

# Frequently Asked Questions

## **Directive 056—Pipelines Technical**

This document clarifies and supports some of the technical requirements related to *Directive 056: Energy Development Applications and Schedules* pipeline applications. The questions below address common omissions or errors.

### **SUBMITTING A LICENCE AMENDMENT APPLICATION TO INSTALL A FREE-STANDING LINER**

**Q1. When applying for the installation of a free-standing liner and filling out schedule 3.1, do I identify the pipe specifications of the existing pipeline or the proposed liner?**

A1. A schedule 3.1 does not provide for identifying the type of pipeline liner being installed within the pipeline. A revised application procedure has been established that will allow the capture of liner data on schedule 3.1.

When entering data on schedule 3.1 for the installation of a free-standing pipeline liner within a conduit pipe, the outside diameter, wall thickness, material, and joint code should remain that of the conduit pipe; the maximum operating pressure (MOP) should be changed to that of the liner; and the stress level should be left blank. The type and grade fields, however, can now be used to enter the type and grade of the free-standing liner. The internal protection code of “L” for free-standing liner will indicate that a liner is present, and the type and grade codes will indicate what the free-standing liner is composed of.

Note: Free-standing liner applications using materials other than those listed on Schedule 3 must be submitted as nonroutine.

When entering data on schedule 3.1 for the installation of an expanded polyethylene liner (i.e., tight liner), continue to use the material, type, grade, and stress level of the existing pipe; an internal protection code of “E” will indicate the presence of an expanded liner, as before.

The AER requires that this amended process be used for all new free-standing liner installations. It is recommended that licensees amend any existing free-standing liner licences to include updated liner data as indicated here when the opportunity arises.

When submitting an application incorporating the changes discussed above, warnings may appear related to the combination of pipe specs being entered, but this will not prevent you from completing and submitting the application. Ensure that values are accurate, as errors will not be detected.

Example of how the pipe specifications will be displayed.

3. PIPE SPECIFICATION									
Spec ID.	OD (mm)	WT (mm)	Material	Type	Grade	MOP (kPa)	Stress Lvl	Joints	IP
1	114.3	4.8	S	FPLP	301	4960		W	L

This would indicate a welded steel conduit pipe of 114.3 mm diameter, 4.8 mm wall thickness containing a free-standing liner of Flexpipe linepipe, grade 301, with an MOP of 4960 kPa.

## SURFACE PIPELINES

**Q2. Do I require a *Directive 056* pipeline licence if I am planning to construct surface pipelines associated with an approved in situ oil sands scheme contained within the area of a single blocked MSL issued by Alberta Environment and Parks (EP)?**

A2. The AER has fielded numerous queries regarding whether or not *Directive 056* licences are required for in situ oil sands surface pipelines if the subject pipelines extend beyond the lease boundary of a well pad, facility, or central processing plant but are wholly contained within a single blocked MSL area.

It appears that a blocked MSL area boundary may be misinterpreted as a single surface lease boundary. Consequently, any surface pipelines wholly contained within a blocked MSL that connect a well pad to a central processing plant might be erroneously considered exempt, as set out in *Directive 056*, section 6.5.2.

The AER would like to clarify that the facility surface lease boundary described in both *Directive 056*, section 6.5.2, and the *Pipeline Regulation*, part 1, section 3(3b), is not the same as the area boundary defining a blocked MSL issued by EP. Rather, a facility surface lease boundary is specific to the lease boundary of each well pad, facility, or central processing plant.

In situ oil sands surface pipelines wholly contained within the boundary of a well pad, facility, or central processing plant and also located within a blocked MSL would not require a *Directive 056* licence.

In situ oil sands surface pipelines that extend beyond the well pad, facility, or central processing plant lease boundary but are still within the blocked MSL area boundary require a *Directive 056* pipeline application to be submitted and approved prior to construction. In such instances, the participant involvement requirements conducted under *Directive 023: Guidelines Respecting an Application for a Commercial Crude Bitumen Recovery and Upgrading Project* would satisfy the participant involvement requirements for the *Directive 056* application.

Applicants are strongly encouraged to review existing in situ oil sands surface pipelines to ensure that they meet current *Directive 056* licensing requirements. Any applicants that identify existing

in situ oil sands surface pipelines that require licensing must submit to the Facilities Applications Audit Section an amendment application, as set out in Process Clarification for Licensing Pipeline Amendments, scenario 3.

Companies are reminded that licences for surface pipelines associated with oil sands mine approvals are not issued under *Directive 056* unless the pipelines cross a public road or watercourse.

## PERMANENT BI-DIRECTIONAL FLOW PIPELINE

**Q3. I am planning to permanently operate a pipeline bi-directionally. How should I submit the request to the AER for review?**

A3. Submit an application to AER Facilities Applications for any request for permanent bi-directional flow pipeline operations. Temporary bi-directional flow pipeline requests are currently submitted and reviewed by AER Pipeline Operations.

The AER needs to review and document all pipelines being licensed for permanent bi-directional flow before approval, whether the requests are for new pipelines or for amendments to existing lines. The applicant must file its application as nonroutine by filling out all applicable questions on schedules 3.1 and 3.2, including the following:

- 1) Schedule 3.1: Segment/Installation Identification  
Under step 4: Pipe Location and Status, enter the “From” location and “To” location according to the project’s most common direction of flow.
- 2) Schedule 3.2: Technical/Environmental Information  
Under step 2: Technical Considerations, check “No” for question 3: The pipeline meets all current applicable *CSA Z662* standards.

For amendments to existing pipelines, also include the following:

Schedule 3: Pipeline Licence Application

Under step 5: Licence Amendment Only, check “Other” and enter “Perm. Bi-directional.”

The following is the minimum supporting information applicants must submit with each application:

- A description of the proposed project and an explanation of the need for a permanent bi-directional flow pipeline.
- Confirmation that the requirements of *CSA Z662* and the *Pipeline Act* are met.
- A description of the pipeline design and configuration, its suitability for the difference in pressure gradient to operate in both directions, and the suitability of the corrosion control for the bi-directional flow operation.

- A description of the tie-in compatibility for both flow directions (e.g., maximum operating pressures, substance, etc.).
- A description of the internal and external condition of the pipeline.
- A pipeline piping & instrumentation diagram.
- A pipeline right-of-way plan.
- A pipeline base map.

## ENVIRONMENTAL REQUIREMENTS

**Q4. What are the requirements for a proposed pipeline right-of-way (ROW) that will be routed through a water body as defined by the *Water Act*, and how do I fill out *Directive 056* schedule 3.2 – step 6, question 2?**

A4. If the proposed ROW crosses a water body as defined by the *Water Act* but not by the *Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body*, the applicant, before licensing, must contact Alberta Environment and Parks (EP) to determine if *Water Act* approval is necessary. The code of practice defines a water body as having a defined bed and bank, whether or not water is continuously present, but does not include fish-bearing lakes.

If EP determines that *Water Act* approval is not required, the applicant may proceed with an application submission. If EP determines that *Water Act* approval is required, the applicant may still proceed with an application submission but must get *Water Act* approval prior to construction.

When filling out schedule 3.2 – step 6, question 2:

**YES** means that you will notify EP as required by the code of practice or, if the code of practice does not apply, that you have consulted with EP about the need for *Water Act* approval.

**N/A** means that no water body crossing as defined by the *Water Act* is involved.

## THERMAL PRODUCTION PIPELINES

**Q5. I am applying for steam distribution pipelines and production pipelines for a thermal heavy oil project. The steam distribution pipelines will carry steam at temperatures greater than 120°C from steam generators at the steam generation facility to the well pads. The production pipelines will carry some combination of oil, natural gas, water, and recovered steam back from the well pads to the central processing facility. How do I answer the questions in schedule 3.2 to apply for these pipelines?**

A5. For the purposes of making a *Directive 056* application, all of these pipelines are considered to be “steam” pipelines in the context of carrying steam or carrying water that may exist in the vapour phase. Further information on the subject is contained in part B3, “Steam Pipelines,” of

*Directive 077: Pipelines Requirements and Reference Tools.* When answering schedule 3.2, question 2(6), “The design of the steam distribution line is registered with ABSA?” the correct response will be either YES or NO, in accordance with the explanations below. “Not Applicable” is only appropriate for pipelines that operate at 120°C or less.

A **YES** response means

- the pipeline is a steam distribution pipeline at some time during its operation and carries steam at a temperature greater than 120°C and will comply with *CSA Z662*, clause 14,<sup>1</sup> or *CSA Z662*, annex I, and *ABSA IB10-006 Rev.2*;<sup>2</sup> or
- the pipeline is a production pipeline that carries some combination of oil, natural gas, water, and recovered steam, at temperatures greater than 230°C, and will comply with *CSA Z662*, clause 14,<sup>1</sup> and *ABSA IB10-006 Rev.2*<sup>2</sup> or
- the pipeline is a production pipeline that carries some combination of oil, natural gas, water, and recovered steam, at temperatures greater than 120°C up to and including 230°C, and the applicant has voluntarily chosen to design and build the pipeline in compliance with *CSA Z662*, clause 14<sup>1</sup>, and register it in compliance with *ABSA IB10-006 Rev.2*.<sup>2</sup>

In these three cases the application will follow the routine application track, unless any hydrogen sulphide is indicated upon which the application follows the Nonroutine track. (See section 6.9.11, items 36 and 37, in *Directive 056* for supporting documentation requirements for category C and D surface pipelines.)

A **YES** response also means the design **has been** registered with ABSA.

A **NO** response means

- the pipeline is a production pipeline that carries some combination of oil, natural gas, water, and recovered steam at temperatures greater than 120°C up to and including 230°C and will comply with *CSA Z662*, clause 4;<sup>3</sup> or
- the pipeline is a production pipeline that carries some combination of oil, natural gas, water, and recovered steam at temperatures greater than 120°C up to and including 230°C, and the applicant has voluntarily chosen to design and build the pipeline in compliance with *CSA Z662*, clause 14,<sup>1</sup> but not register it in compliance with *ABSA IB10-006 Rev.2*.<sup>2</sup>

<sup>1</sup> Clause 14 denotes *CSA Z662*, clause 14, as well as clauses 3–10 and 16 (if for sour service).

<sup>2</sup> *ABSA IB10-006 Rev.2*, *ABSA Information Bulletin – Directive – ABSA Requirements for Steam Pipelines* refers to *CSA Z662*, clause 14, and other *Z662* clauses 3–10 and 16 (if for sour service); or *CSA Z662*, annex I, with clause 14 and other *Z662* clauses 3–10 and 16 (if for sour service). *IB10-006 Rev.2* also includes information about registration, construction, and inspection requirements for ABSA-registered pipelines. Should this document become superseded, then successor documents must apply. Note that *ABSA IB10-006 Rev.2* and ABSA registration only apply to pipelines with design pressure greater than 103 kPa(g) and volume greater than 0.5 m<sup>3</sup>.

<sup>3</sup> Clause 4 denotes *CSA Z662*, clauses 3–10 and 16 (if for sour service).

In either of these cases the application will follow the nonroutine track and the applicant must enclose a cover letter explaining the operating conditions and whether the applicant has chosen to design the pipeline in accordance with *CSA Z662*, clause 4, or *CSA* clause 14.<sup>1</sup> If hydrogen sulphide is indicated, the application will also be nonroutine for that reason. (See section 6.9.11, items 36 and 37, in *Directive 056* for supporting documentation requirements for category C and D surface pipelines.)

A **NO** can also mean

- the requirements as set out in the first paragraph of section 6.12.3, step 2, item 6 (pages 6–64 in *Directive 056*) have not been met because of exceptional circumstances.

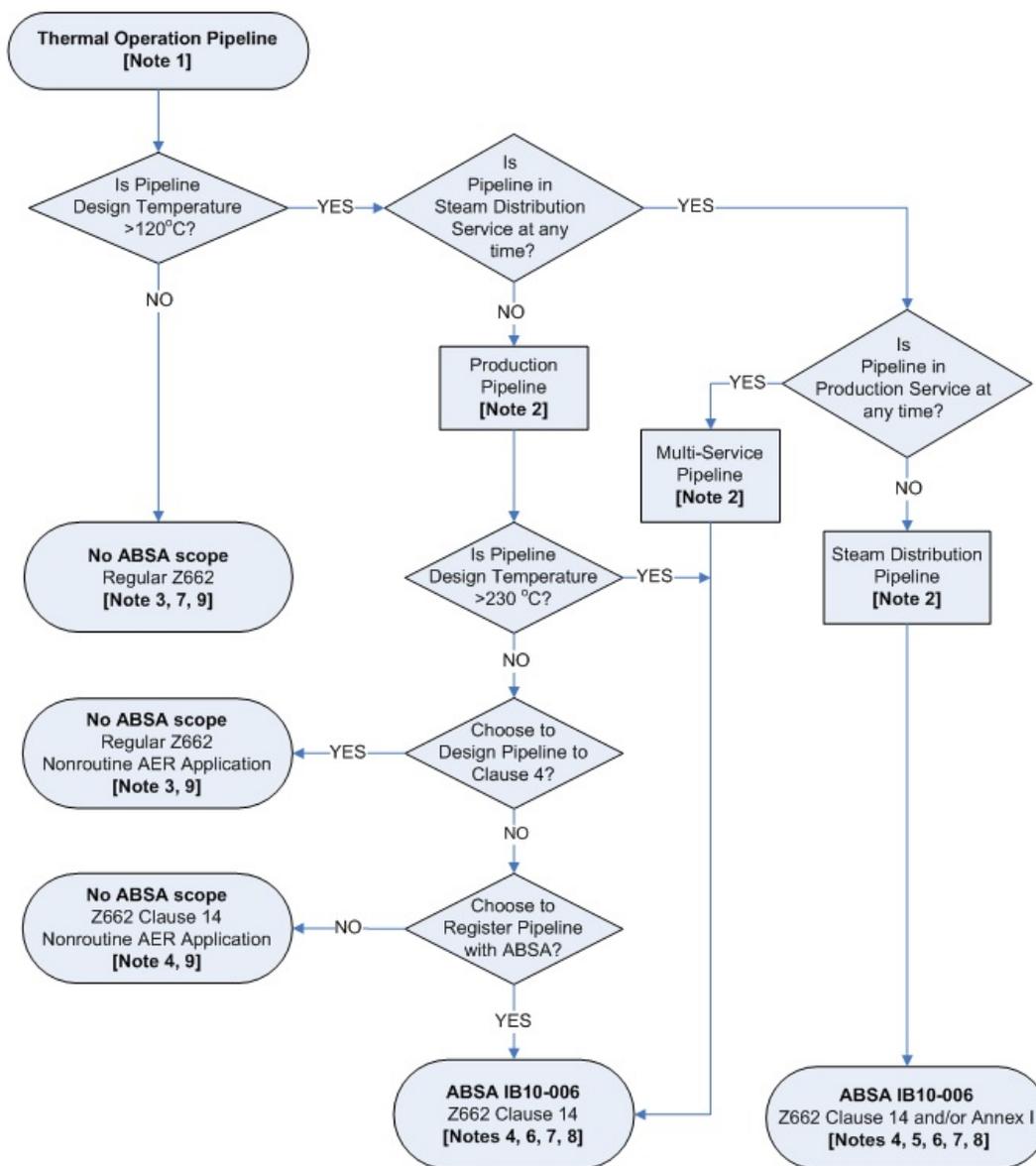
In this case the application will follow the nonroutine track and the applicant must attach a detailed explanation of why the design requirements will not be met.

An N/A response means

- the pipeline will operate at 120°C or less.

Also refer to the flowchart below.

**Criteria for CSA Z662 Design Clauses, AER Licence Application, and ABSA Requirements**



**Notes**

1. All pipelines require an AER licence, including pipelines running between distinct mineral surface leases (MSLs) that are not considered to be on the same lease boundary (e.g., pipelines between SAGD well pads and the central processing facility). Temporary pipelines (as defined in AER *Directive 077: Pipelines Requirements and Reference Tools*) or pipelines within a facility surface lease boundary do not require a licence.
2. Production pipelines gather production (may be in liquid, vapour, or multiphase form, and may include recovered steam) and are not in any other service.

Steam distribution pipelines distribute steam from a steam-generating facility to steam-injection wells or well-pad facilities, and are not in any other service.

Multiservice pipelines are pipelines that are in steam distribution service some of the time and in production service some of the time.

3. “Regular Z662” refers to conventional steel pipeline design using *CSA Z662: Oil & Gas Pipeline Systems* clauses 3–10 and clause 16 (if sour service).
4. “Z662 Clause 14” refers to *CSA Z662* clause 14 design with other *CSA Z662* clauses (3–10, 16) as applicable.
5. “Z662 Annex I” refers to *CSA Z662* annex I design with clause 14 and other *CSA Z662* clauses (3–10, 16) as applicable.
6. Alberta Boilers Safety Association (ABSA) Directive *IB10-006* requirements apply, including ABSA design registration. (Note that ABSA *IB10-006* and ABSA registration only apply to pipelines with design pressure greater than 103 kPa(g) and volume greater than 0.5 m<sup>3</sup>.)
7. AER licence application may be routine unless hydrogen sulphide is indicated in amounts indicated in *AER Directive 056* section 6.9.11; in this case a nonroutine AER licence application is required.
8. Nonroutine AER licence application is required if due to exceptional circumstances the requirements of *AER Directive 056*, section 6.12.3, step 2, item 6 (*CSA Z662* clause 14 / Annex I compliance and ABSA registration) have not been met.
9. Users must note that if a thermal operation pipeline is built that does not comply with the requirements of ABSA Directive *IB10-006*, it may be very difficult (and may not even be possible) to register the pipeline with ABSA in the future.