Liability Management Performance Report

2023

December 2024

Alberta Energy Regulator
2023 Liability Management Performance Report

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Our mandate is to provide for the efficient, safe, orderly, and environmentally responsible development of energy and mineral resources in Alberta through our regulatory activities.

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Executive Summary

In July 2020, the Government of Alberta announced a new liability management framework, and the AER released new requirements through *Directive 088* in December of 2021. This report tracks industry performance as it relates to liability management and the impact of the liability management requirements over time. The purpose of this report is to improve transparency about industry's management of conventional oil and gas liabilities and to develop performance measure baselines and ongoing assessments both of industry as a whole and individual licensees. This report will be updated annually, and additional data will be added as the liability management program expands.

- For 2023, the industry-wide closure spend requirement was set at $700 million. Together, licensees spent over $769 million, surpassing the requirement by 10%.
- 91% of licensees were compliant with their 2023 mandatory closure spend, leaving 54 noncompliant licensees with an outstanding amount of $5 million in missed closure quota (less than 1% of industry-wide closure spend requirement).
- In total, over $1 billion was spent on closure in 2023, which comprised the licensees' reported eligible spend of $769 million, closure spend funded by Alberta Government's Site Rehabilitation Program (SRP) of $174 million, and the industry-funded Orphan Well Association (OWA) spend of $149 million.
- Industry continues to work on the backlog of inactive infrastructure. In 2023, the inactive well count decreased from 83 000 to 79 000 (5% decrease).

Section I. Conventional Oil and Gas Infrastructure

The energy industry has been a main driver of Alberta's economy for many decades. Over time, this has led to an accumulation of infrastructure on the landscape–wells, facilities, and pipelines–in various stages of the life cycle–active, inactive, decommissioned, and reclaimed (see figure 1).

Ultimately, all infrastructure and energy development sites must be permanently and safely decommissioned, assessed, remediated if necessary, and reclaimed–activities otherwise known as "closure." The costs and responsibility for closure–known as "liability"–rests with industry.

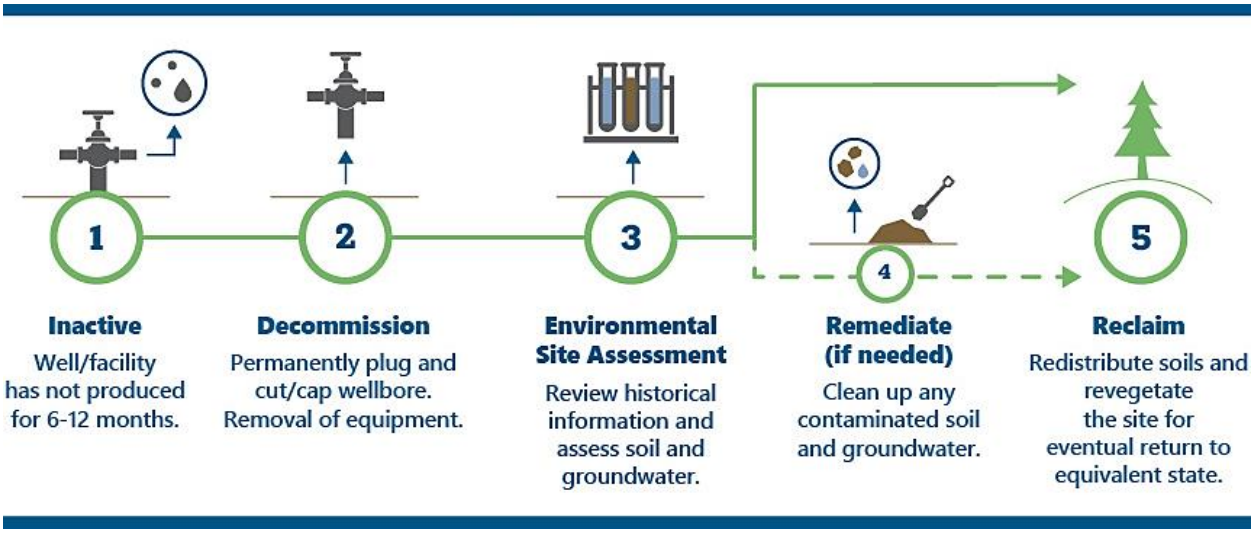

Figure 1. Stages of closure

Liability is associated with all energy infrastructure regardless of where it is in its life cycle; however, close attention is paid to the amount of liability associated with inactive infrastructure because it is no longer generating income for a licensee to pay for its closure.

Historically, closure activity has not kept pace with the growth of inactive infrastructure, even during economically prosperous times. Between 2000 and 2010, there was significant growth in active wells due to drilling activity. As the number of active wells leveled off and began to decline, the number of inactive wells in the province continued to grow at 5% annually from 2000 to 2020.

Since 2020, the inactive well trend has reversed and continues to trend downward (see figure 2). This is a positive trend, but continued effort and focus are essential to maintain this trajectory.

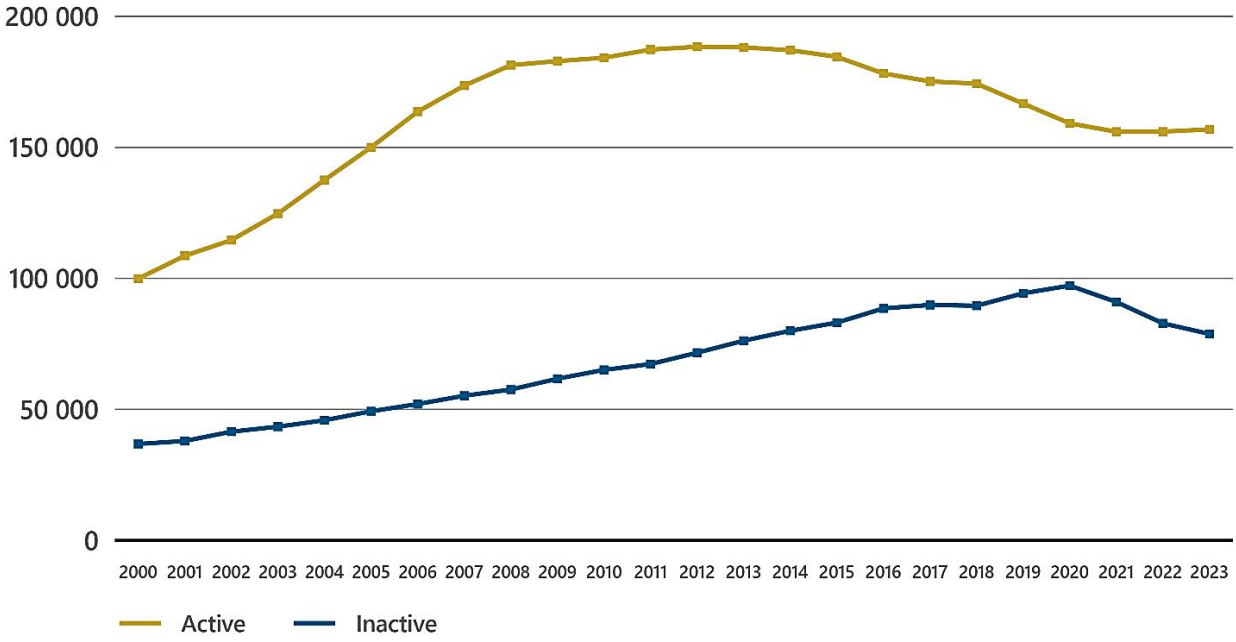

Figure 2. Number of active and inactive wells, 2000–2023

Note: Data snapshots as of December 31 each year.

Historically, licensees focused on the closure of wells that had no production reported and wells that were recently inactive. In 2014, the AER introduced the Inactive Well Compliance Program (IWCP) to address the growing number of inactive wells that were not compliant with *Directive 013* suspension requirements. Of the 31 000 noncompliant wells identified through the program, approximately 37% of them were decommissioned. This program helped shift industry's behaviour towards decommissioning wells with production (see figure 3) and wells inactive for more than one year (see figure 4).

Figure 3 shows that 68% of the wells decommissioned between 2000 and 2013 had no reported production. These wells were typically drilled and decommissioned as per requirements with lower decommissioning costs. This trend shifted in 2014 when licensees began focusing on wells with production, where the decommissioning costs are generally higher. In 2023, 87% of the wells decommissioned had historical production.

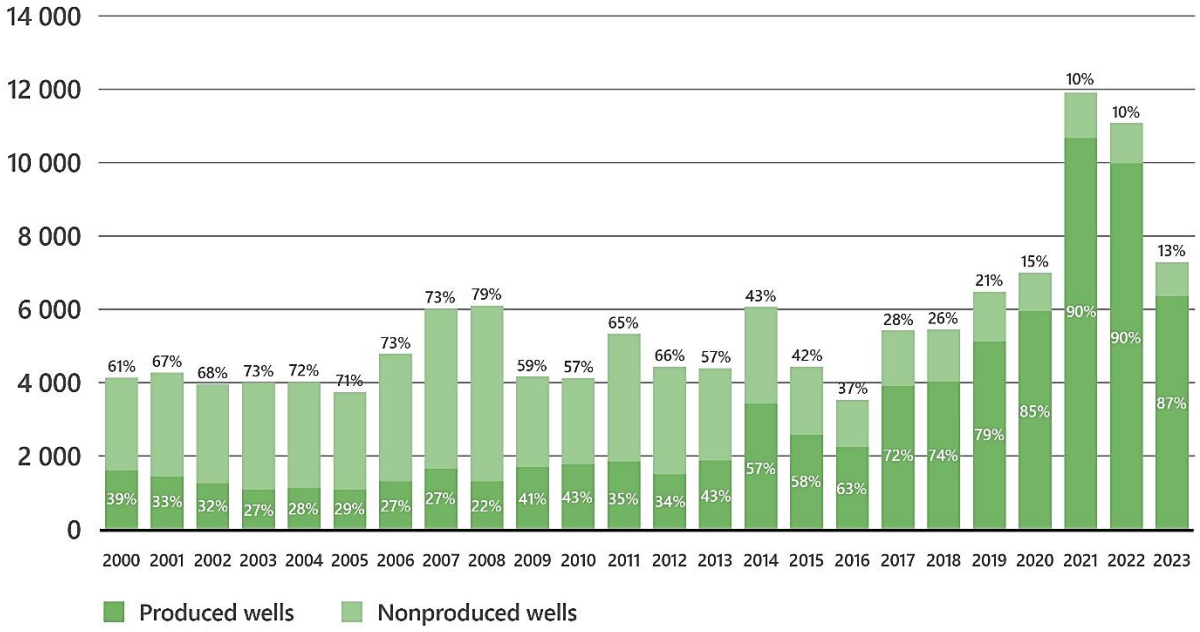

Figure 3. Decommissioned wells by production, 2000–2023

Note: Data as of October 2024.

Figure 4 shows how long the wells were inactive prior to decommissioning. Historically, licensees focused on decommissioning recently inactive wells. In alignment with the introduction of the IWCP, industry started to focus on decommissioning longer-term inactive wells. Of the wells decommissioned in 2023, 40% were inactive for ten or more years. Approximately 36 000 wells inactive for ten or more years remain.

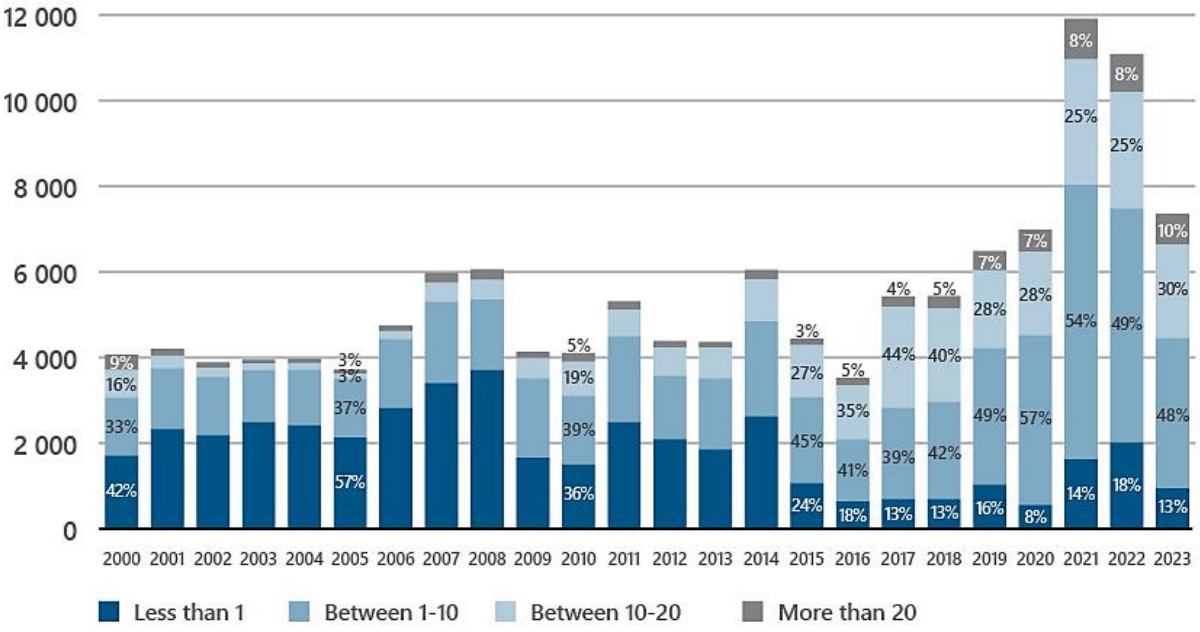

Figure 4. Decommissioned wells by years inactive, 2000–2023

Note: Data as of October 2024.

The following graphs identify the life-cycle status of wells from 2000 to 2023 (figure 5) and facilities from 2019 to 2023 (figure 6). (See *Bulletin 2023-34* for more information on how we're improving the quality of facility life-cycle status data.)

Tracking these trends over time will help monitor industry progress on closure obligations and industry's management of their liabilities; the intent is to have timely movement of inactive inventory to being decommissioned and reclamation certified.

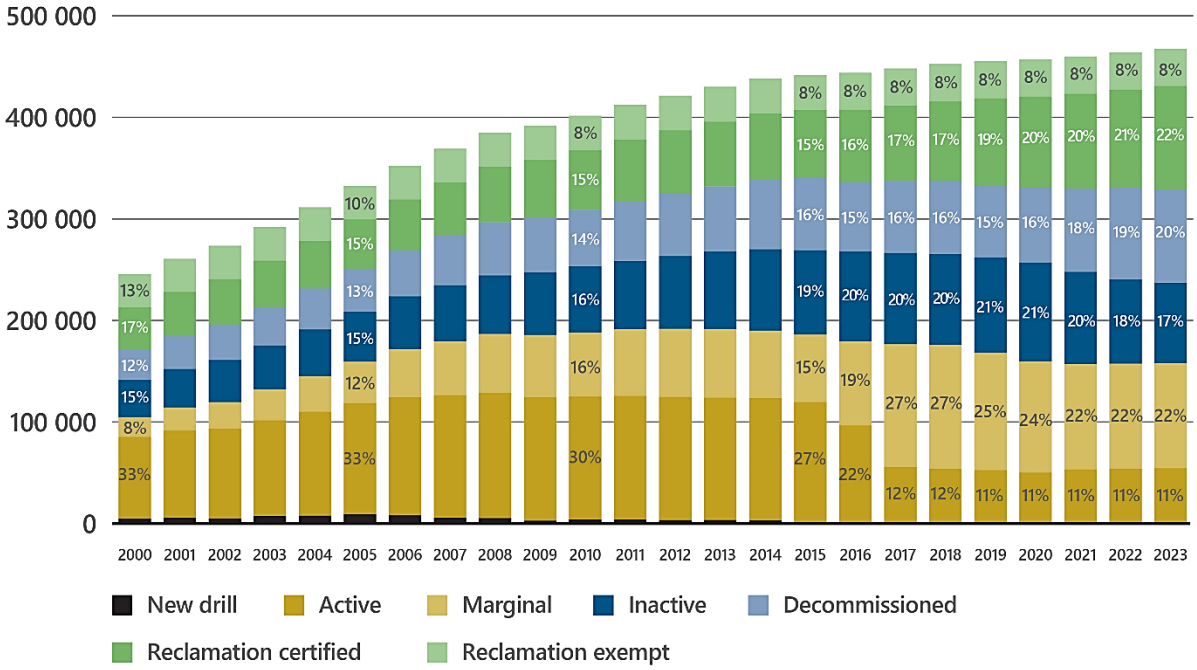

Figure 5. Number of wells by life-cycle status, 2000–2023

Note: Data as of December 31 of each year.

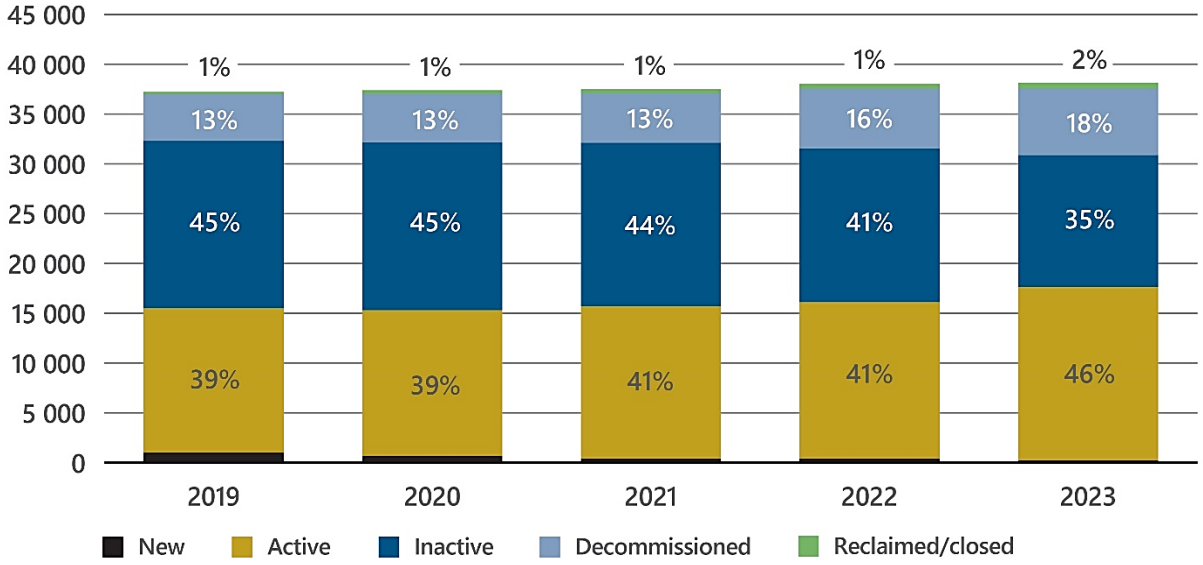

Figure 6. Number of facilities by life-cycle status, 2019–2023

Note: Data as of December 31 of each year. The decrease in inactive facilities in 2023 was a result of *Bulletin 2023-34*.

This is the first time we are introducing information on pipelines regulated by the AER into this report. For more information on what pipelines we regulate, see our pipelines topic on our website.

A pipeline licence is approved ("permitted" status) and then moves into operations ("operating" status). A pipeline status of "discontinued" corresponds to an inactive well. When the pipeline status is "abandoned," it has met the criteria for abandonment. Licensees apply to change the pipeline licence status as per the *Pipeline Rules*, and the AER then approves or denies the application based on relevant information. Figure 7 shows the total length of "operating" pipelines decreasing since 2016. In 2023, 60% of the pipeline length is "operating," while 39% of the pipeline length is "discontinued" or "abandoned."

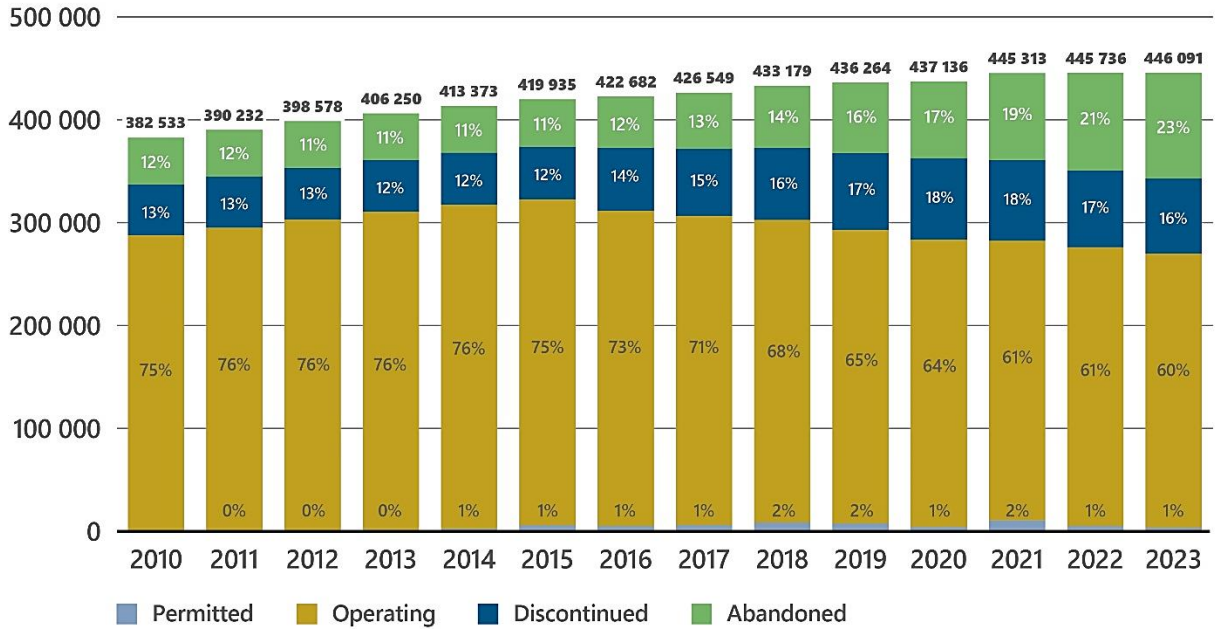

Figure 7. Combined pipeline length in kilometres by licence status

Note: Data as of December 31 of each year.

Section II. Estimated Liability and Licensee Capability

Liability is estimated using calculations outlined in *Directive 011* and through site-specific liability assessments (SSLAs). The estimated liability has changed over the last 20 years due to both changing operational practices and varying costs for closure work. *Directive 011* determines estimated liability for a licence based on regional costs for different scenarios and infrastructure characteristics. Site-specific estimated liabilities are determined through SSLAs.

Total estimated liability includes decommissioning and reclamation liabilities associated with wells and facilities and for sites with site-specific liability assessments. Figure 8 provides the total, active, and inactive estimated liability. These estimates will continue to improve over time as more closure spend data is collected and analyzed. *Directive 011* was updated with well decommissioning costs, increasing the total liability to approximately $36 billion as of June 2024. See the *Directive 011* webpage for more information.

Historically, "deemed" liability was the liability used for the liability management rating (LMR), and the values in figure 8 correspond with previous LMR reports. In 2020, with the introduction of the new liability management framework, the AER began reviewing and removing historical overrides to calculate the estimated liability. The increased estimated liability in 2021 was due to the inclusion of sweet multiwell batteries that had not been included previously.

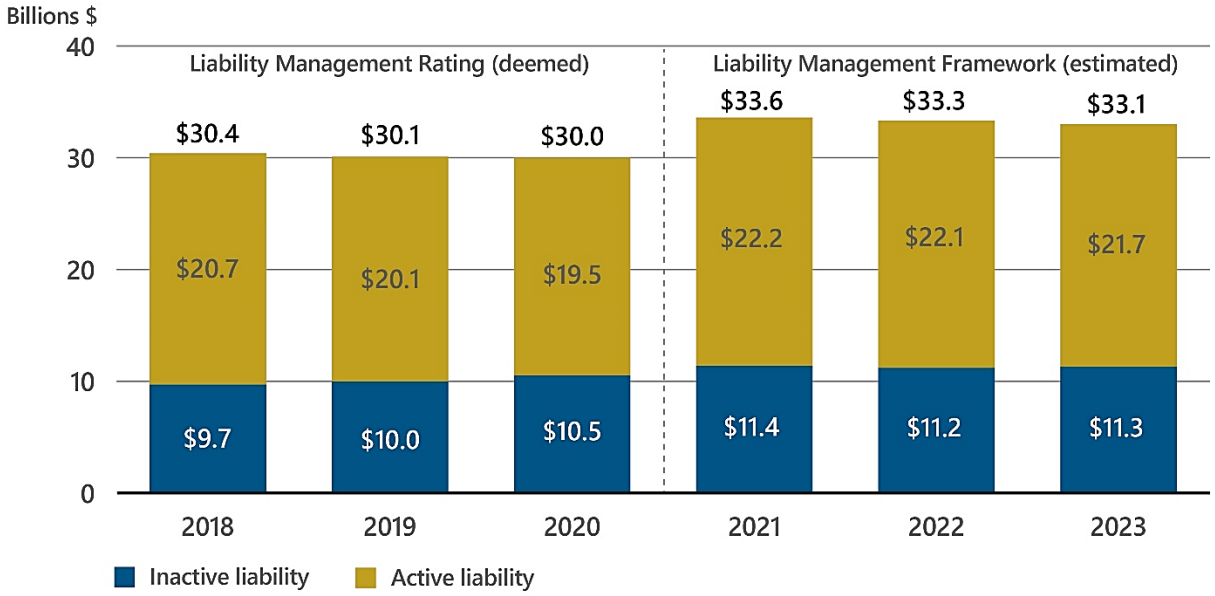

Figure 8. Estimated liability, 2018–2023

Note: This figure has been adjusted to reflect the liability at the end of each calendar year to be consistent with how the data is reflected in this report, whereas the previous report had shown the liability at the beginning of each calendar year.

It's important to understand that the actual cost to complete closure will not always match the estimate. The actual amount spent is reported by licensees as closure spend, and those values are used to inform the regional costs listed in *Directive 011*, which are updated from time to time (see *Bulletin 2024-16* with recent updates to *Directive 011* liabilities). When a closure milestone is reached, the estimated liability is reduced by the values in the most recent edition of *Directive 011* or the associated SSLA, not the amount actually spent.

Licensee Capability

While understanding liability is important, it is also essential to understand the ability of companies to meet their regulatory and liability obligations across the life cycle of energy development.

To do this, we use a holistic licensee assessment (see *Directive 088* and *Manual 023* for details). Two important factors this assessment considers are a licensee's magnitude of liability and their level of financial distress.

Figure 9 outlines the number of licensees in each category based on the magnitude of the total estimated liability and their level of financial distress. It highlights the percentage of total liability held by each of the groups. Most of the estimated liability (84%) is held by licensees in low financial distress, whereas 7% of the total liability is held by licensees in high financial distress.

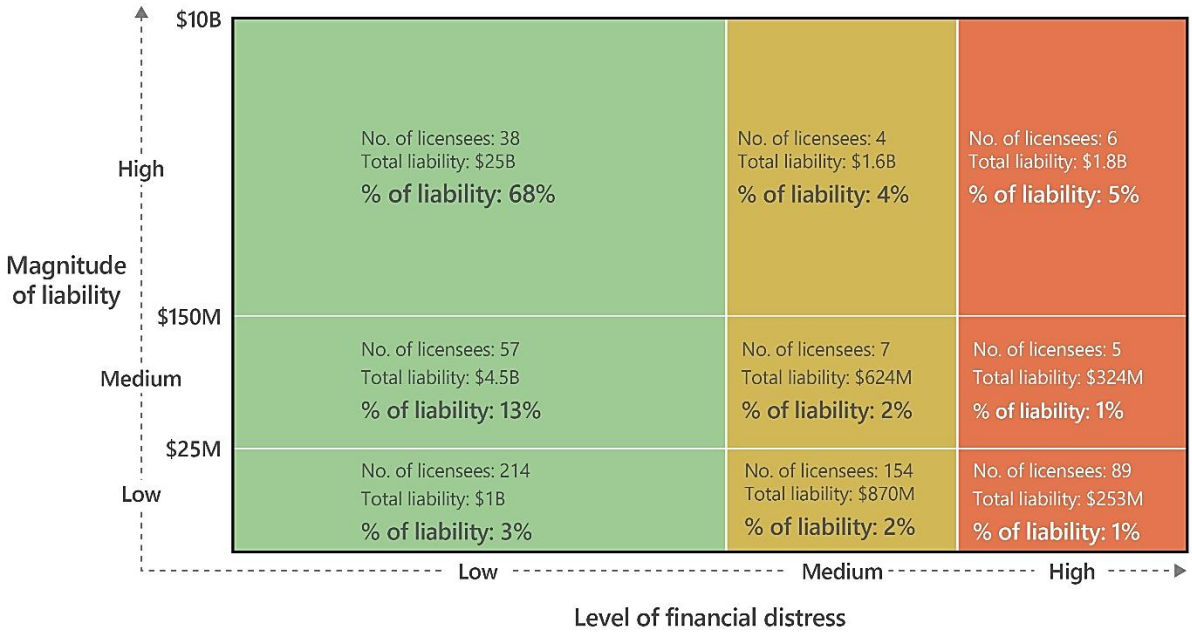

Figure 9. Licensee liability by magnitude of liability and level of financial distress

Notes:

1. A licensee's magnitude of estimated liability is categorized as high ($150+ million), medium ($25-150 million), and low (under $25 million). Financial distress is calculated using financial information required under *Directive 067* (see definitions in *Manual 023*).
2. The AER is providing financial and liability information while maintaining confidentiality requirements.
3. Percentages may not add to 100 due to rounding.
4. Data as of October 2024.

Transfers

Holistic licensee assessments are now used in various regulatory processes. Specifically, when licensees want to buy or sell assets, they must submit a transfer application to the AER. When transfers are reviewed by the AER, the licensees involved are assessed using numerous factors, including their level of financial distress and the amount of inactive liability that is included in the transfer (see *Manual 023* for more information). Licensees presenting higher levels of risk are subject to higher levels of scrutiny, which may result in the collection of security. Table 1 summarizes transfer applications based on licensee capability.

Table 1. Transfer analysis by licensee capability, 2022 and 2023

Assets Transferred To	Well Count	Facility Count	Pipeline Count	Total Liability (millions)	Inactive Liability (millions)	Security Collected (millions)	Security Collected as % of Inactive Liability
Licensee (more capability)	6412	727	963	$492.7	$192.5	$0.4	0%
Licensee (less capability)	1661	311	441	$211.8	$81.8	$18.8	23%
New licensees	10 733	1065	1627	$906.2	$270.3	$25.2	9%

Note: Licensee capability is assessed through the holistic licensee assessment, including their level of financial distress. New licensees are defined as having a new business associate (BA) code registered with the AER within the last 3 years.

Most transfers are from existing licensees to new licensees (since 2022, there has been $906 million in estimated liability transferred to new licensees). As a result of these transfers, 9% of the inactive liability value was collected via security.

The second most likely transfer situation is when assets are going to a more capable licensees ($492 million in estimated liability since 2022). The licensees receiving these assets are deemed more financially capable, and therefore less security is requested on these transfers ($426 000 in security collected on these transfers since 2022).

When licensees are transferring assets to less capable companies ($200 million in estimated liability since 2022), these transfers collected 23% of the inactive liability ($18.8 million in security collected on these transfers).

Section III. Orphan Fund Levy

The orphan fund was established in the 1990s, and since 2002, the Orphan Well Association (OWA) manages the closure of orphaned oil and gas wells, pipelines, and facilities, including the reclamation of associated sites, across Alberta. Every year, the AER issues an orphan fund levy to licensees to ensure that the OWA has an operating budget (see figure 10).

The levy is used in part to pay for project closure costs when an energy company cannot meet its obligations to close its energy project safely and responsibly (see our website for further details). With the number of orphaned infrastructure and sites, the orphan fund levy has grown to accommodate larger budgets for completing closure work and administrative and operational costs. In 2023, the levy was increased to $135 million, almost doubling the previous year's budget.

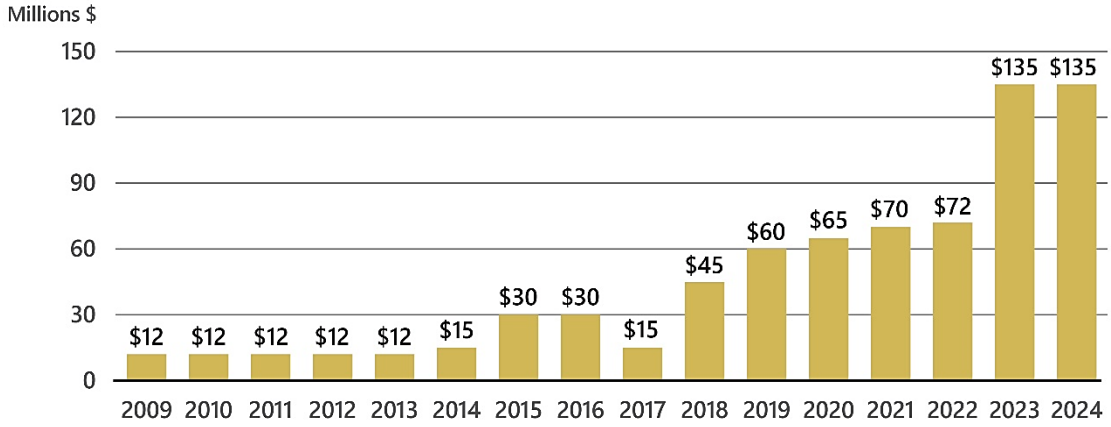

Figure 10. Orphan fund levy by year, 2009–2024

Figure 11 shows the OWA closure spend and milestones achieved. The OWA spent $185 million on closure in 2022 and decommissioned 1412 licences and reclaimed 361 licences. In 2023, the OWA spent $149 million on closure resulting in 828 decommissioned licences and 503 reclaimed licences.

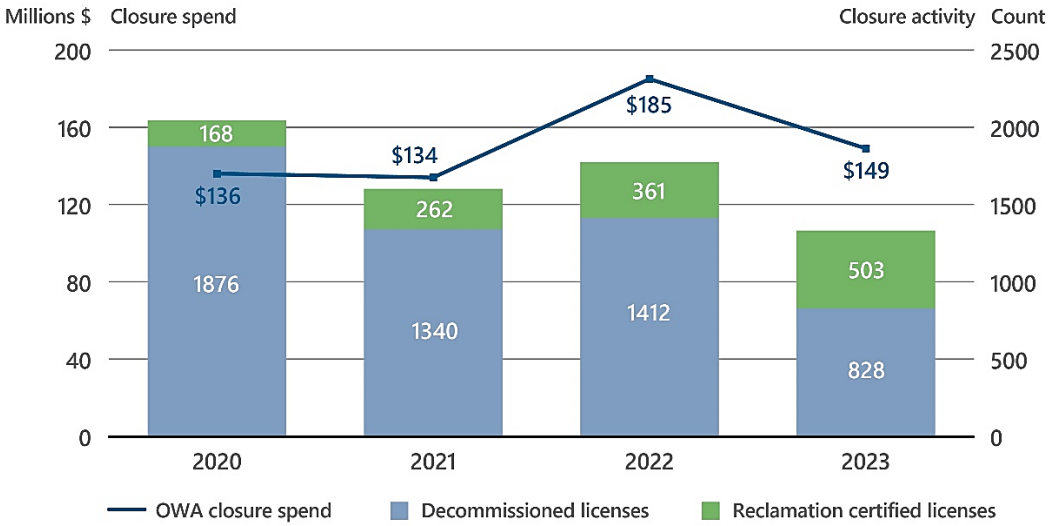

Figure 11. Annual OWA closure spend and closure milestones achieved, 2020–2023

Source: Orphan Well Association (OWA). The OWA reports data in its annual report based on the fiscal year, whereas the AER reports on a calendar year.

To uphold the current pace of closure activity, the 2024 orphan fund levy was maintained at $135 million. While the OWA continues to decommission many of the wells in its inventory, figure 12 shows that the number of wells remaining to be reclaimed (blue line) has increased. Reclamation timelines are significantly longer than decommissioning timelines and can range from 5 to 15 years depending on the area of the province, vegetation requirements, and the presence of any contamination.

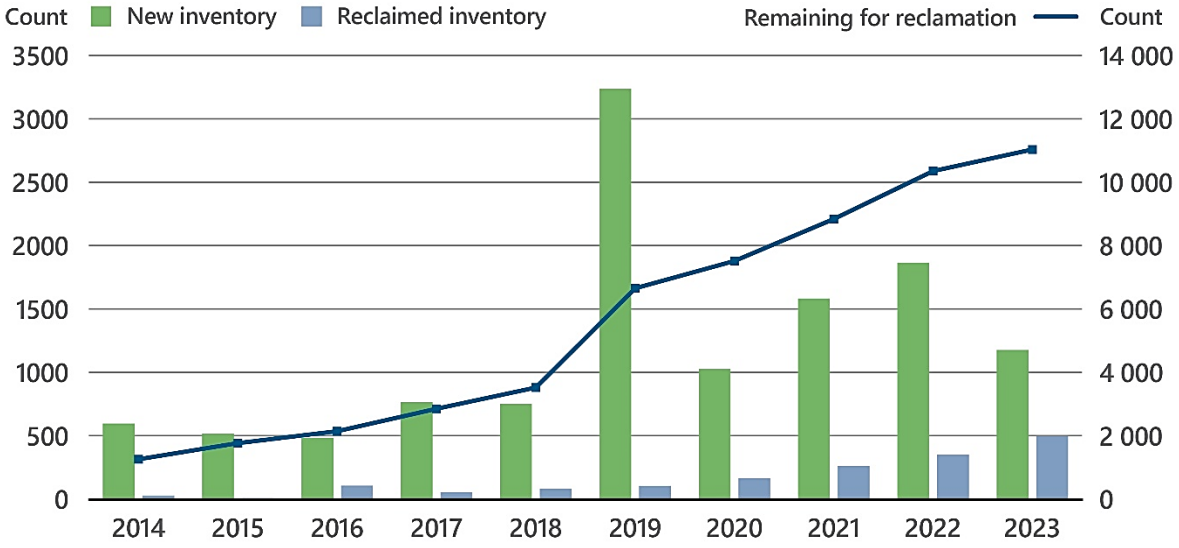

Figure 12. OWA closure inventory by year, 2014–2023

Note: Data as of August 2024. The large increase in orphaned assets in 2019 is due to the Redwater decision, where receivers were provided additional direction and discharged many of their licences into the OWA (e.g., Lexin). 2020–2022 included larger insolvencies such as Trident and Sequoia. The OWA tracks reclamation work by lease, whereas the AER tracks reclamation by licence. About half of the OWA leases awaiting reclamation are in the revegetation stage.

The OWA publishes annual reports summarizing their fiscal-year performance. Figure 13 shows their estimate of the remaining closure costs at the end of each fiscal year.

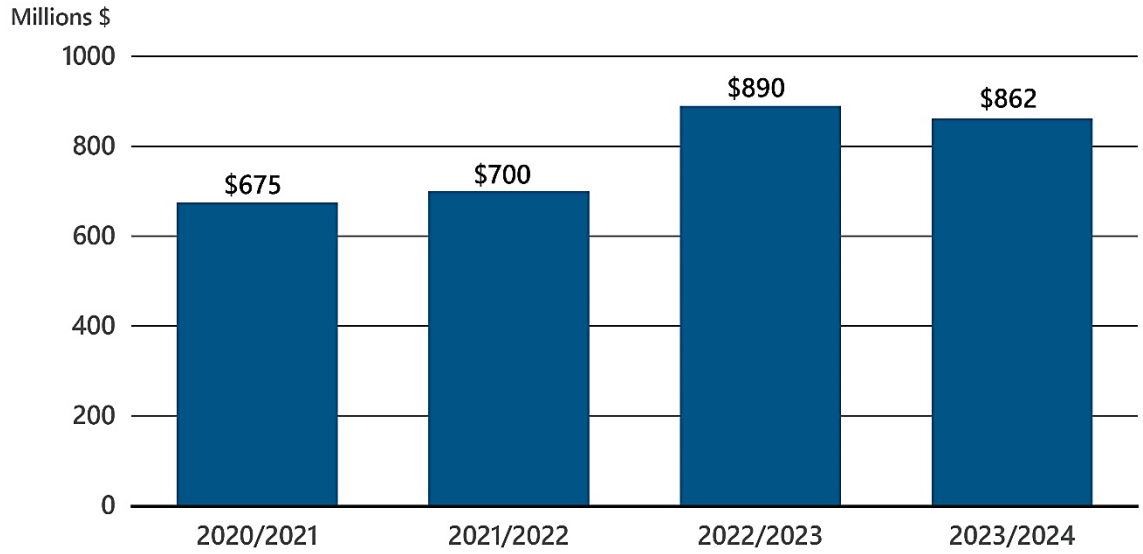

Figure 13. OWA's estimate of remaining closure costs, 2020–2024

Note: This data retrieved from OWA's annual reports and is based on a fiscal year (April 1 to March 31).

Section IV. Inventory Reduction Program

The Inventory Reduction Program (IRP) focuses on reducing liability by bringing sites to full closure and increasing the amount of land being returned to equivalent capabilities. The program has two components: closure nomination and closure quotas.

Closure Nomination

Eligible requesters can nominate certain sites for closure. To be eligible for the program, the well or facility must be in an inactive or decommissioned state for five or more years. Some sites that met these criteria that were not fully closed from the Government of Alberta's Site Rehabilitation Program (SRP) were transferred to closure nomination.

Almost 1300 sites have been nominated since the closure nomination program was launched in April 2023. These sites have approximately $57 million in liability. To date, licensees have reported over $12 million in closure spend on 287 sites. Nominated sites have up to three years to complete decommissioning work.

Closure Quotas

The AER sets a minimum amount of money that industry must spend on closure activities each year to ensure that licensees are focusing on their closure obligations. The industry-wide closure spend requirement is then divided among licensees (their mandatory closure spend). When closure work (decommissioning, environmental site assessment, remediation, and reclamation) is completed, industry reports the costs to the AER. This information is used to assess whether licensees meet the minimum requirement, assess compliance actions (if necessary), and to support updates to estimated liability values. In 2023, the industry-wide closure spend requirement was set at $700 million.

Prior to closure quotas, the AER collected industry closure spend data through the voluntary area-based closure (ABC) program from 2019 through 2021. See below for links to the previous highlight reports.

- ABC Program Highlights
- 2022 Closure Quota Highlights

Closure Activity Summary 2019–2023

Figures 14 and 15 show decommissioning completed by industry and the Orphan Well Association (OWA). Between 2019 and 2021, closure work was primarily driven by the licensees participating in the voluntary ABC program, whereas activity since 2022 is related to closure quotas.

Funding from the SRP began in 2020 and continued into 2023 (see figure 16). The majority of SRP funding (75%) was provided in 2021 to 2022. Figure 14 shows that the most wells decommissioned by

industry was during this two-year period, with a decrease in 2023. The reduction in the 2023 total spending led to fewer decommissioned wells. However, industry focused more on higher-liability infrastructure as more was spent on remediation activities in 2023 (see figure 17). The OWA also decommissioned fewer wells in 2023 but saw increases in their reclamation activity (see figure 15).

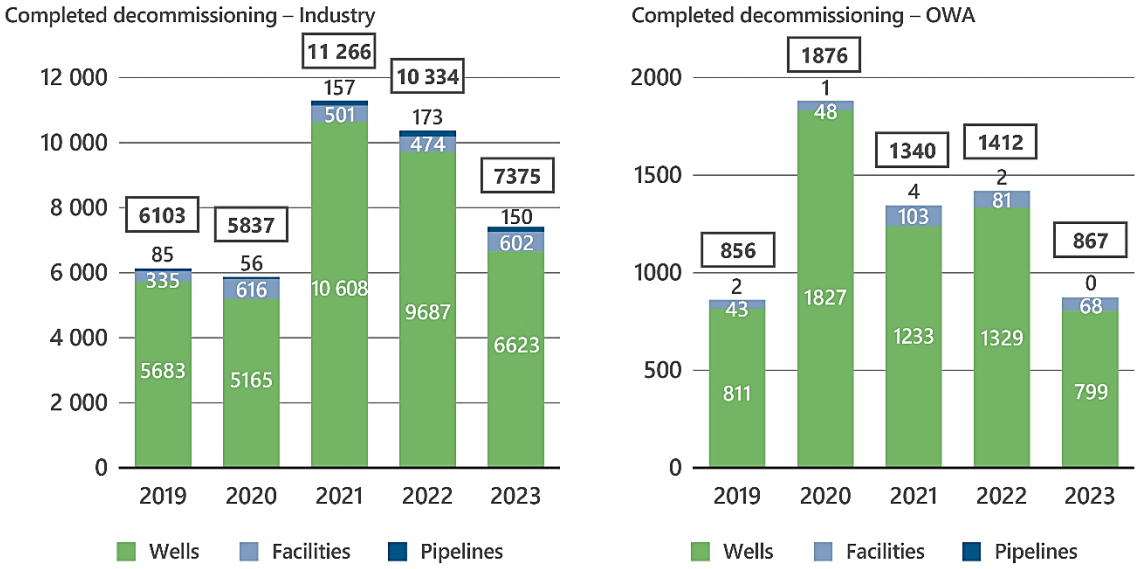

Figure 14. Industry and OWA decommissioning, 2019–2023

Note: 2023 data as of October 2024. Data from previous years sourced from both ABC Highlights Reports and Closure Quotas Highlights Report.

While the number of industry licences receiving a reclamation certificate in 2023 dipped from 2022, the OWA has continued to increase its reclamation certification over the past five years (see figure 15).

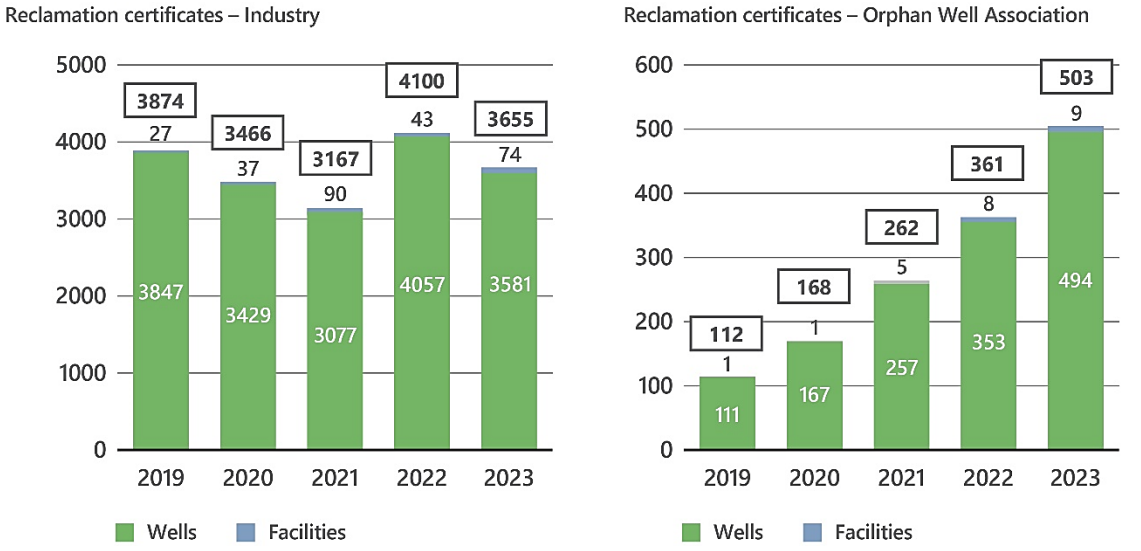

Figure 15. Industry and OWA reclamation certification, 2019–2023

Note: 2023 data as of October 2024. Data from previous years sourced from both ABC Highlights Reports and Closure Quotas Highlights Report.

Closure Spend Summary 2022–2023

Closure spend is the money spent on different closure activities. This section focuses on the eligible closure spend (defined in *Manual 023*) since the introduction of closure quotas in 2022. Previous spends through the ABC program can be found in the ABC highlights reports.

In 2023, industry reported eligible spending of $769 million, exceeding the requirement by 10%. The industry-funded OWA completed a further $149 million in closure work and an estimated $174 million in funding came from the Government of Alberta's SRP grants (see figure 16).

In total, over $1 billion was spent on closure work in 2023.

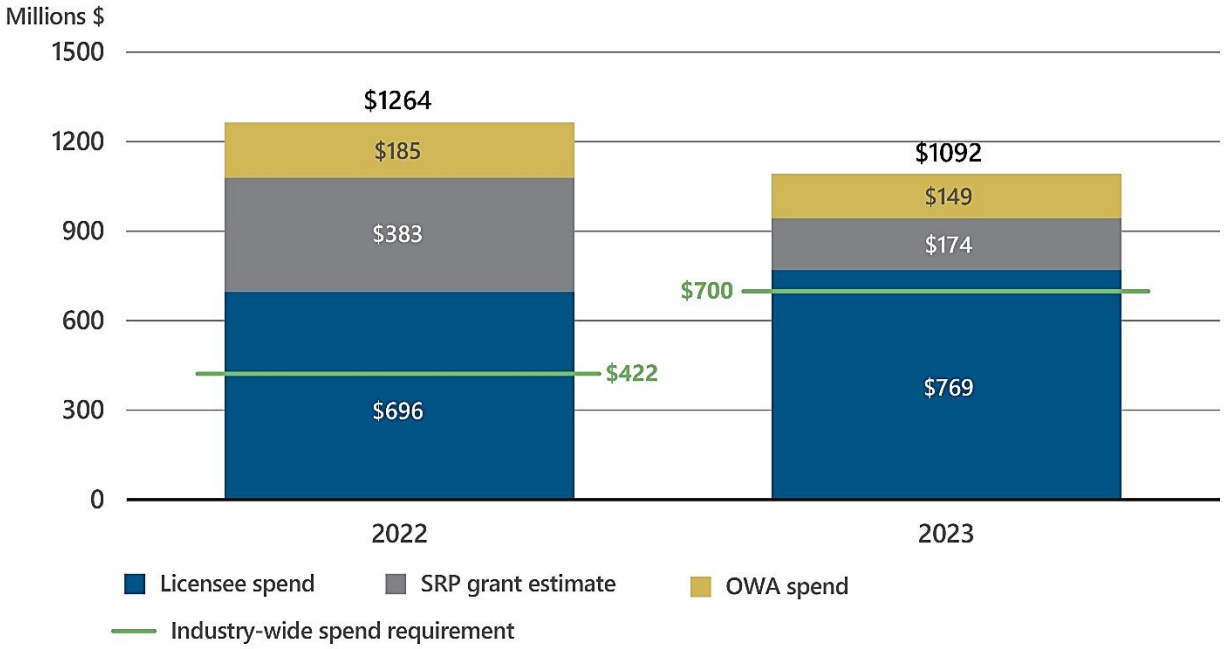

Figure 16. Total closure spend and future industry-wide spend requirements, 2020–2023

Notes:
1. Data as of October 2024.
2. SRP funding ended in 2023.
3. OWA spend sources from OWA.

In 2023, licensees continued to focus closure work on decommissioning activities, as shown in figure 17. The distribution of closure spend was 56% on decommissioning and 19% on remediation activities, up from 14% the previous year; however, less was spent on reclamation activities. Whereas the OWA, as shown in figure 18, slightly increased its focus on remediation and reclamation for 2023.

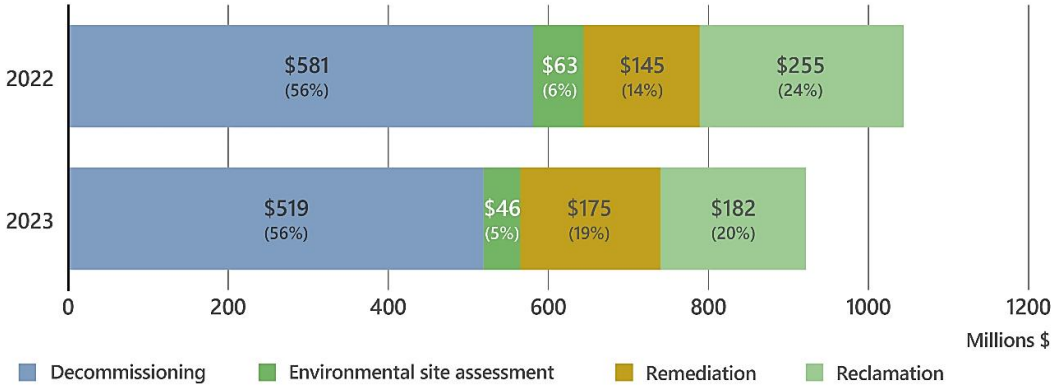

Figure 17. Distribution of industry spend by closure category, 2022–2023

Note: Data as of October 2024. These spends include all eligible spends reported in OneStop and may not reflect all SRP funding provided.

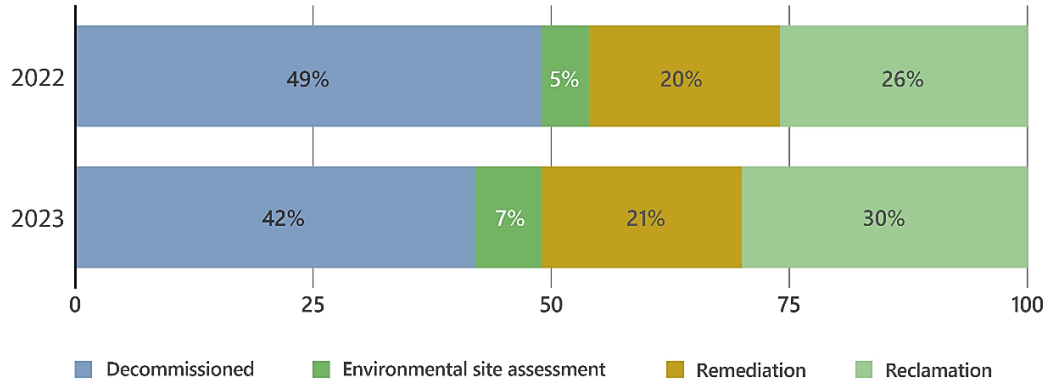

Figure 18. Distribution of OWA spend by closure category, 2022–2023

Note: Data sourced from OWA and only includes spend on sites with completed decommissioning work.

Figure 19 shows the closure spend by infrastructure type. In 2023, the spending on wells and pipelines was mostly for decommissioning, whereas for facility closure activities, it was mostly for remediation. Across all types of infrastructure, we see a decrease in decommissioning spend and an increase in remediation spend.

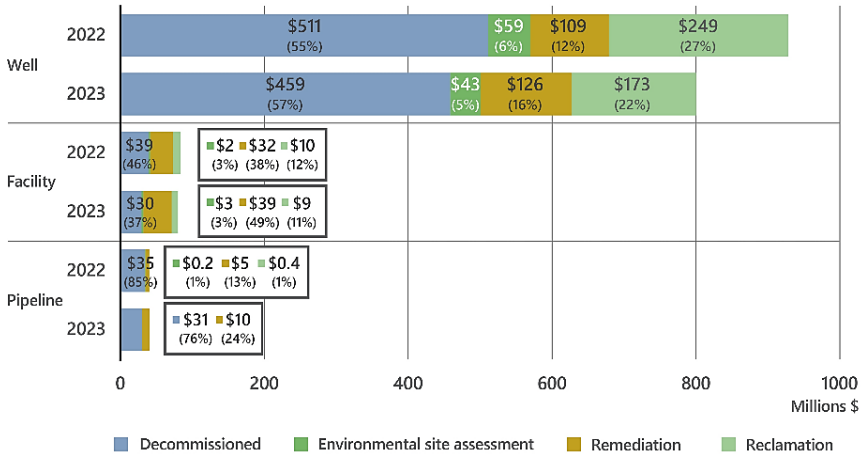

Figure 19. Industry spend by infrastructure type by closure category, 2022–2023

Note: Data as of October 2024.

Impact of Closure Spend on Liability Estimates

Total estimated liability changes every year (see figure 20). Liability is added each year with new activity, just as it is reduced through closure work. The net impact for 2023 estimated liability (from January 2023 to January 2024) is an overall reduction of $202 million. This was accompanied by a reduction of over 4000 inactive wells, an increase of 1400 decommissioned wells, and over 5600 reclamation-certified wells. Shifts in facility life-cycle status were focused on decommissioning (+700) and reclamation-certified (+100).

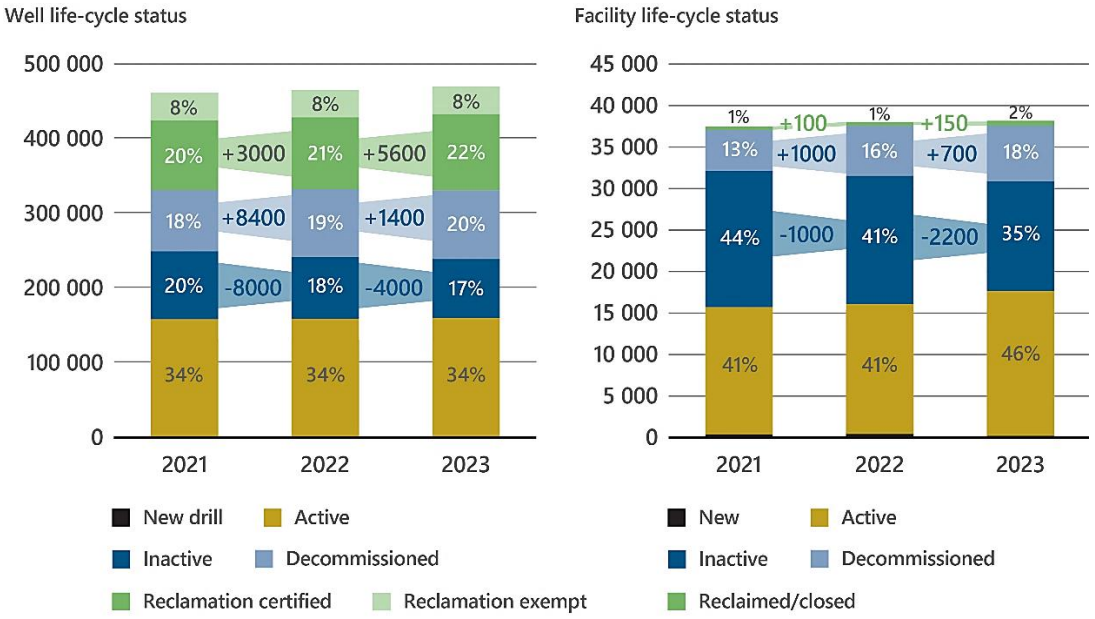

Figure 20. Change in life-cycle status, 2021–2023

Note: Data as of December 31 of each year.

There is not a one-to-one linkage between closure spend and reduction of liability estimates. A $700 million quota does not mean a $700 million decrease in the liability estimate. This is because liability estimates only decrease once a closure milestone is achieved (e.g., after decommissioning work is complete and submitted or after a reclamation certificate is issued). Closure work is progressive, working towards a milestone, but milestones are not always achieved within a reporting year (e.g., to achieve a reclamation certificate, local vegetation sometimes takes several seasons to re-establish). When we examine the milestones achieved and the amount of estimated liability reduced, we see that $483 million of estimated liability was removed in decommissioning and $109 million of estimated liability was removed from reclamation.

Table 2 breaks down closure spend that is still in progress versus sites that have reached a closure milestone (i.e., decommissioned or reclaimed). Remediation and reclamation activities take longer to complete; therefore, most of this spend is on sites that have yet to reach a milestone and are still in progress.

Table 2. Industry closure spend in progress and achieving a milestone, 2022–2023

	Closure In Progress Spend ($ millions)				Closure Milestone Spend ($ millions)	
Year	Decommissioning	Environmental site assessment	Remediation	Reclamation	Decommissioning	Reclamation certified
2022	161.1	62.4	144.2	251.8	419.2	5.0
2023	178.9	45.7	175.3	179.8	339.6	2.0

Closure Spend Compliance

Each licensee with inactive liability has a mandatory closure spend requirement. Licensees that met the requirement spent equal to or more than their mandatory spend or provided security in lieu of closure work. Licensees that did not meet their mandatory spend were able to come into compliance by providing security for the difference between their mandatory closure spend quota and their closure spend reported. Licensees that did not provide security are still noncompliant.

When we reported on the 2022 mandatory closure spend, 90% of licensees were compliant. There were 51 noncompliant licensees with an outstanding amount of $4.2 million in missed quotas (1% of the industry-wide closure spend requirement). Since then, ten licensees have come into compliance, with a remaining outstanding amount of $3.4 million owing from the 39 remaining noncompliant licensees.

For the 2023 mandatory closure spend, 91% of licensees were compliant. There are 54 noncompliant licensees with an outstanding amount of $5.0 million in missed quotas (less than 1% of the industry-wide closure spend requirement). More information can be found on the licensee dashboard where stakeholders can review individual licensee information. Table 3 summarizes the amount still owing in security for 2022 and for 2023.

Table 3. Outstanding closure quota compliance and security owing, 2022-2023

Year	Outstanding Closure Security Owed ($ millions)
2022	3.4
2023	5.0
Total security owed	8.4

Note: Data as of October 2024, data continues to change as compliance activities are undertaken.

Of the 54 noncompliant licensees for the 2023 mandatory closure spend quota, 18 licensees are noncompliant for the first time and 36 have an outstanding noncompliance with the 2022 mandatory spend. Licensee-specific compliance actions can be found on the AER Compliance Dashboard.

Table 4 lists those licensees who were non-compliant for both 2022 and 2023 for closure spend quota.

Table 4. Licensees noncompliant with 2022 and 2023 mandatory spend

Licensee	Outstanding Security
1099477 Alberta Ltd.	$1 766
935821 Alberta Ltd.	$14 988
Altima Resources Ltd.	$47 813
Ascensun Oil and Gas Ltd.	$272 802
Bay Trail Resources Ltd.	$6 329
Bear Hills Industries Ltd.	$20 980
Bluestone Resources Inc.	$29 184
Bornite Energy Ltd.	$563 296
Convega Energy Ltd.	$158 303
Crazy Hill Resources Ltd.	$34 336
Crimson Oil & Gas Ltd.	$296 726
Jaycor Resources Inc.	$26 946
Kasten Energy Inc.	$761 398
Malak Energy Inc.	$8 092
Marksmen Energy Inc.	$78 180
Mooncor Energy Inc.	$40 544
Mount Dakota Energy Corp.	$8 747
Mutiny Oil & Gas Ltd.	$85 151
New North Resources Ltd.	$542 733
Petebrook Investments Ltd.	$3 531
Pismo Energy Ltd.	$289 874
Rally Canada Resources Ltd.	$975 415
Red Oak Mining Corp.	$1 766
Regnum Energy Ltd.	$47 311
Renergy Petroleum (Canada) Co., Ltd.	$572 903
Richards Oil & Gas Limited	$82 632
Ridgeway Petroleum Corp.	$3 638
RON Resources Ltd.	$72 442
Scavenger Energy GP Inc.	$219 536
Seol Energy Inc.	$345 561
Sunshine Oilsands Ltd.	$452 590
Topanga Resources Ltd.	$632 137
Topeka Energy Inc.	$2 916
Tri-Energy Resources Ltd.	$32 271
True North Oil & Gas Limited	$2 916
Westhill Resources Limited	$175 831

See "Additional Information" on the Liability Management Performance Report webpage for the following:

- Interactive dashboards for licensee-specific information and regional-specific information. Only active licensees are included in this year's report.
- A list of companies and their compliance with 2023 closure quotas and any outstanding administrative and orphan levies from 2022 to 2024. Only licensees with inactive well or facility licences receive closure quotas.