

Administrative Penalty Director's Decision

Named Party: Paramount Resources Ltd..¹ **BA Code:** 0AW4

File No. 2016-022

Legislative Authority

Section 237 of the *Environmental Protection and Enhancement Act (EPEA)* and section 1 of the Schedule in the *Administrative Penalty Regulation*

Sections 59.3 through 59.8 of the *Public Lands Act (PLA)* and section 171(2) of the *Public Lands Administration Regulation*

Sections 70 through 75 of the *Responsible Energy Development Act (REDA)* and section 8.1 of *REDA General Regulation*

Administrative Penalty Type

Section 237(2)(a) of *EPEA* in reference to daily amount (see **Penalty Assessment**, below)

Section 59.4(4)(a) of the *PLA* in reference to payment of the penalty (see **Penalty Assessment**, below)

Section 71(4)(a) of *REDA* in reference to payment of the penalty (see **Penalty Assessment**, below)

¹ In September 2017, Paramount merged with Trilogy Energy Corp. As Trilogy and Paramount have amalgamated into one corporation (Paramount), references to Paramount in this report include Trilogy, unless otherwise indicated.

PENALTY ASSESSMENT

Preliminary Penalty Assessment

Number of Counts Identified	Base Assessment Amount	Factor Variance(s)	
Count 1	\$5 000	+ \$1 000 (factor a) + \$1 500 (factor b) + \$ 500 (factor e) - \$3 000 (factor d)	
Count 2	\$5 000		
Count 3	\$5 000		
Count 4	\$5 000		
Count 5	\$5 000		
Count 6	\$5 000		
Total Counts: 6	Total Base Assessment: \$30 000	Total Variance:	\$0

Director's Decision Summary

On September 20, 2018, I, Martin Paetz, Director, Business Process, Environment & Operational Performance for the Alberta Energy Regulator (AER), spoke with John Hawkins, Director, Asset Management for Paramount Resources Ltd. (Paramount) to discuss the Preliminary Administrative Penalty Assessment (PA).

Mr. Hawkins was sent the PA via email on September 20, 2018 for review, and to determine if Paramount would like to meet with the AER in person to discuss the facts on which the preliminary assessment was based, how the assessment was calculated, and provide an opportunity for Paramount to share with the AER any relevant information not previously submitted to be considered prior to making a final decision. In the email, Mr. Hawkins was requested to inform the AER by September 24, 2018 if Paramount would be meeting with the AER on September 25, 2018, or choosing to waive the opportunity to meet.

On September 24, 2018, I, Martin Paetz received a voicemail, and a subsequent email from Mr. Hawkins, indicating that Paramount had reviewed the PA and were not requesting a meeting with the AER.

Accordingly, the following are the identified counts, with the associated base assessment and factor variances for the contraventions under the *Environmental Protection and Enhancement Act*, the *Public Lands Act* and the *Pipeline Rules*:

COUNT 1

On or about September 22, 2015 until October 6, 2016, in the province of Alberta, Paramount Resources Ltd. did release or permit the release from pipeline licence 15913 segment 15, located at LSD 15-04-064-18W5, into the environment of a substance in an amount, concentration, or level or at a rate that caused or may have caused a significant adverse effect contrary to section 109(2) of *EPEA*.

		BASE PENALTY TABLE		
		Type of Contravention		
Potential For Adverse Effect		Major	Moderate	Minor
	Major	5000	3500	2500
	Moderate	3500	2500	1500
	Minor to None	2500	1500	1000

Type of Contravention: Major

Protection of the environment is one of the primary purposes of *EPEA*. The prohibition against releasing a substance in an amount, concentration, or rate that causes or may cause a significant adverse effect is fundamental in fulfilling this purpose and considered a major contravention. This was magnified due to the fact that the release went undetected for 380 days.

Potential for Adverse Effect: Major

The release of approximately 250 m³ of oil emulsion is likely to cause a significant adverse effect to the environment, which includes living organisms. One of the effects of an oil emulsion release in a wetland is the contact of oil with shorelines and organisms that inhabit the water’s surface, including birds, mammals and reptiles. Birds are highly vulnerable because they spend most of their time on water (diving birds) or shorelines (wading birds). Birds and fur-bearing animals are immediately affected because oil sticks so readily to feathers and fur. When waterfowl and fur-bearing animals come in contact with oil they usually succumb by loss of buoyancy and hypothermia because oil destroys the insulating properties of plumage and fur. Two birds, a woodpecker and an unidentified passerine (i.e., a perching bird), were exposed to oil at the release site and died.

However, the evidence shows that the release was occurring from at least September 22, 2015. Any number of wildlife species present in the area could have been exposed to the oil emulsion present at the surface in the area and adversely affected.

A gas analysis taken by Paramount at 10-04-064-18W5M from October 23, 2015 showed the gas entrained in the oil emulsion contained 0.88% H₂S which is equivalent to 8,800 parts per million (ppm). Wildlife that may have come into contact and agitated the oil emulsion could have released the H₂S and inhaled this gas. The AER has adopted *Alberta Environment and Parks Alberta Ambient Air Quality Objectives and*

Guidelines Summary which states 3 ppm or greater in a 24 hour period could cause health effects. Although this was designed for human health, wildlife could also be impacted.

Base Assessment: \$5 000

Environmental Protection and Enhancement Act

COUNT 2

On or about September 22, 2015 until October 6, 2016, in the Province of Alberta, Paramount Resources Ltd. failed to take all reasonable measures to repair, remedy, and confine the effects of the oil emulsion released to prevent an adverse effect to the environment as soon as Paramount out to have known of the release, contrary to section 112(1) of *EPEA*.

		BASE PENALTY TABLE		
		Type of Contravention		
Potential For Adverse Effect		Major	Moderate	Minor
	Major	5000	3500	2500
	Moderate	3500	2500	1500
	Minor to None	2500	1500	1000

Type of Contravention: Major

The requirement to take immediate reasonable action to repair, remedy and confine the adverse effects of a substance once released to the environment as soon as a responsible party ought to have known about the release is a critical requirement to ensure protection of the environment. The intent of the requirement is to reduce or mitigate any adverse or potential adverse effects to the environment by requiring persons to take immediate action to remediate, manage, remove, or otherwise dispose of the released substance. If immediate action is not taken, even if it is just confining a release, then there is a greater chance of adverse effects to the environment, including more severe adverse effects.

Potential for Adverse Effect: Major

The impacts of the release, as reported by Paramount include two birds, a woodpecker and an unidentified passerine (i.e., a perching bird), which were exposed to oil emulsion at the release site and died. The extent of the release and its lengthy duration of remaining in the environment may have caused adverse effects to other forms of wildlife. The failure to take remedial actions as soon as Paramount ought to have known very likely resulted in a greater degree of adverse effects to the environment that could have been mitigated if dealt with sooner.

However, the evidence shows that the release was occurring from at least September 22, 2015. Any number of wildlife species present in the area could have been exposed to the oil emulsion present at the surface in the area and adversely affected.

A gas analysis taken by Paramount at 10-04-064-18W5M from October 23, 2015 showed the gas entrained in the oil emulsion contained 0.88% H₂S which is equivalent to 8,800 parts per million (ppm). Wildlife

that may have come into contact and agitated the oil emulsion could have released the H₂S and inhaled this gas. The AER has adopted *Alberta Environment and Parks Alberta Ambient Air Quality Objectives and Guidelines Summary* which states 3 ppm or greater in a 24 hour period could cause health effects. Although this was designed for human health, wildlife could also be impacted.

Base Assessment: \$5 000

Public Lands Act

COUNT 3

On or about September 22, 2015 until October 6, 2016, in the Province of Alberta, Paramount Resources Ltd. released 250 m³ of oil emulsion on public land that resulted in loss or damage to public land, contrary to the terms of section 54(1) of the *Public Lands Act*.

BASE PENALTY TABLE				
Seriousness of Contravention				
Extent of actual or potential loss or damage		Major	Moderate	Minor
		Major	5000	3500
Moderate		3500	2500	1500
Minor		2500	1500	1000
None		1000	650	250

Seriousness of Contravention: Major

Public lands are a valuable resource and entitled to be protected for the benefit of all Albertans. As the economy of Alberta expands and diversifies, pressures will be increasingly exerted on public lands to accommodate additional activity. It is necessary to ensure public lands are not damaged so that existing and future generations of Albertans can benefit from them. Any loss or damage to public lands is considered as serious breach of legislation.

The release is located within a large wetland complex consisting primarily of shrubby fens, wooded coniferous fens and wooded coniferous swamps, with areas of marsh and shallow open water occurring in areas affected by beaver activity and subsequent water impoundment. A wooded coniferous swamp and a shrubby fen associated with an unnamed tributary are located immediately adjacent to the pipeline RoW. Wetlands, including marshes, swamps, fens, and muskeg are sensitive to oil spills because of their complex and rich ecosystem diversity and their ability to collect and filter runoff from surrounding environments.

Paramount’s failure to include the pipeline in weekly aerial inspections prevented Paramount from detecting the release until October 6, 2016. Had Paramount detected the release sooner, the loss or damage to public lands would have been reduced.

Extent of Actual or Potential Loss or Damage: Major

The release location was on public land under *Public Lands Act* disposition Pipeline Agreement (PLA) 880279. The release resulted in significant loss or damage to public land. Sampling results showed high

salinity and chlorides in soils affected by produced water from the release. Between January 24 and March 10, 2017, a total of 29,652.06 tonnes of impacted soil from the pipeline and containment area excavations was transported to an approved waste management facility for disposal. Additionally, from December 1 to 6, 2016, a total of approximately 26,400 square metres (m²) of impacted trees were removed throughout the release area.

The release resulted in the loss/destruction of a total 62,343 m³ of fresh water.

Base Assessment: \$5 000

Pipeline Rules

COUNT 4

On October 6, 2016, in the Province of Alberta, Paramount Resources Ltd. did fail to conduct and document an evaluation of pipeline licence 15913, segment 15, to determine the necessity and suitability of the internal corrosion mitigation procedures, contrary to section 54(1) of the *Pipeline Rules*.

BASE PENALTY TABLE				
Seriousness of Contravention				
Extent of actual or potential loss or damage				
		Major	Moderate	Minor
Major		5000	3500	2500
Moderate		3500	2500	1500
Minor to		2500	1500	1000
None		1000	600	250

Seriousness of Contravention: Major

Corrosion is a major contributor affecting pipeline integrity and performance. The AER’s requirements to conduct and document an evaluation for the necessity and suitability of any internal corrosion mitigation procedures is for all licensees to follow to ensure pipelines are operated in a safe and effective manner. Steel pipelines that convey oil emulsion containing water and gases such as H₂S and CO₂ are under constant threat of corrosion. The most recent gas analysis from October 23, 2015 for the 10-04 Battery shows that the gas entrained in the oil emulsion contained 0.88% H₂S and 3.19% CO₂. Consequently, an effective corrosion mitigation program is necessary to reduce the risk of internal corrosion and subsequent leaks to the environment.

The first corrosion inhibition evaluation documented and conducted for the pipeline was by the chemical supply company Baker Hughes. The front page of the document shows that the evaluation was for Trilogy Energy’s “North Montney” area and was conducted on January 21, 2014—almost two and a half years after the commencement of the operation of the new pipeline on September 23, 2011. There is no other evidence that an evaluation of the pipeline to determine the necessity for, and the suitability of, internal corrosion mitigation procedures was conducted or documented prior to the commencement of pipeline operation.

Extent of Actual or Potential Loss or Damage: Major

Approximately 29,652.06 tonnes of impacted soil from the pipeline and containment area excavations was transported to an approved waste management facility for disposal. Approximately 26,400 square metres (m2) of impacted trees were removed throughout the release area. The release resulted in the loss/destruction of a total 62,343 m³ of fresh water. Two birds, a woodpecker and an unidentified passerine (i.e. a perching bird) were exposed to oil emulsion at the release site and died.

The extent of the release and its lengthy duration of remaining in the environment may have caused adverse effects to other forms of wildlife.

Base Assessment: \$5 000

Pipeline Rules

COUNT 5

On October 6, 2016, in the Province of Alberta, Paramount Resources Ltd. did fail to meet the minimum requirements for leak detection of pipeline licence 15913 segment 15, located at 15-04-064-18W5M, as set out in CSA Z662 Annex E Clause E.1.2 and E.6.1, contrary to section 9(4) of the *Pipeline Rules*.

		BASE PENALTY TABLE		
		Seriousness of Contravention		
Extent of actual or potential loss or damage		Major	Moderate	Minor
	Major	5000	3500	2500
	Moderate	3500	2500	1500
	Minor to None	2500	1500	1000
	None	1000	600	250

Seriousness of Contravention: Major

The purpose of a leak detection strategy is to ensure methods are in place that will contribute to the certain and timely detection of a release in order to support and inform appropriate pipeline control and emergency response actions.

From April 2011 to October 2016, Paramount did not implement the leak detection strategy for the pipeline as the pipeline was never included in the weekly aerial inspections. If the leak detection system was evaluated as described in Paramount’s response to steps they should have completed to ensure the pipeline was included in their weekly aerial leak detection system, the release would have been detected much earlier than October 6, 2016. OpsMobil conducted 18 weekly flights between May 4 and October 6, 2016, any of which would have provided an opportunity to detect the leak. Instead, the release failed to be detected for at least 380 days after it was visible at the surface on September 22, 2015.

In order to provide operational timelines and consistency in relation to the components of the leak detection system described above—and to provide operators with the necessary procedures and

information about the leak detection system for the pipeline—Clause E.6 of Annex E of CSA Z662 requires the development of a leak detection manual. Trilogy did not develop a leak detection manual for the pipeline previous to the discovery of the release on October 6, 2016.

Extent of Actual or Potential Loss or Damage: Major

Approximately 29,652.06 tonnes of impacted soil from the pipeline and containment area excavations was transported to an approved waste management facility for disposal. Approximately 26,400 square metres (m²) of impacted trees were removed throughout the release area. The release resulted in the loss/destruction of a total 62,343 m³ of fresh water. Two birds, a woodpecker and an unidentified passerine (i.e. a perching bird) were exposed to oil emulsion at the release site and perished.

The extent of the release and its lengthy duration of remaining in the environment may have caused adverse effects to other forms of wildlife.

Base Assessment: \$5 000

Pipeline Rules

COUNT 6

On October 6, 2016, in the Province of Alberta, Paramount Resources Ltd. did fail to demonstrate that the procedures contained in manuals are being implemented, contrary to section 7(3) of the *Pipeline Rules*.

		BASE PENALTY TABLE		
		Seriousness of Contravention		
Extent of actual or potential loss or damage		Major	Moderate	Minor
	Major	5000	3500	2500
	Moderate	3500	2500	1500
	Minor to None	2500	1500	1000
	None	1000	600	250

Seriousness of Contravention: Major

The AER requires licensees to not only have manuals but to implement the procedures contained in these manuals. This reduces the risk of pipeline leaks and ensures that when a pipeline leak does occur it is discovered as soon as possible to prevent the release from continuing and causing further damage or impact to the environment or public safety.

Routine pigging of an operating pipeline is necessary to remove any debris, solids, or liquids that may collect in the pipeline and restrict the flow through the pipeline that can lead to microbiologically influenced corrosion resulting in a high internal corrosion rate through a pipeline wall. Pigging is also necessary to allow the batch (i.e. a single volume applied at a given time) of corrosion inhibitor to be applied to protect the interior of steel pipelines from corrosion.

Paramount's *POMM* requires monthly pigging of its pipelines using ribbed, disk, or poly pigs, and provides operators with detailed instructions on how to safely launch and retrieve pigs in pipelines. The *POMM* also requires that operators maintain a log of all pigging operations.

The only evidence offered by Paramount that pigging had occurred prior to August 20, 2014 was an unsupported statement that it believed that it had been done. Based on all the evidence, Paramount has not been able to demonstrate that maintenance pigging was completed for the pipeline before August 20, 2014 — almost three years after it commenced operation on September 23, 2011.

Extent of Actual or Potential Loss or Damage: Major

Approximately 29,652.06 tonnes of impacted soil from the pipeline and containment area excavations was transported to an approved waste management facility for disposal. Approximately 26,400 square metres (m²) of impacted trees were removed throughout the release area. The release resulted in the loss/destruction of a total 62,343 m³ of fresh water. Two birds, a woodpecker and an unidentified passerine (i.e. a perching bird) were exposed to oil emulsion at the release site and perished.

The extent of the release and its lengthy duration of remaining in the environment may have caused adverse effects to other forms of wildlife.

Base Assessment: \$5 000

Factors to be Considered to Vary the Assessment

Factors	<i>REDA General Regulation</i>	<i>EPEA</i>	<i>PLA</i>
(a)	the importance to the regulatory scheme of compliance with the provision that was contravened;	the importance to the regulatory scheme of compliance with the provision;	the importance to the regulatory scheme of compliance with the provision that was contravened;
(b)	the degree of wilfulness or negligence, if any, on the part of any person responsible for the contravention;	the degree of wilfulness or negligence in the contravention;	the degree of wilfulness or negligence, if any, on the part of any person responsible for the contravention;
(c)	any steps taken by a person responsible for the contravention to avoid or limit the extent of any actual loss or damage that resulted or any potential loss or damage that may reasonably be expected to result from the contravention;	whether or not there was any mitigation relating to the contravention;	any steps taken by a person responsible for the contravention to avoid or limit the extent of any actual loss or damage that resulted or any potential loss or damage that may reasonably be expected to result from the contravention;
(d)	any steps taken by a person responsible for the contravention to prevent its recurrence;	whether or not steps have been taken to prevent reoccurrence of the contravention;	any steps taken by a person responsible for the contravention to prevent its recurrence;
(e)	any previous contravention of a	whether or not the person who	any previous contravention of a

	provision prescribed by section 8.1 by a person responsible for the contravention;	receives the notice of administrative penalty has a history of noncompliance;	provision prescribed by subsection (2) by a person responsible for the contravention;
(f)	whether a person responsible for the contravention derived or is likely to derive any economic benefit from the contravention;	whether or not the person who receives the notice of administrative penalty has derived any economic benefit from the contravention;	whether a person responsible for the contravention derived or is likely to derive any economic benefit from the contravention;
(g)	any other factor that, in the opinion of the Regulator, is relevant.	any other factors that, in the opinion of the Director, are relevant.	any other factor that, in the opinion of the director, is relevant.

Factors Applicable to this Case

Factor from above	Amount Varied	Description/Comments
(a)	+\$1 000	Adherence to the requirements to immediately self-report and remediate releases that may cause an adverse effect to the environment as soon as the responsible party knows are vitally important to the AER's regulatory framework and mandate. The AER has an expectation that regulated parties conducting energy related activities understand and comply with all legislative and regulatory requirements. Not being aware of the release for an extended period of time is an aggravating factor.
(b)	+\$1 500	Paramount did not take all reasonable steps to ensure the effective operation of the pipeline. The leak detection system was not effective. Maintenance pigging did not occur for almost 3 years after the commencement of operation of the pipeline. There were corrosion inhibition issues – not conducting annual maintenance batch treatments for 2 consecutive years, periods of under-injection and insufficient monitoring, no evidence to support correct volume for initial batch treatment.
(c)	Neutral	This factor is not applicable. Once the release was identified steps taken to contain and remediate the release were commensurate with AER requirements and expectations.
(d)	-\$3 000	A leak detection manual was developed for the Kaybob Montney Oil pipeline system in 2017. The pipeline was added to the weekly aerial inspection schedule. The weekly aerial leak inspections now use helicopters instead of fixed-wing aircraft to allow more detailed observation and analysis

		<p>The pigging logs for the pipeline now require operators to measure pig sizing before pigs are deployed.</p> <p>Routine testing is now conducted to determine the amount of bacteria and residual corrosion inhibitor in the pipeline to monitor the effectiveness of corrosion control measures.</p> <p>Training on pigging and corrosion inhibition was provided to employees after the incident.</p>
(e)	+\$500	Paramount was issued an administrative penalty on May 3, 2018, for failing to immediately report or remediate a release from a pipeline.
(f)	Neutral	This factor is not applicable.
(g)	Neutral	This factor is not applicable.

Final Penalty Decision

I, Martin Paetz, Director, Business Process, Environment & Operational Performance for the AER, have fully considered all of the information collected in the investigation.

After a review of all the information available, I find there is lack of evidence to support due diligence by Paramount for the following reasons:

- The pipeline was not included in an annual risk assessment until October 22, 2015, which prevented Paramount from including the pipeline in a strategy to mitigate the potential for any pipeline failures.
- Internal corrosion mitigation procedures were not implemented for the pipeline until June 4, 2014.
- Internal corrosion monitoring techniques used by Paramount for the pipeline produced results that were not representative of the actual corrosion conditions in the pipeline. Consequently, these techniques were ineffective in warning Paramount of potential leaks in the pipeline.
- Paramount did not take steps to ensure that the pipeline was included in routine leak detection monitoring before the incident. The release was evident at the surface on September 22, 2015. The failure to include the pipeline in weekly aerial inspections of its rights-of-way prevented the detection of the release on September 30, 2015, and instead it was detected 372 days later on October 6, 2016.

I find the base penalty amounts recommended in the PA appropriate and reflective of both the potential damage and actual damage and lack of due diligence. The factors assessed in the Assessment are reasonable. Accordingly, the application of the factors to the base penalty assessment is as follows:

Number of Counts Identified	Base Assessment Amount	Factor Variance(s)	
Count 1	\$5 000	+ \$1 000 (factor a) + \$1 500 (factor b) + \$ 500 (factor e) - \$3 000 (factor d)	
Count 2	\$5 000		
Count 3	\$5 000		
Count 4	\$5 000		
Count 5	\$5 000		
Count 6	\$5 000		
Total Counts: 6	Total Base Assessment: \$30 000	Total Variance:	\$0

FINAL PENALTY ASSESSMENT: \$30 000

Date: September 27, 2018

Director's Signature:

<original signed by>

Martin Paetz, Director, Business Process,
 Environment & Operational Performance, AER