



## Annual Audit Compliance Report Form

*Environmental Protection Act 1986, Part V*

Once completed, please submit this form either via email to [info-der@dwer.wa.gov.au](mailto:info-der@dwer.wa.gov.au), or to the below postal address:

Department of Water and Environmental Regulation  
Locked Bag 33 Cloisters Square  
PERTH WA 6850

Section A – Licence Details			
Licence number:	L9009	Licence file number:	L9009/2016/1
Licence holder:	Northern Minerals Limited		
Trading as:	Northern Minerals Limited		
ACN:	119 966 353		
Registered address:	Level 1, 675 Murray Street, WEST PERTH WA 6005		
Reporting period:	01 / 01 / 2019 to 31 / 12 / 2019		

Section B – Statement of Compliance with Licence Conditions	
Did you comply with all of your licence conditions during the reporting period? (please tick the appropriate box)	
<input type="checkbox"/> Yes – please complete: <ul style="list-style-type: none"><li>• section C;</li><li>• section D if required; and</li><li>• sign the declaration in Section F.</li></ul>	
<input checked="" type="checkbox"/> No – please complete: <ul style="list-style-type: none"><li>• section C;</li><li>• section D if required;</li><li>• section E; and</li><li>• sign the declaration at Section F.</li></ul>	

Section C – Statement of Actual Production	
Provide the actual production quantity for this reporting period. Supporting documentation is to be attached.	
<b>Prescribed Premises Category</b>	<b>Actual Production Quantity</b>
5 – Processing or beneficiation of metallic or non-metallic ore	27,363.5 tonnes crushed; 27,363.5 tonnes processed
89 – Putrescible landfill site	812.47 m <sup>3</sup> of waste disposed to landfill

### Section D – Statement of Actual Part 2 Waste Discharge Quantity

Provide the actual Part 2 waste discharge quantity for this reporting period. Supporting documentation is to be attached.

Prescribed Premises Category	Actual Part 2 Waste Discharge Quantity				
Tailings Storage Facility (TSF) Combined Tails Solids (tonnes); Combined Tails Solids and Combined Tails Slurry (estimated discharge m3)  and  Evaporation Pond Raffinate (discharge m3)	Month	Raffinate (m <sup>3</sup> )	Combined Tailings Solids (tonnes)	Combined Tailings Solids (m <sup>3</sup> )	Combined Tailings Slurry (m <sup>3</sup> )
	Jan-19		1374	549	6,047
	Feb-19		3071	1228	10,105
	Mar-19		3333	1333	11,708
	Apr-19		1619	648	8,746
	May-19		1982	793	11,332
	Jun-19		1027	411	5,490
	Jul-19		3730	1492	12,405
	Aug-19	49	3892	1557	11,104
	Sep-19	50	1399	560	6,679
	Oct-19		2404	962	8,307
	Nov-19		4515	1806	13,953
	Dec-19		2896	1158	10,316
	<b>TOTAL</b>	<b>99</b>	<b>31,241</b>	<b>12,497</b>	<b>116,192</b>

### Section E – Details of Non-Compliance with Licence Condition

Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.

Condition no:	1.3.3	Date(s) of non-compliance:	Nov-Dec 2019
Details of non-compliance:			
<p><i>Condition 1.3.3: The Licensee shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.3.2 and that sufficient stockpiles of cover are maintained on site at all times.</i></p> <p><i>Table 1.3.2: Putrescible Waste to be covered by 300mm of inert waste Type 1 or soil on a minimum fortnightly basis.</i></p> <p>Putrescible waste was not covered at the required minimum frequencies during the latter part of 2019.</p>			

Section E – Details of Non-Compliance with Licence Condition	
<p>What was the actual (or suspected) environmental impact of the non-compliance?</p> <p><b>NOTE</b> – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.</p>	
<p>There are no known actual (or suspected) environmental impact as a result of this non-compliance.</p> <p>Refer to Figure 1: Browns Range Landfill Facility – Dec 2019, in Attachment 1 for location of the non-compliance.</p>	
Cause (or suspected cause) of non-compliance:	
<p>Responsibility for day to day waste management was not well defined in waste management procedures. During the earlier part of 2019, responsibilities for waste transfers and management of the Landfill Facility were assigned to Operations personnel following discussions with site management and supervisors; while the Environment Department remains responsible for monitoring compliance with licence conditions. Landfill management was not appropriately resourced and prioritised by the Operations team during the latter half of the year and as a result this condition was not complied with during November and December 2019.</p>	
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:	
<p>There is no evidence of any adverse effects resulting from the non-compliance.</p> <p>Formal waste management procedures and organisational structures/responsibilities and resourcing for waste management are being reviewed to improve performance in this area.</p>	
Was this non-compliance previously reported to DWER?	
<input type="checkbox"/> Yes, and	
<input type="checkbox"/> Reported to DWER verbally	Date:    /    /
<input checked="" type="checkbox"/> Reported to DWER in writing	Date: 8 / 4 / 2020

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	1.3.4	Date(s) of non-compliance:	Jan & Feb 2019
Details of non-compliance:			
<p><i>Condition 1.3.4: The Licensee shall ensure that waste material is only stored and/or treated within vessels or compounds provided within the infrastructure detailed in Table 1.3.3.</i></p> <p><i>Table 1.3.3: Beneficiation Plant &amp; Hydrometallurgical Event Ponds / Material: Potentially contaminated stormwater and spillage from the beneficiation and hydrometallurgical processing facilities: 1.1m freeboard maintained to contain a 1 in 20-year return period, 24-hour rainfall event.</i></p> <p>Northern Minerals notified DWER via an incident notification form (N1 Form) submitted 19<sup>th</sup> March 2019, that the freeboard requirements in both Event Ponds were not complied with during January and February 2019. There was no discharge from the facilities during the 2018/2019 wet season as water levels were managed by transferring excess pond water to alternate water storage facilities, i.e. the Evaporation Pond and Tailings Storage Facility (TSF). It's noted the 2018/2019 wet season was considered a relatively 'dry' year.</p> <p>During the 2019/2020 wet season, water levels were managed to maintain the 1.1m freeboard by pumping excess water to the TSF. Event Pond water was pumped to the tails hopper and used to assist pumping of tailings (as tailings flows are intermittent thereby reducing pumping effectiveness).</p>			
What was the actual (or suspected) environmental impact of the non-compliance?			
<p><b>NOTE</b> – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.</p> <p>There was no actual (or suspected) environmental impact as a result of this non-compliance. However, managing Event Pond water levels by transferring excess water to alternative storage facilities, i.e. the TSF, has created a positive water balance in that facility. Work is in progress to address the TSF water balance issue.</p> <p>Refer to Figure 2: Pilot Plant Infrastructure and Event Ponds, in Attachment 1 for location of the non-compliance.</p>			
Cause (or suspected cause) of non-compliance:			
<p>As per recent consultation with DWER (March 2020) an investigation indicates that the 1.1m freeboard specified for the Event Ponds is actually only sufficient to contain a 1 in 5-year, 24-hour rainfall event and not a 1 in 20-year event as stated in Table 1.3.3 of the licence. Irrespective of the freeboard volume provided, or it's correctness, it is not possible for the operation to comply with the 1.1m freeboard at all times of the year.</p> <p>Rather than a reliable and consistent water demand being generated by the Plant during the wet season, the current scenario would see periods of low or no demand from the Plant. This is due to anticipated (as well as unanticipated) extended periods of Plant shutdown, as a result of road closures and subsequent diesel and consumable supply interruptions. These circumstances</p>			

Section E – Details of Non-Compliance with Licence Condition	
<p>render it impossible to consume excess water from the Event Ponds in the Plant during the wettest time of the year and will ultimately result in excess water being captured which must be managed within the sites existing water management facilities or discharged to the environment.</p>	
<p>Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:</p>	
<p>There were no adverse effects of the non-compliance.</p> <p>Consultation with DWER commenced in early March 2020 regarding management of the Event Ponds and site wide water management, including a possible amendment of this licence condition to allow discharge of excess mine water to the environment.</p> <p>Remedial action currently in progress to resolve this compliance issue includes a full review of the site water balance and water management strategy, following which, further consultation will be undertaken and appropriate licence amendment applications submitted as required.</p>	
<p>Was this non-compliance previously reported to DWER?</p>	
<p><input checked="" type="checkbox"/> Yes, and</p>	
<p><input type="checkbox"/> Reported to DWER verbally</p>	<p>Date:    /    /</p>
<p><input checked="" type="checkbox"/> Reported to DWER in writing</p>	<p>Date: 19 / 3 / 2019</p>

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	1.3.5	Date(s) of non-compliance:	November 2019
Details of non-compliance:			
<p><i>Condition 1.3.5: The Licensee shall ensure that the beneficiation plant and hydrometallurgical event ponds are emptied (maximum of 0.5 m water allowed in each pond) at the commencement of the wet season.</i></p> <p><i>'Wet season' means the months of December in each year and January, February and March in the following year.</i></p> <p>Event Ponds were not emptied as per condition 1.3.5 prior to the commencement of the 2019/2020 wet season. i.e. 1<sup>st</sup> December 2019, however levels were managed (to maintain the 1.1m freeboard) by pumping excess water to the TSF until early March 2020. Water was pumped to the tails hopper and used to assist pumping of tailings (as tailings flows are intermittent thereby reducing pumping effectiveness).</p>			
What was the actual (or suspected) environmental impact of the non-compliance?			
<p><b>NOTE</b> – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.</p>			
<p>There was no actual (or suspected) environmental impact as a result of this non-compliance.</p> <p>Refer to Figure 2: Pilot Plant Infrastructure Overview, in Attachment 1 for the location.</p>			
Cause (or suspected cause) of non-compliance:			
<p>A lack of a formal wet season preparedness program or automated reminders led to an oversight on this occasion to ensure the ponds were emptied with a maximum of 0.5m allowed in each.</p>			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
<p>There were no adverse effects of the non-compliance.</p> <p>STEMS actions will be assigned to the Resident Manager (RM) (via the Chief Operating Officer – COO) at the beginning of November each year to ensure ponds are emptied (if required) to meet Condition 1.3.5. This will be undertaken in consultation with the Environment and Metallurgical Departments and should form part of an overall wet season preparedness program, to be developed by the Environment Department.</p>			
Was this non-compliance previously reported to DWER?			
<input type="checkbox"/> Yes, and			
<input type="checkbox"/> Reported to DWER verbally		Date:    /    /	
<input checked="" type="checkbox"/> Reported to DWER in writing		Date: 8 / 4 / 2020	

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	1.3.6	Date(s) of non-compliance:	2019
Details of non-compliance:			
<p><i>Condition 1.3.6: The Licensee shall ensure that all pipelines containing tailings, tailings return water and hydrometallurgical raffinate are either:</i></p> <p><i>(a) equipped with operating telemetry systems and pressure sensors to allow detection of leaks and failures;</i></p> <p><i>(b) equipped with flow switches in the event of a pipe failure; or</i></p> <p><i>(c) provided with secondary containment with sufficient volume to contain 12 hours of discharge.</i></p> <p>An internal review has revealed the following with respect to conveyance of tailings, return water and raffinate and associated pipeline corridors:</p> <ul style="list-style-type: none"> <li>Flow switches were not installed on the tailings and return water pipelines as stated would be done in the <i>W6007/2016/1 Construction Compliance Report (BR5-EN-RA-100-006)</i>, submitted 11<sup>th</sup> April 2018. It's noted this report was submitted prior to the construction of the pipeline corridors. It was believed that the corridor was in compliance with (c), however a review by Knight Piésold (TSF engineers) at the request of Northern Minerals has found that the capacity provided by the bunded corridor and catch sumps, is not sufficient to contain 12 hours of discharge. Currently, therefore, the tailings/return water pipeline is not fitted with (a), (b) or (c).</li> <li>With regards to the raffinate pipeline corridor, the abovementioned Construction Compliance report states that the corridor would be constructed to contain 12 hours of discharge, in preference to installing flow switches. A review shows that although the total volume provided by the bunded corridor and catch sumps will approximately contain 12 hours of flow from the raffinate pipeline, it is likely the falls within the corridor, particularly in the area where the pipeline crosses under the mine access road, will not ensure secondary containment to meet condition (c) above.</li> </ul>			
What was the actual (or suspected) environmental impact of the non-compliance?			
<p><b>NOTE</b> – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.</p>			
<p>There was no actual (or suspected) environmental impact as a result of this non-compliance.</p> <p>Refer to Figure 2: Pilot Plant Infrastructure Overview, in Attachment 1 for location.</p>			
Cause (or suspected cause) of non-compliance:			
<p><u>Tailings/return water pipeline corridor</u></p> <p>Subsequent to the submission of the Construction Compliance report, it was determined that a constant power source would be required at the TSF to provide power to the flow sensor at that point. The costs of installing power to the TSF to enable the installation of flow sensors on the outlet pipe, were found to be prohibitive and not economically feasible. A decision was therefore made to manage the risk via option (c) above, as it was believed the corridor capacity was sufficient to contain 12 hours of discharge.</p>			

## Section E – Details of Non-Compliance with Licence Condition

### Raffinate pipeline corridor

As the pipeline corridor was constructed after the submission of the Construction Compliance report, it appears that a post-construction review of the appropriateness of the design and construction compliance was overlooked. This statement also applies to the construction of the tailings/return water pipeline.

Further to the above, Northern Minerals wishes to install additional water transfer pipelines to allow movement of mine impacted water and TSF return water between water storage facilities to maximise water use and disposal efficiencies. This would require an upgrade in the current pipeline corridor capacity to ensure secondary containment of 12 hours of flow for all contaminated water. Such changes will be captured in the revised pipeline corridor design.

Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:

There were no adverse effects of the non-compliance.

Revised pipeline corridor designs are being prepared by Knight Piésold, in order to achieve Condition 1.3.6 (c) – '*provide secondary containment with sufficient volume to contain 12 hours of discharge*'. The pipeline corridors will be constructed during the 2020 dry season, or prior to operations resuming.

Was this non-compliance previously reported to DWER?

☐ Yes, and

☐ Reported to DWER verbally

Date:    /    /

☒ Reported to DWER in writing

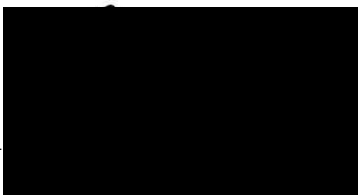
Date: 8 / 4 / 2020



## Section F – Declaration

I / We declare that the information in this Annual Audit Compliance Report is true and correct and is not false or misleading in a material particular<sup>1</sup>.

I / We consent to the Annual Audit Compliance Report being published on the Department of Water and Environmental Regulation's (DWER) website.

Signature <sup>2</sup> :		Signature:	
Name: (printed)		Name: (printed)	
Position:	Chief Operating Officer	Position:	
Date:	08/04/2020	Date:	
Seal (if signing under seal):			

<sup>1</sup> It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular.

<sup>2</sup> AACRs can only be signed by the licence holder or an authorised person with the legal authority to sign on behalf of the licence holder.