

Directive 011 (DRAFT)

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Liability Estimates

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1 Introduction

1.1 Purpose of This Directive

The Alberta Energy Regulator (AER) reviews, updates, and publishes liability estimates as required. This directive

- explains the purpose of liability estimates,
- outlines how liability estimates are used by the AER,
- details the requirements for liability estimates,
- provides clarity on how AER determines liability estimates, and
- describes the orphan fund levy and licences included in the levy.

1.2 AER Requirements

Requirements are mandatory. The term “must” indicates a requirement, and terms such as “should,” “recommends,” and “expects” indicate a recommended practice. For ease of reference, requirements are numbered. Information on compliance and enforcement can be found on the AER website.

Because oilfield waste management facilities are included in the scope of this directive, but are approved rather than licensed, the terms “licence” and “licensee” are to be read as also including oilfield waste management approvals and oilfield waste management approval holders. The term “facility” includes oilfield waste management facilities.

1.3 What's New in This Edition

- Section 3 has been updated for clarity and appendix 6 was added to capture needed definitions and simplify the body of the directive.
- Section 5.1.2 has been updated. Well reclamation liabilities are now broken down into additional closure activities for Phase 1 environmental site assessment (ESA), Phase 2 ESA, remediation, and reclamation. New closure costs have been added for these additional items. Appendix 5 has been added to provide a clear example of how these new reclamation costs will work.
- Section 5.2.3 has been updated, abandonment costs have been added for single-well batteries and adjustment to some multiwell batteries have been introduced.
- Section 5.3 has been updated, regional pipeline abandonment costs have been added.

2 What Is Liability

The AER uses the term “liability” in its regulatory instruments. Liability refers to the legal responsibility to safely close and clean up energy development sites. The licensee has liability obligations regardless of the estimated costs throughout the energy development life cycle. The liability estimate is the estimated cost to meet these obligations.

This directive focuses on the estimated costs to complete closure activities, such as abandonment (decommissioning), Phase 1 ESA, Phase 2 ESA (when applicable), remediation (when applicable), and reclamation. As a result, anytime liability is referenced, it should be understood as an estimate, and it is referred to as a “liability estimate.”

While the liability estimate is initially determined when the AER issues a licence, a licensee’s liability estimate can change through the energy development life cycle. It can increase as more disturbances occur, more infrastructure is added, or when contamination occurs. Liability estimates typically decrease after the completion of closure activities and are removed once a reclamation certificate or equivalent is issued. Liability estimates are transferred between licensees once the AER approves a licence transfer.

Section 8 outlines when liability estimates are used for reporting and decisions.

3 Understanding Liability Estimates

Liability estimates can be broken down in different ways, and the most common way is by “active” and “inactive” liability estimates. When determining the active and inactive liability estimates, we consider the life-cycle status of the infrastructure.

Figure 1 shows the relationship between infrastructure life-cycle status and the liability estimates.

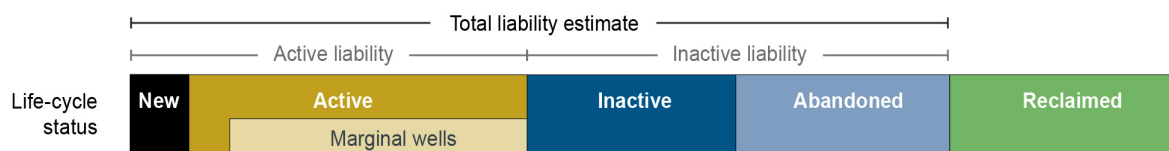


Figure 1. Types of liability

The total liability estimate is the sum of both active and inactive liability estimates for all closure activity costs to be completed.

- Active liability includes the estimated cost of completing all required closure activities for wells, facilities, and pipelines with a life-cycle status of “new” and “active.”
- Inactive liability includes the estimated cost of completing all required closure activities for wells, facilities, and pipelines with a life-cycle status of “inactive” and “abandoned.”

A marginal well is considered active liability and is defined as a well producing 1.59 cubic metres (m³) of oil equivalent per day (ten barrels of oil equivalent per day) or less.

Refer to appendix 6 for information on licence statuses, segment statuses, life-cycle statuses, and their relationships.

4 Methods for Determining Liability Estimates

The AER uses two methods for determining liability estimates:

- Regional costs are an average cost or reasonable estimation of costs for a specific group of licences (see section 5).
- Site-specific liability assessments (SSLAs) are specific costs for a specific site and are submitted by the licensee (see section 6).

The estimated regional or SSLA costs are used to determine abandonment and reclamation liability. Where an SSLA is required, the SSLA will always be used over regional costs. Appendix 1 lists the estimation methods used for different licence types.

Liability estimates for specific licences are made available to licensees through the OneStop liability assessment report. The closure costs for the abandonment and reclamation liability estimate will be identified as either regional or site specific. If there are additional or adjusted closure cost estimates, they will also be specifically identified in the report. For example, a well abandonment could include adjusted abandonment costs related to additional event sequences, groundwater protection, vent flow, and gas migration.

Liability estimates are assessed daily as new information is received and will be reflected in the OneStop liability assessment report the following day.

Refer to appendix 4 for further details on the OneStop liability assessment report.

5 Regional Costs

Regional costs use an estimate to represent a group of similar licences; some licences will inevitably have costs that are different than the estimate. The regional costs published in this directive are the liability estimates that will be used by the AER.

The AER understands that licensees can abandon or reclaim at a cost that is different than the costs identified in this directive. It is important that licensees submit all closure spending to the AER as required in [Directive 088: Licensee Life-Cycle Management](#) when that work is completed so these costs can be used to update estimates in the future. Licensee- or licence-specific costs will not be used to change the regional costs for estimated liabilities upon request. For site-specific estimated liability, refer to section 6.

The liability estimate of a well is the sum of its abandonment, Phase 1 ESA, Phase 2 ESA, remediation, and reclamation costs; the liability estimate of a facility is the sum of its abandonment and reclamation costs; and the liability estimate of a pipeline is currently only based on its abandonment costs. A well, facility, or pipeline that has a licence status of “reclamation certified” or “reclamation exempt” will not have a liability estimate assigned.

Well reclamation costs in section 5.1.2, single-well battery costs in section 5.2.3, and pipeline abandonment costs in section 5.3 are based on closure spending data reported by industry and the Orphan Well Association. These costs are updated periodically as new data becomes available. Regional cost estimates are outlined in sections 5.1 and 5.2 of this directive and will only be changed with updates to this directive or through the adjustments outlined in sections 5.1.1.1, 5.1.1.2, and 7.2. All other costs are based on the methodologies identified.

Separate maps are used for determining regional well and pipeline abandonment costs (appendix 2), and regional well and facility reclamation costs (appendix 3).

5.1 Regional Well Abandonment and Reclamation Costs

5.1.1 Well Abandonment Cost Parameters

The well abandonment liability estimate is the base abandonment cost and any abandonment cost adjustments (e.g., additional event sequences).

The base well abandonment cost considers the well’s geographic location, depth, and downhole completion scenario. The costs are outlined in table 1.

- Geographic location is based on the regional abandonment costs map in appendix 2.
- Depth is based on the deepest portion of the wellbore that remains accessible from surface and requires abandonment work (e.g., plug-back depth, or total vertical depth may be used to determine the accessible wellbore depth).
- Downhole completion scenario considers various pieces of information such as fluid type and status type (e.g., a crude oil pumping well is assessed in the tubing and rods scenario, while a gas flowing well is assessed in the tubing-only scenario). In the case of a suspended well, the last reported operational status issued will be used.

Table 1. Regional well abandonment costs (\$)**Area 1. Medicine Hat**

Depth (m)	Empty not perforated	Empty perforated	Tubing only	Tubing & rods
All	11 252	15 801	24 588	37 073

Area 2. Calgary/Edmonton

Depth (m)	Empty not perforated	Empty perforated	Tubing only	Tubing & rods
0–1199	13 300	15 956	30 665	43 314
1200–1999	13 300	32 925	45 966	59 798
2000–2499	13 300	50 492	70 707	84 610
2500+	13 300	66 164	108 817	130 881

Area 3. Drayton Valley/Grande Prairie

Depth (m)	Empty not perforated	Empty perforated	Tubing only	Tubing & rods
0–1199	13 500	23 692	44 235	50 294
1200–1999	13 500	57 997	82 457	84 113
2000–2499	13 500	69 125	94 560	109 050
2500–2999	13 500	78 995	124 206	129 626
3000+	13 500	139 342	157 690	267 915

Area 4. Lloydminster

Depth (m)	Empty not perforated	Empty perforated	Tubing only	Tubing & rods
All	12 800	36 134	41 932	42 104

Area 5. Athabasca/Peace River

Depth (m)	Empty not perforated	Empty perforated	Tubing only	Tubing & rods
0–1199	13 500	34 542	57 380	88 727
1200–1999	13 500	45 399	81 964	89 551
2000–2499	13 500	61 282	95 885	99 982
2500+	13 500	94 667	155 633	172 333

Area 6. High Level

Depth (m)	Empty not perforated	Empty perforated	Tubing only	Tubing & rods
0–1199	17 400	43 494	50 931	239 197
1200+	17 400	126 133	134 839	263 471

After determining the base well abandonment cost, the AER will apply any abandonment cost adjustments in addition to the base cost, when applicable:

- Additional event sequences (see [Directive 059: Well Drilling and Completion Data Filing Requirements](#)): A well with a single event sequence has no additional event cost. Each additional unabandoned event sequence will be assessed at 25% the base well abandonment cost, except for
 - wells in an AER-approved region that permits commingled abandonment of specific geological strata (see [Directive 020: Well Abandonment](#)) and for
 - multilateral horizontal wells where multiple event sequences are completed in the same geological stratum.

- Groundwater protection: When surface casing or primary cement does not cover the base of groundwater protection depth, identified through use of the [BGWP query tool](#), a groundwater protection estimated liability cost of \$46 288 is applied.
- Vent flow: If there is an open surface casing vent flow record (see *Directive 020* and [Directive 087: Well Integrity Management](#)), a surface casing vent flow repair cost of \$157 437 is applied.
- Gas migration: If there is an open gas migration record (see *Directives 020* and *087*), a gas migration cost of \$148 373 is applied.
- Unlicensed single-well battery: Wells with an associated unlicensed single-well battery will have an additional abandonment cost added (see section 5.2.3.1).

5.1.1.1 Adjustments to Well Scenario

Licensees may be able to adjust the well scenario by correcting assumptions made when estimating abandonment costs, which may reduce the liability estimate. For example, removal of tubing and means of artificial lift as closure work begins may move the licence to a lower cost scenario in table 1.

- 1) To change the scenario used for the well abandonment costs, a licensee must submit an “Adjustment to Well Scenario” form and follow instructions associated with it and provide the required declaration document to the AER for consideration.

The form, the declaration document, and the process for submission are on the AER’s website (Regulating Development > Rules and Directives > AER Forms > [Directive Forms](#)).

5.1.1.2 Adjustments to Groundwater Protection

If the groundwater is not protected, a groundwater protection cost is added. Licensees have the option to submit missing primary cementing information to prove the groundwater is protected.

- 2) If a licensee chooses to submit missing primary cementing information, the information must be provided to the AER using the “Groundwater Protection Missing Information” form.

Once the AER receives and reviews the information, if appropriate, the AER will remove the groundwater protection cost from the abandonment liability estimate.

5.1.2 Well Reclamation Costs

The well reclamation liability estimate is the base reclamation cost and any reclamation cost adjustments. The reclamation liability estimate includes costs for the following closure activities: Phase 1 ESA, Phase 2 ESA, remediation, and reclamation.

The base well reclamation cost considers the well's geographic location, final drill date, and well production, injection, or disposal. The base reclamation costs are outlined in table 2.

- Geographic location is based on the regional reclamation costs map in appendix 3.
- Final drill date determines if the well was drilled before or after 1996.
- Well production/injection/disposal is determined through Petrinex volumetric reporting (a well is considered produced if a well had more than one month of volumetric reporting or reports a total volume of greater than 10 m³ of hydrocarbon liquids, produced waters, or waste fluids).

Wells that do not meet the definition of “produced” are considered not produced for the purposes of determining reclamation costs.

Table 2. Regional well reclamation costs (\$)

Region	Final drill date	Phase 1 ESA	Phase 2 ESA		Remediation		Reclamation
			Not produced	Produced	Not produced	Produced	
Grasslands East	<1996	1 467	3 479	5 693	11 419	18 686	12 014
	≥1996	1 467	738	2 425	2 422	7 959	12 014
Grasslands West	<1996	1 439	3 732	6 106	14 509	23 742	17 702
	≥1996	1 439	792	2 601	3 078	10 112	17 702
Boreal	<1996	1 931	4 687	7 669	17 842	29 196	27 616
	≥1996	1 931	994	3 266	3 785	12 435	27 616
Parklands	<1996	1 731	4 438	7 262	24 885	40 721	27 940
	≥1996	1 731	941	3 093	5 279	17 344	27 940
Foothills South	<1996	2 029	6 284	10 283	32 585	53 321	36 621
	≥1996	2 029	1 333	4 380	6 912	22 711	36 621
Foothills North	<1996	1 851	7 524	12 312	30 008	49 104	27 007
	≥1996	1 851	1 596	5 244	6 365	20 915	27 007
Western Boreal	<1996	2 108	6 622	10 837	22 926	37 515	31 863
	≥1996	2 108	1 405	4 616	4 863	15 979	31 863
Alpine	<1996	2 582	5 496	8 994	77 755	127 235	54 997
	≥1996	2 582	1 166	3 831	16 493	54 193	54 997

For an inactive or abandoned well, the reclamation cost adjustments consider the completion and reporting of closure activity as well as the results of the Phase 1 and Phase 2 ESAs, using the most recent OneStop submission. The regional well reclamation cost adjustments are outlined in table 3. Table 4 lists possible adjustments to reclamation costs.

Table 3. Regional well reclamation cost adjustments (\$)

Region	Phase 2 ESA	Remediation
Grasslands East	10 543	34 604
Grasslands West	11 308	43 967
Boreal	14 202	54 066
Parklands	13 448	75 409
Foothills South	19 043	98 742
Foothills North	22 800	90 934
Western Boreal	20 068	69 472
Alpine	16 656	235 620

Table 4. Reclamation cost adjustment scenarios

Activity	Action	Adjustments
Phase 1 ESA	Submission of a Phase 1 ESA.	Phase 1 ESA cost reduces to \$0.
	Phase 1 ESA indicates that a Phase 2 ESA is not required.	Phase 2 ESA costs are reduced to \$0. Remediation costs are reduced to \$0.
	Phase 1 ESA indicates that a Phase 2 ESA is required.	Phase 2 ESA cost is adjusted to that shown in table 3. Remediation costs remain as shown in table 2.
Phase 2 ESA	Submission of a Phase 2 ESA.	Phase 2 ESA cost reduces to \$0.
	Phase 2 ESA indicates that the site meets applicable remediation guidelines.	Remediation cost reduces to \$0.
	Phase 2 ESA indicates that the site does not meet applicable remediation guidelines.	Remediation cost is adjusted to that shown in table 3.
Remediation	Submission of a Record of Site Condition (RoSC) indicating that the site meets applicable remediation guidelines.	Remediation cost reduces to \$0.
	Submission of an RoSC indicating that the site does not meet applicable remediation guidelines.	Remediation costs remain as shown in table 3.
Reclamation	Issuance of a reclamation certificate. Note: Where the AER is not the governing authority, the licensee must notify the AER of an equivalent reclamation certificate.	Reclamation cost reduces to \$0.

Refer to appendix 5 for a detailed example illustrating how reclamation liability may be adjusted.

In advance of a reclamation certificate, reclamation costs may also be adjusted through the Conditional Adjustment of Reclamation Liability (CARL) program (see section 7.2).

5.1.3 Multiwell Pad

A licensee may establish a multiwell pad for those sites on which it has more than one well on a single surface lease. The licensee may add or remove wells from the multiwell pad if it holds both the well licence and surface lease.

The reclamation liability estimates for wells on a multiwell pad are 100% of the reclamation liability estimate for the first well plus 10% of the reclamation liability estimate for each additional well on the same pad.

- 3) To reduce the reclamation liability estimate, a licensee must submit a multiwell pad notification electronically through the AER's Digital Data Submission (DDS) system through the Multi-Licence Pad (MLP) subsystem.

5.2 Regional Facility Abandonment and Reclamation Costs

5.2.1 Facility Abandonment Cost Parameters

The facility abandonment liability estimate is determined by the base regional abandonment cost of the facility. The base abandonment cost considers the [Directive 056: Energy Development Applications and Schedules](#) category of the facility and uses a well equivalency approach. For single-well batteries and specific multiwell batteries (MWB), the base abandonment costs consider other factors and cost adjustments and are outlined in section 5.2.3.

Table 5 outlines the facility well equivalent approach (well equivalent multiplied by the abandonment cost). The abandonment cost used is \$17 000.

Table 5. Facility well equivalent

Category/fluid type	Directive 056 category	Licensed design capacity*	Well equivalent	Well equivalent abandonment cost
Oil/bitumen or injection/disposal facility	030, 031, 080, 321, 331, 421, 431, 090, 091	≤50 m ³ /day	5	\$85 000
		>50 to ≤500 m ³ /day	10	\$170 000
		>500 to ≤3000 m ³ /day	20	\$340 000
		>3000 m ³ /day	40	\$680 000
Oil/bitumen satellite	070, 071, 350, 351, 450, 451	Any throughput level	2	\$34 000
Multiwell gas battery	020, 311, 411	≤900 10 ³ m ³ gas inlet/day	10	\$170 000
		>900 to ≤2500 10 ³ m ³ /day	20	\$340 000
		>2500 10 ³ m ³ /day	40	\$680 000
Compressor	040, 340, 440	Any throughput level	5	\$85 000

* Design capacity and the related well equivalent is based on the highest historical licensed design capacity associated with the facility.

5.2.2 Facility Reclamation Cost Parameters

The reclamation liability estimate uses regional cost estimates and considers the facility's geographic location (see appendix 3) as well as its well equivalent. The regional reclamation cost for a facility is calculated by multiplying the well equivalent of the facility (table 5) by the well regional reclamation cost listed below.

• Grasslands Area East	\$16 500
• Grasslands Area West	\$25 250
• Parklands Area	\$27 250
• Foothills Area	\$29 250
• Alpine Area	\$42 125
• Western Boreal Area	\$34 000
• Boreal Area	\$23 875

For example, a multiwell gas battery with a licensed design capacity of $3000 \times 10^3 \text{ m}^3/\text{day}$ (40 well equivalent) in the Parklands area (\$27 250) has an estimated liability for reclamation of \$1 090 000 (40 well equivalent $\times$ \$27 250).

5.2.3 Single-Well and Multiwell Battery Cost Parameters and Adjustments

5.2.3.1 Single-Well Battery Costs

The single-well battery (SWB) abandonment cost is the base abandonment cost and considers any adjustments. The abandonment cost for an SWB evaluates whether the SWB is sour and licensed using a facility "F" licence (*Directive 056* category type of 310, 320, 330, 410, 420, or 430) or is sweet and identified using Petrinex battery reporting on a well "W" licence. The base abandonment cost considers whether the battery is sour or sweet, the fluid type, and geographic location, using the regional abandonment costs map (appendix 2). The costs are outlined in table 6 and table 7.

Table 6. Regional sweet "W" licence SWB abandonment costs (\$)

Region	Gas/oil/bitumen
Area 1: Medicine Hat	9 953
Area 2: Calgary/Edmonton	12 375
Area 3: Drayton Valley/Grande Prairie	22 190
Area 4: Lloydminster	13 733
Area 5: Athabasca/Peace River	19 233
Area 6: High Level	38 136

Table 7. Regional sour “F” licence SWB abandonment costs (\$)

Region	Gas	Oil/bitumen
Area 1: Medicine Hat	10 977	14 964
Area 2: Calgary/Edmonton	26 022	18 118
Area 3: Drayton Valley/Grande Prairie	59 619	24 495
Area 4: Lloydminster	34 355	34 220
Area 5: Athabasca/Peace River	34 355	34 220
Area 6: High Level	53 599	53 388

A single site that has multiple “F” licensed SWBs will have a base abandonment cost assessed for each SWB. In the liability assessment report, a “W” licensed SWB will have the SWB abandonment costs identified on the well licence.

For a single site (legal subdivision [LSD]) that has both an SWB and a multiwell battery (MWB), the abandonment costs will be adjusted as outlined in figure 2.

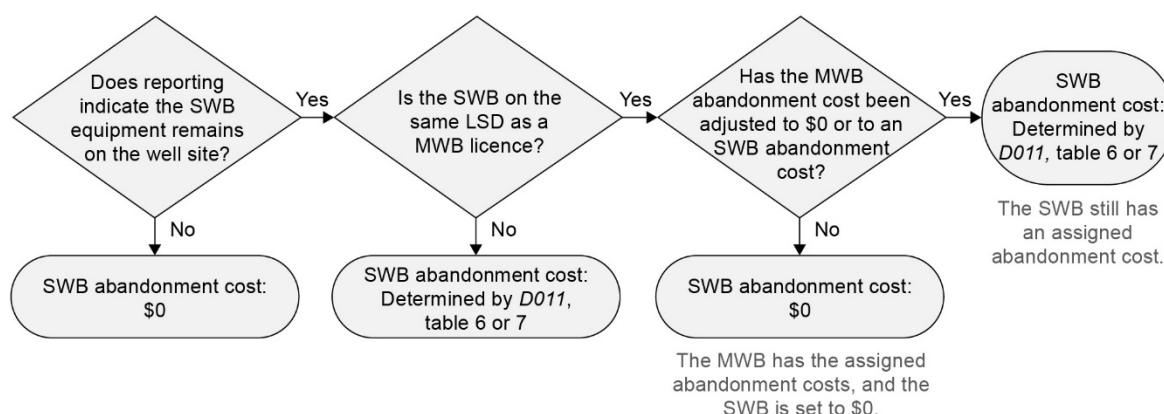
**Figure 2. Single-well battery abandonment cost decision tree**

Table 6 will be used for sweet SWBs with or without a “F” facility licence and table 7 will be used for sour SWBs with a “F” facility licence, licensed using one of the following *Directive 056* category codes: 310, 320, 330, 410, 420, or 430.

5.2.3.2 Adjustments to Multiwell Batteries

From a liability estimate perspective, some licensed MWBs operate as an SWB, which must be considered when determining abandonment and reclamation costs. The two scenarios that are included in this MWB assessment are due to licensing requirements in *Directive 056*:

- a well that has segregated production from more than one zone to a battery
- two or three SWBs operating within the same lease

Figure 3 shows how MWB abandonment and reclamation costs will be adjusted.

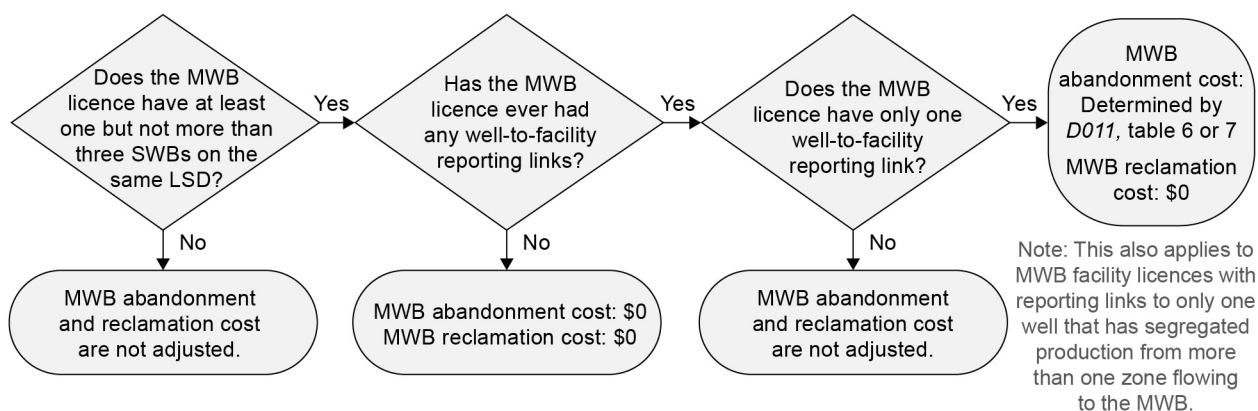


Figure 3. Multiwell abandonment and reclamation cost decision tree

In conjunction with figure 3, table 6 will be used for sweet MWBs with the following *Directive 056* category codes: 020, 030, and 031. Table 7 will be used for sour MWBs with the following *Directive 056* category codes: 311, 321, 331, 411, 421, or 431.

5.3 Regional Pipeline Estimated Liability

5.3.1 Pipeline Abandonment Costs

Pipeline abandonment liability is determined using the base pipeline abandonment costs and any adjustments. The base pipeline abandonment cost considers the pipeline segment's geographic location, length, and outside diameter. Pipeline installations are currently excluded from the calculation of pipeline abandonment liability. The costs are outlined in table 8.

- Geographic location is based on the regional abandonment costs map in appendix 2, which uses the pipeline segment's "from location."
- Segment length and outside diameter are determined by pipeline licensing information.
- For pipeline segments, the base abandonment cost considers the outside diameter and length of segment based on the regional cost tables below for each area. This applies to all pipeline segments.

All pipeline segments are assigned a fixed cost. For those that are greater than 1000 metres, we add variable costs.

For pipeline segment lengths >1000 metres but ≤5000 metres, we add the per-metre "variable 1" rate for the length of the segment beyond the first 1000 metres.

$$\text{base abandonment cost} = \text{fixed cost} + [(\text{segment length} - 1000 \text{ m}) \times \text{variable 1}]$$

For pipeline segment lengths >5000 metres, we add the per-metre "variable 1" rate for the full 4000 metres and then add the per-metre "variable 2" rate for the remaining length.

base abandonment cost

$$= \text{fixed cost} + (4000 \text{ m} \times \text{variable 1}) \\ + [(\text{segment length} - 5000 \text{ m}) \times \text{variable 2}]$$

A 14% reduction to the base cost will be applied for a pipeline segment with a status of “discontinued.”

$$\text{adjusted cost} = \text{base cost} \times (1 - 0.14)$$

Table 8. Regional pipeline abandonment costs

Area 1. Medicine Hat

Cost type	Unit	Outside diameter		
		<88.9 mm	≥88.9 to <168.3 mm	≥168.3 mm
Fixed	\$/segment	5 699	6 759	12 442
Variable 1	\$/m	1.08	1.13	1.32
Variable 2	\$/m	0.78	0.95	1.12

Area 2. Calgary/Edmonton

Cost type	Unit	Outside diameter		
		<88.9 mm	≥88.9 to <168.3 mm	≥168.3 mm
Fixed	\$/segment	8 070	9 372	17 252
Variable 1	\$/m	1.32	1.38	1.56
Variable 2	\$/m	0.86	1.05	1.24

Area 3. Drayton Valley/Grande Prairie

Cost type	Unit	Outside diameter		
		<88.9 mm	≥88.9 to <168.3 mm	≥168.3 mm
Fixed	\$/segment	10 218	13 076	25 386
Variable 1	\$/m	1.97	2.06	3.15
Variable 2	\$/m	1.28	1.55	2.08

Area 4. Lloydminster

Cost type	Unit	Outside diameter		
		<88.9 mm	≥88.9 to <168.3 mm	≥168.3 mm
Fixed	\$/segment	8 070	9 372	17 252
Variable 1	\$/m	1.32	1.38	1.56
Variable 2	\$/m	0.86	1.05	1.24

Area 5. Athabasca/Peace River

Cost type	Unit	Outside diameter		
		<88.9 mm	≥88.9 to <168.3 mm	≥168.3 mm
Fixed	\$/segment	10 218	13 076	25 386
Variable 1	\$/m	1.97	2.06	3.15
Variable 2	\$/m	1.28	1.55	2.08

Area 6. High Level

Cost type	Unit	Outside diameter		
		<88.9 mm	≥88.9 to <168.3 mm	≥168.3 mm
Fixed	\$/segment	10 218	13 076	25 386
Variable 1	\$/m	1.97	2.06	3.15
Variable 2	\$/m	1.28	1.55	2.08

The following examples illustrate how a pipeline abandonment cost is calculated:

- A pipeline segment in the High Level abandonment region has an outside diameter of 127 mm and is 500 m in length.

Base abandonment cost = \$13 076

- A pipeline segment in the High Level abandonment region has an outside diameter of 127 mm and is 2500 m in length.

Base abandonment cost = \$16 166 = \$13 076 + [(2500 – 1000) × 2.06]

- A pipeline segment in the High Level abandonment region has an outside diameter of 127 mm and is 6000 m in length.

Base abandonment cost = \$22 866 = \$13 076 + [(4000) × 2.06] + [(6000 – 5000) × 1.55]

- Using the last example above, if the segment status is discontinued, the base abandonment cost would be adjusted.

Adjusted base abandonment cost = \$19 664.76 = \$22 866 × (1 – 0.14)

Regional abandonment costs will apply unless an SSLA is required (see section 6).

5.3.2 Pipeline Reclamation Costs

The AER does not currently assign regional reclamation costs for pipelines. If a reclamation cost is assigned to a pipeline, it is through an SSLA as per section 6. The AER is assessing whether, in the future, regional reclamation costs for pipelines will be assigned similar to wells and facilities.

6 Site-Specific Liability Assessment

When an SSLA is required, the requirements in this section apply. [*Directive 001: Requirements for Site-Specific Liability Assessments*](#) provides the requirements for completing and submitting an SSLA.

6.1 General Requirements

- 4) A licensee must conduct and submit an SSLA in accordance with *Directive 001* when
 - a) required by section 6 of this directive,
 - b) the estimated liability type listed in appendix 1 for the infrastructure in question is SSLA, or
 - c) when directed by the AER.

- 5) The licensee must receive confirmation from the AER that the SSLA has been received before submitting an application, either for a new licence or to amend an existing licence to a type that requires an SSLA.

Where a licence is amended from a licence type that used a regional estimated cost to a type requiring an SSLA (see appendix 1), requirements 4 and 5 apply, and the regional estimated costs no longer apply.

- 6) Licensees must submit an updated SSLA every five years from the assessment date of the last SSLA unless otherwise authorized by the AER.
- 7) When a licensee becomes aware or ought to have become aware that there is a cumulative increase of either \$2 million or 20% of the current SSLA liability estimate, the licensee must conduct and submit an updated SSLA within 90 days.

The AER may require more frequent updates of the SSLA in situations such as the following:

- at the time of a licence transfer
- upon audit of a licence
- if site conditions warrant an update
- if an AER requirement specifies an earlier submission deadline
- if the AER determines that circumstances warrant an update

A licensee may provide the AER with an updated SSLA to reflect a change in liability estimates at any time. Some factors to consider in the evaluation of cost changes include completion of closure activities, changes in site conditions, unit rates used in estimating costs, and regulatory requirements.

6.2 SSLA for Sites with Regional Closure Costs

In certain situations, the estimated closure costs for licence types identified in appendix 1 will change from regional to SSLA. The SSLA requirement could be for estimating costs for either abandonment or reclamation or both.

- 8) When a licensee is aware or ought to be aware of site conditions that indicate that a liability estimate is significantly higher than the liability estimate determined from regional costs, the licensee must notify the AER within 30 days by email at ssla@aer.ca, providing the licence number. Situations that indicate significantly increased liability estimates include the following:
 - a) Remedial measures are anticipated to continue for ten years or more.

- b) A formal risk-management plan (as per the [Alberta Risk Management Plan Guide](#)) is required or already in place.
 - c) Nonaqueous phase liquid (NAPL) has been identified or is likely.
 - d) Any off-lease contamination has occurred.
 - e) A volume of soil has been affected, resulting in concentrations exceeding [Alberta Tier 1 Soil and Groundwater Remediation Guidelines](#) and that would result in significant remedial costs. If environmental site assessment work has been completed and submitted to the AER as per *Directive 001*, then liability may be estimated using the [Alberta Tier 2 Soil and Groundwater Remediation Guidelines](#) to determine volumes of contaminated soil that require remediation.
 - f) Any pipeline release has occurred that requires a remedial action plan under section 2.2(2) of the *Remediation Regulation*.
- 9) Where one of the situations listed in requirement 8 exists, the licensee must conduct and submit an SSLA within 90 days of notifying the AER, unless otherwise authorized by the AER.
- 10) If the AER becomes aware of situations (such as those identified in requirement 8 or otherwise) that indicate that a liability estimate is significantly higher than the liability estimate using regional costs and directs the licensee that an SSLA is required, the licensee must conduct and submit an SSLA within 90 days.
- 11) If the licensee wants to return to using regional estimated costs, the licensee must submit a request to the AER (ssla@aer.ca) with an SSLA (submitted as per *Directive 001*) that demonstrates that the liability estimate is now aligned with the regional closure costs in section 5. (This does not apply to licences that are required to provide an SSLA per appendix 1 based on the current or a historic licence type [see section 6.1].)

The AER will review the submission and determine whether the SSLA requirement can be removed.

6.3 Transfer Applications

When a licence transfer occurs, there can be a large shift in liability between the transferor and transferee, which requires that SSLAs be as up to date as possible.

- 12) If a transfer application will include a licence that requires an SSLA, the transfer application must include the SSLA. The SSLA submitted by the licensee must be accepted by the AER and be within
- a) one year from the assessment date of the last SSLA for large facilities and oilfield landfills, and

- b) three years from the assessment date of the last SSLA for all other licences that require an SSLA and be accompanied by an evaluation of cost changes that have occurred since the SSLA was completed.

13) If an SSLA requires updating as per requirement 7, an updated SSLA must be submitted at the time of transfer application.

6.4 Audits

The AER may audit or verify an SSLA at any time.

14) A licensee must submit all SSLA-related information requested by the AER within the time set by the AER.

15) If deficiencies are noted, the licensee must revise the SSLA by the date specified by the AER.

7 Changes to Liability Estimates

When a licence is issued (approved) for a new well, facility, or pipeline, the AER will determine the liability estimate based on what the AER has on record for the application. If the licensee does not proceed with the construction, refer to *Directive 056* for cancellation procedures to remove the licence and tracking of any associated liability estimates.

Liability estimates may increase or decrease during the energy development life cycle. A licence amendment will not necessarily result in a reduction in the liability estimate. The liability estimate is determined based on both current and historic use.

Closure activity costs will be reduced upon completion and notification of closure activities. For example, for a well that is not contaminated, reduction of liability occurs upon completion and notification of abandonment, Phase 1 ESA, the CARL program, and once a reclamation certificate is issued.

7.1 Abandonment Notifications

16) Licensees must report a facility abandonment within 30 days of completing the operation through the designated information submission system.

Well abandonment reporting requirements are in *Directive 020*, and pipeline abandonment reporting requirements are in the [Pipeline Rules](#).

7.2 Conditional Adjustment of Reclamation Liability Program

The AER's CARL program allows licensees to request a temporary conditional adjustment of estimated reclamation liability before a reclamation certificate is issued under the [Environmental Protection and Enhancement Act](#) (EPEA).

Pipeline licences are currently excluded from the CARL program.

Licensees with wells and facilities licensed under *Directive 056*, excluding those with an *EPEA* approval or sites with an SSLA, may request a temporary conditional adjustment of reclamation liability estimate on a per-licence basis.

17) The licensee must meet the following conditions:

- a) All required abandonment, remediation, and reclamation work for wells and facilities according to *Directive 020* and *EPEA* and associated regulations ([*Release Reporting Regulation*](#), [*Remediation Regulation*](#), and [*Conservation and Reclamation Regulation*](#)) is completed.
- b) Re-establishing vegetative cover is the only remaining closure activity to obtain a reclamation certificate.

If these conditions are met and a request has been submitted through OneStop, the associated reclamation liability estimate for the licence will be adjusted to the following amount for a period of five years or until a reclamation certificate is obtained, whichever occurs first:

- \$5000 for cultivated land
- \$9000 for all other land types

The AER may audit information provided in the licensee's CARL requests.

18) The licensee must provide information to the AER as requested to verify that they have met the conditions to receive the temporary conditional adjustment of the reclamation liability estimate.

If the licensee fails to provide satisfactory information, the AER will reinstate the reclamation liability estimate to its full amount and may take other regulatory actions as appropriate.

19) If a licensee's reclamation liability estimate is adjusted, the licensee must obtain a reclamation certificate under *EPEA* for the licence at issue within five years from the date of the adjustment.

20) If it is not possible to meet the five-year timeframe and the licensee requires an extension, a request for a single extension of two years must be submitted prior to the end of the five-year timeframe, and a detailed site assessment must be provided.

If the licensee fails to obtain a reclamation certificate under *EPEA* for the requested licence within the required timeframe (five years or as extended by the AER), the AER will reinstate the reclamation liability estimate to its full amount, and the licence will be ineligible for any future CARL adjustment.

8 Use of Liability Estimates

The AER uses the liability estimates to understand the total liability in Alberta and make certain regulatory decisions. While the AER determines the liability estimates at the time of licensing a well, facility, or pipeline, the liability estimates will be used for reporting and for decisions when the life-cycle status of the well, facility, or pipeline becomes “new.”

Liability estimates can change over time (i.e., increase or decrease). The AER will use the current liability estimate when making decisions unless otherwise stated in requirements.

The liability estimate is used by the AER to assess licensees and make certain decisions, like the following:

- To complete a holistic licensee assessment, including determining the magnitude of liability (low, medium, or high) and the liability estimate for each licensee (e.g., transfer application decisions; *Directive 088*)
- To calculate closure quotas as part of the inventory reduction program (*Directive 088*)
- To calculate security deposits ([Directive 068](#): *Security Deposits*)
- To calculate the OFL or the large facility levy (see section 9)
- To publicly report overall industry and licensee-specific performance in the annual liability management performance report and the AER website

8.1 Licensee

The AER attributes to the licensee 100% of the liability estimate of a well, facility, pipeline, or for which the licensee is named.

8.2 Working Interest Participants

A working interest participant (WIP) is responsible for its proportionate share of the cost in accordance with section 30 of the [Oil and Gas Conservation Act](#). WIP information can be updated through OneStop by the licensee.

8.3 Maintaining Information

Licence information, including licence status, are used to determine the liability estimate.

Requirements around reporting of well abandonments are in *Directive 020*. Guidelines for facility closure are contained in *Directive 001*, section 4. Requirements around reporting of pipeline abandonments are in the *Pipeline Rules*.

- 21) Licensees must maintain accurate well, facility, and pipeline licence status records with the AER.

Licensees are expected to review their liability estimates in the OneStop liability assessment report and ensure the information is accurate and up to date before any regulatory decision or administering of liability management programs involving the liability estimates.

9 Orphan Fund

The orphan fund is managed by the Alberta Oil and Gas Abandonment and Reclamation Association, known as the Orphan Well Association (OWA), a nonprofit society that is fully funded by licensees through levies administered by the AER. These levies collected are used to pay the costs of providing reasonable care and measures, as well as the costs to suspend, abandon, remediate, and reclaim a well, facility, or pipeline for licensees or WIPs that are insolvent or defunct.

A well, facility, or pipeline may be designated an orphan when the licensee becomes insolvent, defunct, or cannot meet its obligations to close its sites safely and responsibly. Well, facility, and pipeline licence types that are eligible to be closed through the orphan fund are outlined in appendix 1. If the well, facility, or pipeline meets these criteria, the AER may designate it as an orphan as authorized in section 70(2) of the *Oil and Gas Conservation Act*. When licences are designated as an orphan, this does not relieve the defunct licensee or WIPs from their regulatory obligation to pay for their share of closure costs.

The orphan fund is fully funded by licensees through two separate orphan fund levies administered by the AER. A licensee is responsible for its proportionate share of any levy associated with the orphan fund.

9.1 Orphan Fund Levy

The orphan fund levy (OFL) is administered annually, requiring each licensee to pay their proportionate share of the levy as of the date the levy was calculated. This is calculated by considering each licensee's total liability estimate to the total industry liability estimate, in accordance with formulas in Part 16.5 of the [Oil and Gas Conservation Rules \(OGCR\)](#). Appendix 1 identifies the wells, facilities, and pipelines that will have their liability estimates included in the OFL calculation. Liability estimates associated with newly licensed wells and facilities will be excluded from the OFL calculation until drilling/construction has completed or is assumed to be completed based on Petrinex reporting or 12 calendar months from licence issue date.

Liability estimates associated with an orphaned large facility are excluded from the OFL. See section 9.2 for information on the large facility levy.

The OneStop liability assessment report contains detailed, up-to-date information for licensees. The OFL for a licensee is determined based on their liability estimate on a specified date as described in section 16.530(1) of the *OGCR* (typically at the end of March annually). Before OFL invoices are

issued, licensees are expected to review their liability estimate to ensure that the information is accurate and up to date. After OFL invoices are issued, licensees can access information to support the invoice received, identifying the licences and associated liability estimate details that were used to calculate their invoice. Liability estimate issues raised after the OFL invoices have been issued may not result in invoice adjustments.

Situations may exist where the licence type is identified in appendix 1 as eligible for OWA orphaning but the specific licensee is not directly related to the upstream oil and gas sector and does not contribute to the OFL. Since these licences, held by these specific licensees, are not eligible for closure through the orphan fund by the OWA, they are not assessed for levy purposes.

9.2 Orphan Fund Levy for Large Facilities

The OFL for large facilities (defined in section 16.542 of the [OGCR](#); referred to as the large facility levy in this directive) operates similarly to the OFL administered annually. The large facility levy is only issued when needed to fund or reimburse the costs to close a large facility when there is a defaulting licensee. WIPs are responsible for their proportionate share of the large facility levy in which they hold working interest, payable to the licensee of the large facility. Liability estimates associated with newly licensed large facilities will be excluded until construction has been completed or is assumed to be completed based on Petrinex reporting or 60 calendar months from licence issue date. Appendix 1 identifies the facilities that will have their liability estimates included in the calculation of the large facility levy.

10 Availability of Information

Licensees are to use the OneStop liability assessment report to understand their own liabilities.

The AER will make available through liability management reporting the liability estimate for industry and licensees. This includes the following:

- Industry liability estimate, including a sum of multiple SSLAs or components of the total liability estimate based on active, inactive, and marginal liability.
- Industry total magnitude of estimated liability and total liability estimate based on different levels of financial distress or components of the total magnitude of estimated liability based on active, inactive, and marginal liability.
- Licensee-specific total liability estimate including site-specific liability or components of total liability estimate based on active, inactive, and marginal liability.
- Licensee-specific liability estimate including site-specific liability or components of total liability estimate based on infrastructure type of wells, facilities, and pipelines.

Additional reporting on liability estimate will continue to be developed as the AER implements the liability management framework.

The AER will hold as confidential the information submitted to or acquired by the AER from the licensee for the purpose of determining SSLAs, as per section 12.153 of the *OGCR*.

The AER will maintain a liability estimate resulting from an SSLA as confidential except in the following circumstances:

- The AER may provide to a transferee the liability estimate of the licences that are part of a transfer application.
- The AER may provide to the OWA the liability estimate of a licence that becomes part of an insolvency proceeding and is being transitioned to the OWA for closure. The AER may share the information previously submitted to or acquired by it with the OWA for the purposes of understanding the closure work required and for preparing the OWA's own site-specific cost estimates.

Inquiries regarding the requirements of this directive or any aspect of liability management should be directed by email to LiabilityManagement@acr.ca.

Appendix 1 Liability Estimate Method and Orphan Fund Applicability by Licence Type

This appendix sets out licence types that are eligible for OWA orphaning and therefore included in the calculation of the orphan fund levy or large facility levy.

If there are any conflicts between this appendix and table 1, this appendix prevails.

If there are circumstances not identified in the tables below, they will be assessed by the AER on a case-by-case basis to determine orphan fund applicability.

Note that the orphan fund levy or large facility levy invoice will not include licence types that are in receipt of a reclamation certificate or its equivalent from the appropriate regulatory authority or include licence types that have a status of “reclamation exempt,” as these are not assigned an estimated liability.

Wells

Licence type	Licence description	Liability estimate method (regional/SSLA)	Eligible for OWA orphaning? (yes/no)	Invoiced in what levy? (See section 9 for exceptions)
Production wells (oil, gas, and bitumen)	Wells that are or were used to produce oil, gas, or bitumen.	regional	yes	orphan fund levy
Injection wells	Wells that are or were used for injection and relate to the production of hydrocarbons.	regional	yes	orphan fund levy
Gas storage wells	Wells that are or were used for the purpose of storing gas.	regional	yes	orphan fund levy
Observation wells	Wells used for observation related to the production of hydrocarbons.	regional	yes	orphan fund levy
Liquefied petroleum gas (LPG) wells	Wells that are or were used to produce liquified petroleum gas.	regional	yes	orphan fund levy
Oilfield source water wells	Wells that are or were used for sourcing water for oil and gas purposes.	regional	yes	orphan fund levy
Water wells not related to upstream oil and gas activities	Water wells not related to upstream oil and gas activities, including municipal water wells, domestic and farm water wells, and water wells less than 150 metres in depth licensed in error.	regional	no	N/A
Class 1a and 1b disposal wells (related to oil and gas)	Class 1a and 1b waste disposal wells associated with the upstream oil and gas sector.	regional	yes	orphan fund levy

Licence type	Licence description	Liability estimate method (regional/SSLA)	Eligible for OWA orphaning? (yes/no)	Invoiced in what levy? (See section 9 for exceptions)
Class 1a and 1b disposal wells (unrelated to oil and gas)	Class 1a and 1b waste disposal wells not associated with the upstream oil and gas sector.	regional	no	N/A
Disposal wells (class II, III, & IV)	Class II, III, and IV as defined in Directive 051: Injection and Disposal Wells .	regional	yes	orphan fund levy
Farm gas wells drilled by industry (pre-1996)	Oil and gas wells drilled by industry and transferred as a farm gas well prior to 1996. The gas is not being sold.	regional	yes	N/A
Farm gas wells drilled by industry (after 1996)	Oil and gas wells drilled by industry and transferred as a farm gas well after 1996. Regardless of use, any such farm use oil and gas wells are subject to all regulatory requirements. The gas is not being sold.	regional	yes	orphan fund levy
Farm and domestic gas wells <i>not</i> drilled by industry	Farm and domestic gas wells <i>not</i> drilled by industry as an oil or gas well. The gas is not being sold.	regional	no	N/A
Test holes (exploration wells)	Test holes licensed under section 2.030 of the <i>OGCR</i> (exploration wells). Test wells that are drilled for cores and logs only and are not completed.	regional	no	N/A
Oil sands evaluation wells	Oil sands evaluation wells, licensed under section 2.030 of the <i>OGCR</i> . Oilsands exploration wells that are drilled for cores and logs only and not completed.	regional	no	N/A

Facilities

Licence type	Licence description	Liability estimate method (regional/SSLA)	Eligible for OWA orphaning? (yes/no)	Invoiced in what levy? (See section 9 for exceptions)
Satellites	Single or multiwell, oil and bitumen. <i>Directive 056</i> category types: 070, 071, 350, 351, 450, 451	regional	yes	orphan fund levy
Compressor stations	<i>Directive 056</i> category types: 040, 340, 440; excludes compressors that are part of an oil or gas transmission pipeline	regional	yes	orphan fund levy

Licence type	Licence description	Liability estimate method (regional/SSLA)	Eligible for OWA orphaning? (yes/no)	Invoiced in what levy? (See section 9 for exceptions)
Injection/disposal facilities	<i>Directive 056</i> category types: 090, 091 (excluding geothermal facilities)	regional	yes	orphan fund levy
Custom treating facilities	<i>Directive 056</i> category type: 080	regional	yes	orphan fund levy
Single-well facility or battery – single well (gas, oil, or bitumen)	<i>Directive 056</i> category types: 001, 310, 320, 330, 410, 420, 430 (excluding brine-hosted mineral facilities)	regional	yes	orphan fund levy
Battery – multiwell (gas, oil, or bitumen)	<i>Directive 056</i> category types: 020, 030, 031, 311, 321, 331, 411, 421, 431; bitumen multiwell batteries (331 & 431) with a licensed design capacity less than 5000 m ³ /day only; excludes brine-hosted mineral facilities.	regional	yes	orphan fund levy
Bitumen battery – multiwell (5000 m ³ /day or greater)	<i>Directive 056</i> category type: 331 or 431 (current or historic), with a licensed design capacity of 5000 m ³ /day or greater	SSLA	yes	orphan fund levy for large facility
Gas processing & fractionating plants	<i>Directive 056</i> category types: 010, 011, 300, 301, 400, 401 (current or historic)	SSLA	yes	orphan fund levy
Sulphur recovery gas plants	<i>Directive 056</i> category type: 600 (current or historic)	SSLA	yes	orphan fund levy for large facility
Straddle plants	<i>Directive 056</i> category types: 200, 302 (current or historic)	SSLA	yes	orphan fund levy for large facility
Oilfield waste management facility approvals (excluding landfills)	Oilfield waste management facilities with a waste management approval.	SSLA	yes	orphan fund levy
Oilfield waste management facility approvals – landfills	Oilfield waste landfills related to upstream oil and gas, held by waste management approval holders.	SSLA	yes	N/A (full security held)
Surface waste management facilities	These facilities are not licensed by the AER. These are approved by Alberta Environment and Protected Areas and associated with <i>Directive 051</i> class 1a disposal wells.	N/A	no	N/A

Pipelines

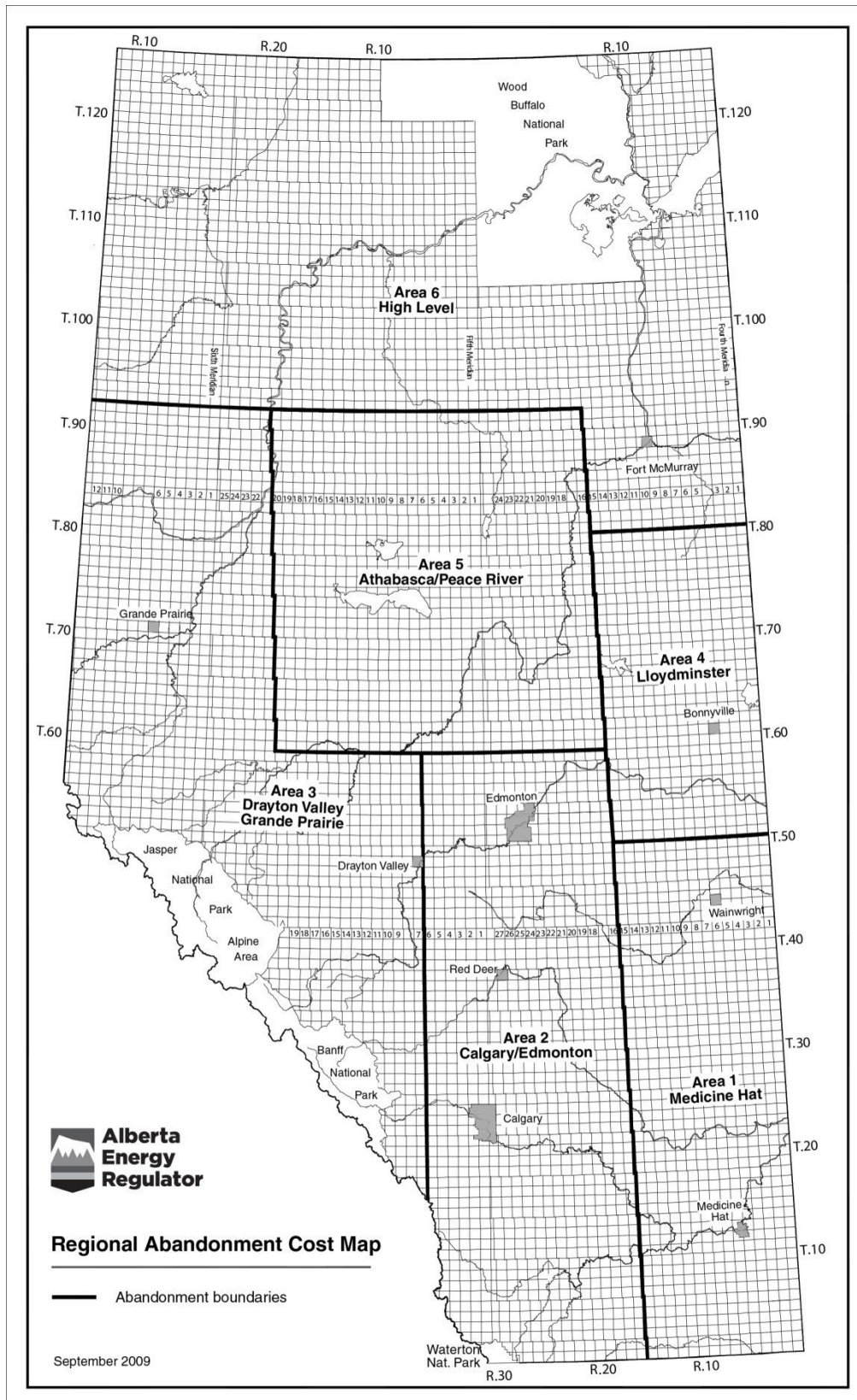
Licence type	Licence description	Liability estimate method (regional/SSLA)	Eligible for orphaning? (yes/no)	Invoiced in what levy? (See section 9 for exceptions)
Pipelines (excluding transmission pipelines)	Pipelines within Alberta boundaries for activities regulated under the <i>Oil and Gas Conservation Act (OGCA)</i> / <i>Oil and Gas Conservation Rules (OGCR)</i> and <i>Pipeline Act</i> and <i>Pipeline Rules</i> .	regional	yes	orphan fund levy
Transmission pipelines	Pipelines that cross provincial boundaries are not regulated by the AER.	N/A	no	N/A

Other

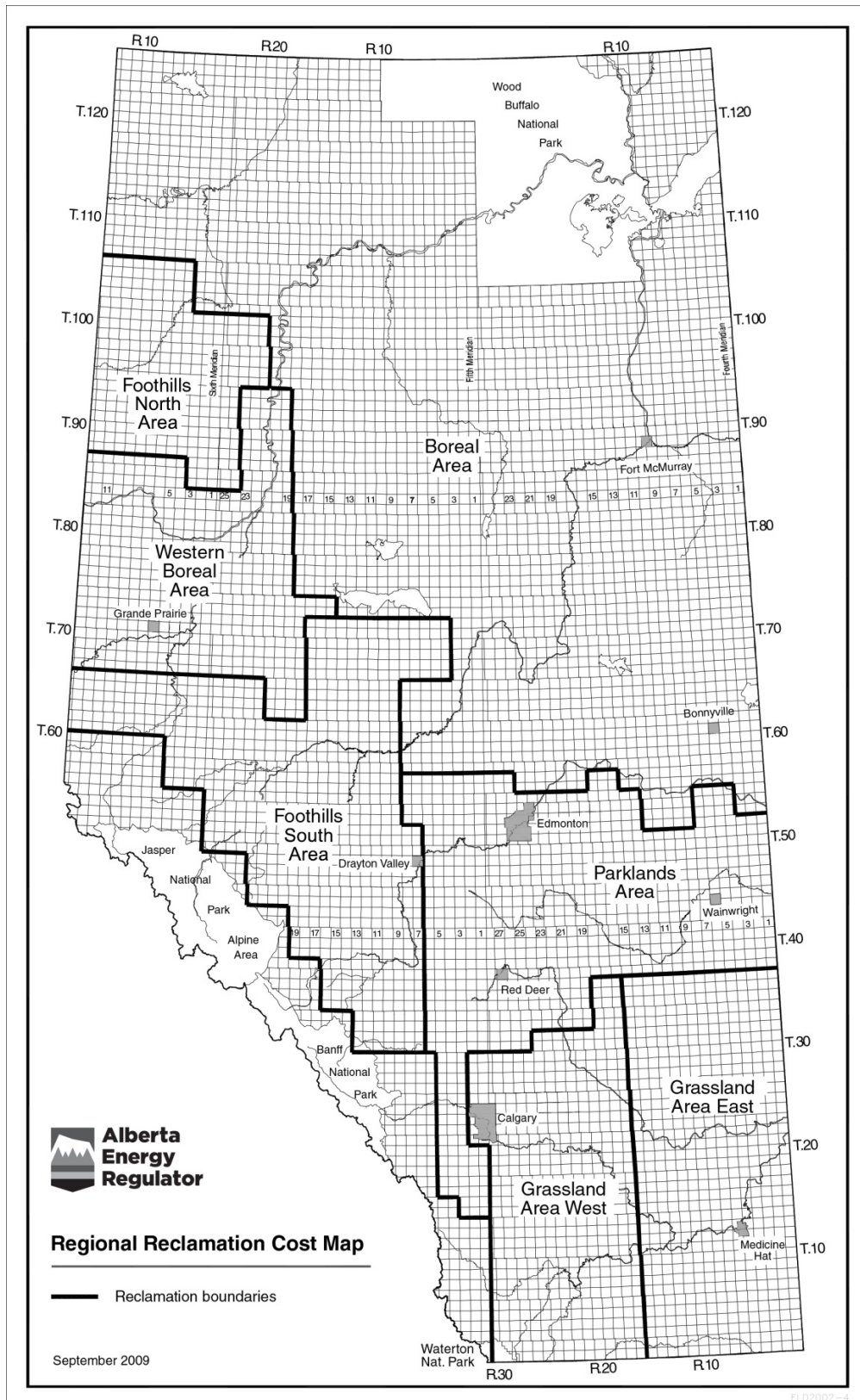
Licence type	Licence description	Liability estimate method (regional/SSLA)	Eligible for orphaning? (yes/no)	Invoiced in what levy? (See section 9 for exceptions)
Helium infrastructure	Helium production wells, facilities, and associated approvals licensed under the <i>OGCA</i> .	regional	yes	orphan fund levy
Brine infrastructure licensed under the <i>OGCA</i>	Brine wells, facilities, pipelines, and associated approvals licensed under the <i>OGCA</i> .	regional/SSLA	yes	orphan fund levy
Brine-hosted mineral infrastructure	Brine-hosted mineral production wells, facilities, pipelines, and any associated approvals licensed under the <i>Mineral Resource Development Act</i> . These include brine-hosted licences that were previously licensed under the <i>OGCA</i> .	see Directive 090	no	N/A
Carbon sequestration infrastructure	Carbon Sequestration wells, facilities, pipelines, and associated approvals subject to the <i>Mines and Minerals Act</i> . Licensed under an agreement pursuant to section 9(a)(iii) of the <i>Mines and Minerals Act</i> .	N/A	no	N/A
Geothermal infrastructure (excluding coproduction of hydrocarbons)	Geothermal wells, facilities, pipelines, and associated approvals for sole purpose of geothermal production, licensed under <i>Geothermal Resource Development Act</i> .	see Directive 089	no	N/A
Geothermal infrastructure, with coproduction of hydrocarbons	Geothermal wells, facilities, pipelines, and associated approvals with coproduction of hydrocarbons and licensed under the <i>OGCA</i> .	regional/SSLA	yes	orphan fund levy

Licence type	Licence description	Liability estimate method (regional/SSLA)	Eligible for orphaning? (yes/no)	Invoiced in what levy? (See section 9 for exceptions)
Sites designated as contaminated under section 125 of the <i>Environmental Protection and Enhancement Act</i> (EPEA)	Wells, facilities, and pipeline sites designated as contaminated under section 125 of <i>EPEA</i> are not supported by orphan funds, pursuant to section 68 in Part 11 of the <i>OGCA</i> .	SSLA	no	N/A
Refineries	Refineries as defined in the <i>Pipeline Act</i> . These are not regulated by the AER.	N/A	no	N/A
Oil sands mine site or processing plant	Oil sands mine site or processing plant as defined in the <i>Oil Sands Conservation Act</i> .	N/A	no	N/A
Coal mine site or processing plant	Coal mine site or processing plant as defined in the <i>Coal Conservation Act</i> .	N/A	no	N/A
Rock-hosted mineral mine site or processing plant	Rock-hosted mineral mine site or processing plant licensed under the <i>Mineral Resource Development Act</i> .	N/A	no	N/A
Dams in relation to upstream oil and gas use	Dams licensed by the AER in relation to upstream oil and gas use under the <i>Water Act</i> .	N/A	no	N/A
Waste management components	Waste infrastructure not in receipt of a separate WM approval and instead associated with well and facility licences licensed under <i>OGCA</i> (see Directive 058).	N/A	Yes	N/A

Appendix 2 Regional Abandonment Costs Map



Appendix 3 Regional Reclamation Costs Map



Appendix 4 OneStop Liability Assessment Report

Licensees can access the liability assessment report through OneStop, available on the AER website. Users must sign in using their authorized credentials and can view liability information only for licences held by their company. The report has both a simplified and a detailed view. The detailed view shows a complete breakdown of estimated liability in alignment with this directive to help licensees understand how their estimated liability is calculated. Follow these steps to access the report in OneStop:

1. Sign in to OneStop.
2. Navigate to **Reports**.
3. Filter reports by **Liability Management Framework (LMF)**.
4. Select **Liability Assessment Report**.

Users who are unable to access the report should contact Inquiries@aer.ca for assistance.

The report provides access to a range of information:

- current, historic, and program-specific estimated liability information
- inventory of licensed wells, facilities, and pipelines
- licence location information, including surface location, municipality, and well UWI
- authorization status and authorization life-cycle status
- total estimated liability for all licences held
- total estimated liability for individual licences
- detailed liability calculations and adjustments
- liability type information used in the calculation of estimated liabilities
- filtering capability to aid locating specific information

Questions related to the report and the information therein should be directed to LiabilityManagement@aer.ca.

Appendix 5 Well Reclamation Liability Adjustment Example

Reclamation liability adjustments are illustrated in the example below. The example describes how reclamation costs change through closure milestone submissions.

For a well in the Grasslands East region, final drill date of March 1, 1980, and produced 100 m³ of crude oil with no ESA submissions on record, the costs are as follows:

Phase 1 ESA cost	Phase 2 ESA cost	Remediation cost	Reclamation cost	Total reclamation liability
\$1 467 (as per table 2)	\$5 693 (as per table 2)	\$18 686 (as per table 2)	\$12 014 (as per table 2)	\$37 860

When a Phase 1 ESA submission is received and identifies potential contamination, and a Phase 2 ESA is required, the costs are as follows:

Phase 1 ESA cost	Phase 2 ESA cost	Remediation cost	Reclamation cost	Total reclamation liability
\$0	\$10 543 (as per table 3)	\$18 686 (as per table 2)	\$12 014 (as per table 2)	\$41 243

When a Phase 2 ESA submission is received via OneStop and identifies that contamination is present and remediation is required, the costs are updated as follows:

Phase 1 ESA cost	Phase 2 ESA cost	Remediation cost	Reclamation cost	Total reclamation liability
\$0	\$0	\$34 604 (as per table 3)	\$12 014 (as per table 2)	\$46 618

When an RoSC submission is accepted via OneStop and identifies that the site has been fully remediated and meets all applicable guidelines, the costs are updated as follows:

Phase 1 ESA cost	Phase 2 ESA cost	Remediation cost	Reclamation cost	Total reclamation liability
\$0	\$0	\$0	\$12 014 (as per Table 2)	\$12 014

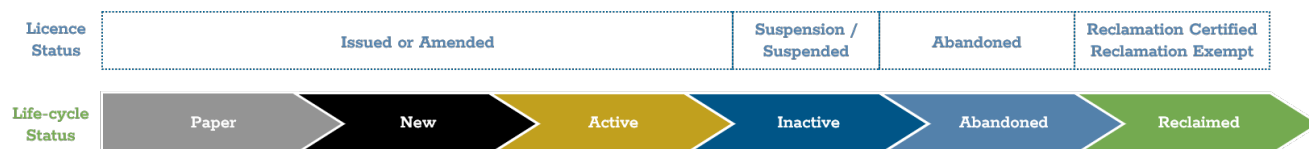
When a reclamation certificate or equivalent is issued for the site, and the licence status changes to “Rec Certified,” the costs are updated as follows:

Phase 1 ESA cost	Phase 2 ESA cost	Remediation cost	Reclamation cost	Total reclamation liability
\$0	\$0	\$0	\$0	\$0

Appendix 6 Licence and Life-Cycle Status Relationships

The terms licence status, segment status, and life-cycle status are referenced throughout the directive. The following figures and definitions describe these terms and their relationship. A single licence status or pipeline segment status may correspond to multiple life-cycle statuses. For example, a licence with a status of “issued” or “amended” may have a life-cycle status of “paper,” “new,” “active,” or “inactive” depending on the asset’s construction and operating condition.

Wells and Facilities



Pipelines



Well Licence Status

issued or amended	Indicates that there is an approved well licence from the AER.
suspended	Indicates that the licensee has completed suspension requirements as per Directive 013: Suspension Requirements for Wells and has reported through OneStop that the well has been suspended.
abandoned	Indicates that licensee has completed abandonment requirements as per Directive 020 and has reported through OneStop that the well has been abandoned.
reclamation certified	Indicates that the licence has received a reclamation certification from the AER.
reclamation exempt	Indicates that closure activities were completed prior to reclamation requirements or the site has an approved overlapping exemption as per Environment and Protected Areas document Guide to Certification for Site Reductions, Additions, Overlaps, Multi-Well Facilities, and Forced Lease Boundary Changes .

Well Life-Cycle Status

paper	Indicates that well licence is approved/issued but the well has not started construction.
new	Indicates that the well has begun construction (i.e., reported a spud date or drilling completion date).
active	Indicates that the well is reporting volumetric activity and has not met the criteria for inactive.
inactive	Indicates that the well has no volumetric activity for specified timeframe as defined in <i>Directive 013</i> . This change occurs only for wells that are in a life-cycle status of “new” or “active.”
abandoned	Indicates that the well licence status is abandoned in accordance with <i>Directive 020</i> .
reclaimed	Indicates that the well licence status is “reclamation certified” or “reclamation exempt.”

* Life-cycle status is determined using a combination of Petrinex reported volumetrics for the well and the licence status.

Facilities Licence Status

For this directive, waste management facilities are considered as part of facilities. However, certain licence statuses applicable to waste management facilities differ from those described below, and the definitions in this appendix may not fully reflect those differences.

issued or amended	Indicates that there is an approved facility licence from the AER.
suspension	Indicates that the licensee has reported through OneStop that the facility has been suspended.
suspended	Indicates oilfield waste management facility or oilfield waste management component that has undergone suspension as defined in the <i>Oil and Gas Conservation Act (OGCA)</i> .
abandoned	Indicates that the licensee has reported through OneStop that the facility has been abandoned, or an oilfield waste management facility or oilfield waste management component that has undergone abandonment as defined in the <i>OGCA</i> .

reclamation certified	Indicates that the licence has received a reclamation certification from the AER.
reclamation exempt	Indicates that closure activities were completed prior to reclamation requirements.

Facility Life-Cycle Status

paper	Indicates that facility licence is approved/issued but the facility has not started construction.
new	Indicates that the facility has begun construction within 12 months of receiving the licence but has no reported volumetric activity.
active	Indicates that the facility is linked to a Petrinex reporting ID that is reporting volumetric activity or is linked to facility that is reporting volumetric activity and has not met the criteria for “inactive.”
inactive	Indicates that the facility has no volumetric activity for 12 months once it has a life-cycle status of “new” or “active.” However, facilities with <i>EPEA</i> approvals are considered inactive after six months with no activity.
abandoned	Indicates that the facility licence status is “abandoned.”
reclaimed	Indicates that the facility licence status is “reclamation certified” or “reclamation exempt.”

*Life-cycle status is determined using a combination of Petrinex reported volumetrics, reporting IDs, and licence status.

Pipeline Segment Status

A pipeline licence may include one or more pipeline segments. Pipeline status is assigned at the segment level. The following definitions describe pipeline segments.

permitted	Indicates that there is an approved pipeline segment on a pipeline licence from the AER.
operating	The changes from “permitted” to “operating” in accordance with <i>Directive 056: Energy Development Applications and Schedules</i> .
discontinued	Indicates that the licensee has completed discontinuation requirements as per <i>Directive 056</i> and received approval as per the <i>Pipeline Rules</i> .
abandoned/removed	Indicates that the licensee has completed abandonment requirements or removed the pipeline as per <i>Directive 056</i> and received approval as per the <i>Pipeline Rules</i> .

reclamation certified	Indicates that the licence has received a reclamation certification from the AER.
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Pipeline Segment Life-Cycle Status

paper	Indicates that the pipeline segment is approved/issued but the pipeline has not started construction.
new	Indicates that the pipeline has begun construction.
active	Indicates the pipeline segment no longer meets the definition of “new” and does not meet the criteria for “inactive.”
inactive	Indicates the pipeline segment has an operating segment status that has no active well, facility, or another pipeline segment on the same LSD as its “to” or “from” end.
abandoned	Indicates that the pipeline segment status is “abandoned.”
reclaimed	Indicates that the pipeline segment status is “reclamation certified.”

*Life-cycle status is determined using a combination of Petrinex reported volumetrics and the segment status.