Where this occurs, a written request to AER to extend the requirement of applying for a Letter of Clearance must be submitted within 2 years of the date of program completion.
- Written request for an extension to a Letter of Clearance can be emailed to exploration@aer.ca.

24.2.5 Rejection of Application

In some cases, an application for a Letter of Clearance may be rejected by the AER. Where this occurs, the applicant will be advised in writing by the AER reason(s) for rejection, which may be one or more of the following:

- The application was incomplete or contained wrong information (i.e., wrong licensee name or number).
- Application was submitted on the wrong form.

- The site did not meet the reclamation criteria.
- The application was not submitted electronically.

24.3 Procedure

When a Letter of Clearance is applied for, the program licensee must have:

1. Submitted a final plan to the AER within 90 days from the date of program completion, as per section 34 of the Regulation. The final plan is not to be submitted with the application for Letter of Clearance.
2. A fully completed Geophysical Site Condition Report for Programs Conducted on Public Lands or the Geophysical Site Condition Report for Programs Conducted within a Surveyed Road Allowance. These documents can either be signed electronically by importing a signature, or be left unsigned but accompanied by a statement saying the original report was signed and is available if required.
3. If a signed copy is required, the program licensee will be contacted.
4. The application is to be submitted by email to: exploration@aer.ca.
5. There is no fee associated with an application or letter requesting a Letter of Clearance.
6. The following items accompanying submissions are optional:
   - covering letter
   - photographs documenting reclamation of the site

24.4 Other

Only one Letter of Clearance will be issued per program.

If a program is conducted on public lands and within a surveyed road allowance, the applicant must apply for a letter of clearance using the Geophysical Site Condition Report for Programs Conducted on public land.

If a program is conducted within a surveyed road allowance and does not include public lands, a letter of clearance may be requested for that part of the program that falls within the surveyed road allowance using the Geophysical Site Condition Report for Programs Conducted within a Surveyed Road Allowance.

Directive Approval:

Original Signed by

Bev Yee, Deputy Minister
Alberta Environment and Parks

April 6, 2022

Date