

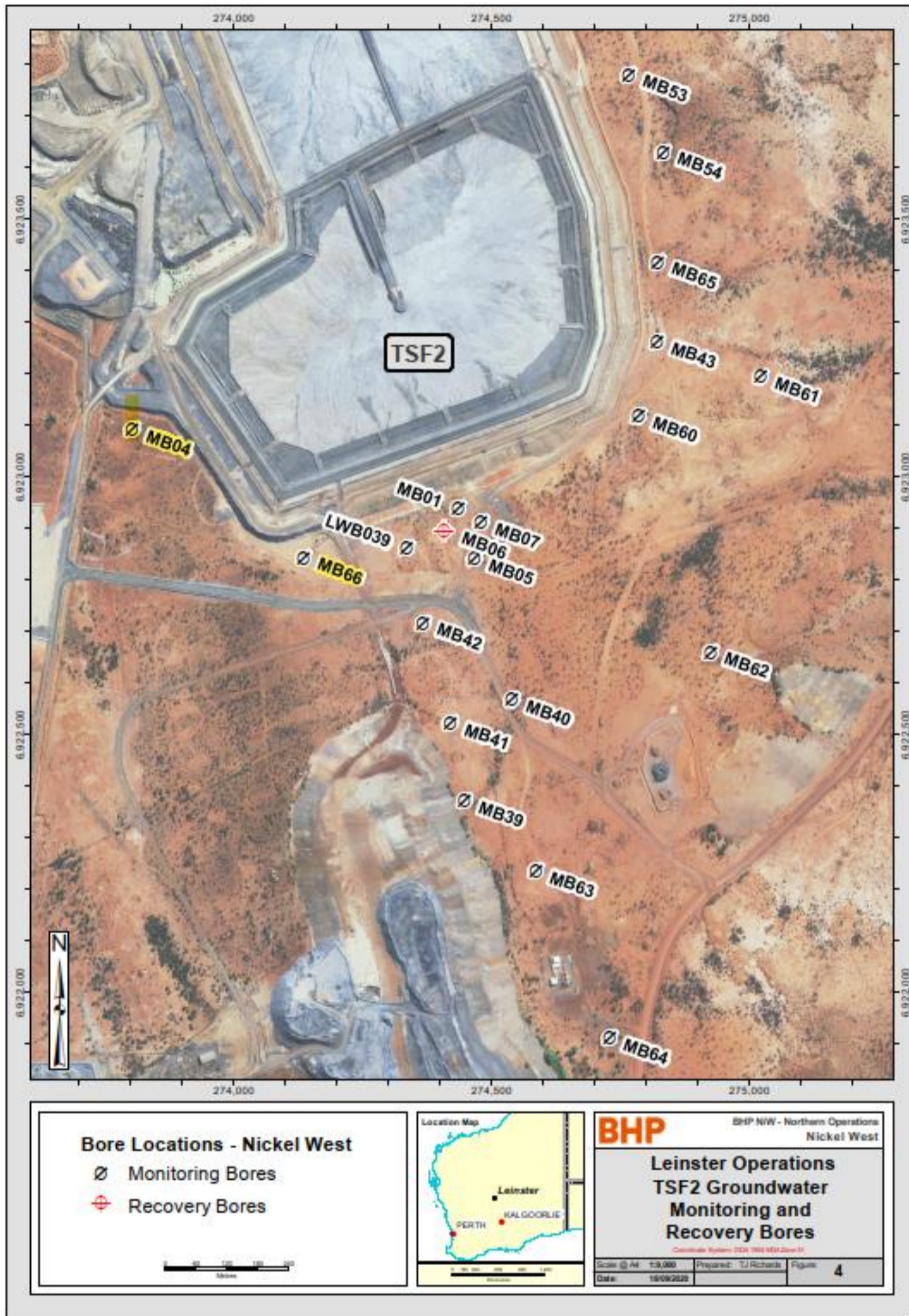
Leinster Operations - Temporary Suspension - proposed administrative amendments to conditions of Licence L4612/1989/11

Condition No.	Current Condition	Proposed Condition	Reason												
8	<p>Stack sampling ports, platforms and access ways</p> <p>The licence holder shall ensure that all installed emissions sampling ports, platforms and access ways on the stacks and ducting at the premises are maintained for the purpose of emission sampling</p>	<p>Stack sampling ports, platforms and access ways</p> <p>During operational periods the licence holder shall ensure that all installed emissions sampling ports, platforms and access ways on the stacks and ducting at the premises are maintained for the purpose of emission sampling</p>	<p>Proposed inclusion of “During operational periods” to clarify that this condition only applies during operational periods.</p> <p>To ensure consistency across the NiW business, the definition applied to the NiW Kalgoorlie Licence is proposed:</p> <p><i>“during operation – Any period of time the Premises is undertaking processing operations in accordance with its EP Act operating Licence”</i></p>												
9	<p>Atmospheric discharge monitoring</p> <p>The licence holder shall at the frequency stated in Table 2, take representative samples of the parameters stated in Table 2, from the discharge point stated in Table 2, under normal operating conditions in accordance with Australian Standard AS4323.1</p> <p>Table 2: Atmospheric discharge monitoring requirements</p> <table border="1"> <thead> <tr> <th>Discharge point</th> <th>Frequency</th> <th>Parameters</th> </tr> </thead> <tbody> <tr> <td>Process plant dryer stack</td> <td>Annually</td> <td>sulfur dioxide (SO₂), nickel, cadmium, arsenic, chromium, copper, lead, zinc, mercury, vanadium and particulates.</td> </tr> </tbody> </table>	Discharge point	Frequency	Parameters	Process plant dryer stack	Annually	sulfur dioxide (SO ₂), nickel, cadmium, arsenic, chromium, copper, lead, zinc, mercury, vanadium and particulates.	<p>Atmospheric discharge monitoring</p> <p>During operational periods the licence holder shall at the frequency stated in Table 2, take representative samples of the parameters stated in Table 2, from the discharge point stated in Table 2, under normal operating conditions in accordance with Australian Standard AS4323.1</p> <p>Table 2: Atmospheric discharge monitoring requirements</p> <table border="1"> <thead> <tr> <th>Discharge point</th> <th>Frequency</th> <th>Parameters</th> </tr> </thead> <tbody> <tr> <td>Process plant dryer stack</td> <td>Annually</td> <td>sulfur dioxide (SO₂), nickel, cadmium, arsenic, chromium, copper, lead, zinc, mercury, vanadium and particulates.</td> </tr> </tbody> </table>	Discharge point	Frequency	Parameters	Process plant dryer stack	Annually	sulfur dioxide (SO ₂), nickel, cadmium, arsenic, chromium, copper, lead, zinc, mercury, vanadium and particulates.	<p>Proposed inclusion of “During operational periods” to clarify that this condition only applies during operational periods.</p> <p>To ensure consistency across the NiW business, the definition applied to the NiW Kalgoorlie Licence is proposed:</p> <p><i>“during operation – Any period of time the Premises is undertaking processing operations in accordance with its EP Act operating Licence”</i></p>
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			<p>sufficient to monitor southerly mounding associated with the TSF.</p> <p>(Refer to Appendix 1)</p>																		
27	<p>TSF visual inspections</p> <p>The licence holder shall undertake visual inspections of the operational TSFs at least once every 12 hours. As a minimum the following shall be inspected:</p> <p>(a) Tailings delivery lines; (b) Return water lines; (c) Tailings deposition; (d) Ponding on the surface of the TSF; (e) Internal embankment freeboard; and (f) The external walls of the TSF.</p>	<p>TSF visual inspections</p> <p>The licence holder shall undertake visual inspections as per table:</p> <table border="1"> <thead> <tr> <th>Scope of inspection</th> <th>Type of inspection</th> <th>Frequency of inspection when operational*</th> <th>Frequency of inspection when non-operational</th> </tr> </thead> <tbody> <tr> <td>Tailings delivery lines</td> <td>Visual</td> <td rowspan="6">12 hourly</td> <td rowspan="6">24 hours</td> </tr> <tr> <td>Return water lines</td> <td>Visual</td> </tr> <tr> <td>Tailings deposition</td> <td>Visual</td> </tr> <tr> <td>Ponding on the surface of TSF</td> <td>Visual</td> </tr> <tr> <td>Internal embankment freeboard</td> <td>Visual</td> </tr> <tr> <td>External walls of TSF</td> <td>Visual</td> </tr> </tbody> </table> <p>*Operational means active use of infrastructure</p>	Scope of inspection	Type of inspection	Frequency of inspection when operational*	Frequency of inspection when non-operational	Tailings delivery lines	Visual	12 hourly	24 hours	Return water lines	Visual	Tailings deposition	Visual	Ponding on the surface of TSF	Visual	Internal embankment freeboard	Visual	External walls of TSF	Visual	<p>During temporary suspension deposition of tailings will no longer occur. Water will continue to be moved throughout the processing plant, TSFs and water storage area to manage weather events. No deposition of tailings reduces the risk profile of the operation, and therefore BHP proposes a reduced frequency of visual inspections as per the proposed table.</p> <p>Changes to the frequency or visual inspection have been reviewed by BHP NiW's Engineer of Record and endorsement of the alternative regime is supported. Refer to Appendix 2</p>
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50	<p>Used tyre storage</p> <p>Used tyre storage</p> <p>50. The licence holder must ensure that the waste types specified in Table 7 are only subjected to the corresponding process(es), subject to the corresponding process limits and/or specifications.</p> <p>Table 7: Waste processing</p> <table border="1"> <thead> <tr> <th>Waste type</th> <th>Process(es)</th> <th>Process limits and/or specifications¹</th> </tr> </thead> <tbody> <tr> <td>Used tyres</td> <td>Storage</td> <td> <ul style="list-style-type: none"> Not more than 500 tyres must be stored at one time Used tyre stacks shall not exceed 60 m² in area and 3.7 metres in height; Used tyres must be stacked on their side walls or if stored on their treads, area baled with a securing device made from a non-combustible material; tyre stacks are not less than 2.5m from any other tyre stacks; Piles of 4 stacks shall not be less than 18m from other piles; firefighting equipment stored onsite is capable of controlling and extinguishing a tyre fire; water and other liquid waste that may result from the fighting of tyre fires, is captured by bunding to prevent that waste entering the environment. </td> </tr> </tbody> </table> <p>Note 1: Additional details on storage of tyres are set out in DFES Guidance Note: GN02: Bulk storage of rubber tyres including shredded and crumbed tyres (DFES November 2019)</p>	Waste type	Process(es)	Process limits and/or specifications ¹	Used tyres	Storage	<ul style="list-style-type: none"> Not more than 500 tyres must be stored at one time Used tyre stacks shall not exceed 60 m² in area and 3.7 metres in height; Used tyres must be stacked on their side walls or if stored on their treads, area baled with a securing device made from a non-combustible material; tyre stacks are not less than 2.5m from any other tyre stacks; Piles of 4 stacks shall not be less than 18m from other piles; firefighting equipment stored onsite is capable of controlling and extinguishing a tyre fire; water and other liquid waste that may result from the fighting of tyre fires, is captured by bunding to prevent that waste entering the environment. 	<p>Table 7 to be changed to Table 8, and condition 50 to reference table 8</p> <p><i>"The licence holder must ensure that the waste types specified in Table 8 are only subjected to the corresponding process(es), subject to the corresponding limits and/or specification"</i></p>	<p>Appears to be an error on current Licence, table 7 is repeated at both condition 32 and condition 50.</p> <p>Condition 32 – Irrigation emission limits – refers to Table 7</p>												
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51	<p>Construction of a paste plant</p> <p>The licence holder shall ensure that each item of infrastructure or equipment specified in column 1 of Table 8 is designed and constructed in accordance with the requirements specified in column 2 of Table 8.</p> <p>Table 8: Infrastructure or equipment requirements (construction)</p> <table border="1"> <thead> <tr> <th>Column 1</th> <th>Column 2</th> </tr> <tr> <th>Infrastructure</th> <th>Requirements</th> </tr> </thead> <tbody> <tr> <td>Areas subject to construction activities for paste plant</td> <td> <ul style="list-style-type: none"> Minimise dust by using water carts and/or sprinklers to wet down work areas. </td> </tr> <tr> <td>Paste Plant hardstand area</td> <td> <ul style="list-style-type: none"> To a minimum depth of 500mm, compacted oxide layer; graded towards runoff collection sump; Location as shown in Schedule 1, Figure 2 as Venus Surface Infrastructure Bunding around perimeter of 1m +/-0.25m Slope of entry point designed to ensure containment of any run-off water to the sump </td> </tr> <tr> <td>Paste Plant run off collection sump</td> <td> <ul style="list-style-type: none"> 30m by 60m in area; 1.46m depth Clay lined to a minimum permeability of 1 x 10⁻⁸m/s With a retention capacity of at least 2640m³ </td> </tr> <tr> <td>Run off water and past plant pipelines</td> <td> <ul style="list-style-type: none"> Constructed with secondary containment infrastructure where above ground Spills and rupture to drain towards a catch pit </td> </tr> <tr> <td>Paste plant bund walls</td> <td> <ul style="list-style-type: none"> To a minimum height of 1m above the base of the paste plant hardstand area; except through vehicle access route. </td> </tr> <tr> <td>Sprinklers within hard pad area</td> <td> <ul style="list-style-type: none"> Stockpiles of sand and tailings to be within spray area for dust suppression </td> </tr> <tr> <td>Diversion channels and drains</td> <td> <ul style="list-style-type: none"> Drain incidental stormwater away from the bund walls and the pad access area </td> </tr> </tbody> </table>	Column 1	Column 2	Infrastructure	Requirements	Areas subject to construction activities for paste plant	<ul style="list-style-type: none"> Minimise dust by using water carts and/or sprinklers to wet down work areas. 	Paste Plant hardstand area	<ul style="list-style-type: none"> To a minimum depth of 500mm, compacted oxide layer; graded towards runoff collection sump; Location as shown in Schedule 1, Figure 2 as Venus Surface Infrastructure Bunding around perimeter of 1m +/-0.25m Slope of entry point designed to ensure containment of any run-off water to the sump 	Paste Plant run off collection sump	<ul style="list-style-type: none"> 30m by 60m in area; 1.46m depth Clay lined to a minimum permeability of 1 x 10⁻⁸m/s With a retention capacity of at least 2640m³ 	Run off water and past plant pipelines	<ul style="list-style-type: none"> Constructed with secondary containment infrastructure where above ground Spills and rupture to drain towards a catch pit 	Paste plant bund walls	<ul style="list-style-type: none"> To a minimum height of 1m above the base of the paste plant hardstand area; except through vehicle access route. 	Sprinklers within hard pad area	<ul style="list-style-type: none"> Stockpiles of sand and tailings to be within spray area for dust suppression 	Diversion channels and drains	<ul style="list-style-type: none"> Drain incidental stormwater away from the bund walls and the pad access area 	Remove from licence	Paste plant is not operational and no longer required.
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52	The licence holder must not depart from the requirements specified in Column 2 of Table 8 except where such departure does not increase risks to the public health, public amenity or the environment.																				
53	Subject to Condition 52 and not more than 30 days after completing the construction works for the paste plant, and prior to commissioning of the same, the licence holder must provide to the CEO certification from a suitably qualified Engineer confirming each item of infrastructure or component of infrastructure specified in Column 1 of Table 8 has been constructed with no material defects and to the requirements specified in Column 2 of Table 8																				
54	Where a departure from the requirements specified in Column 2 of table 8 occurs, the licence holder must provide to the CEO a description of, and explanation for, the departure together with the report required by Condition 53.																				
55	<p>Paste plant run-off</p> <p>The licence holder shall maintain the paste plant runoff collection sump such that sludge and run off water is periodically removed to ensure a retention capacity equalling 2,640m³ is maintained prior to the commencement of 1 December each year.</p>																				

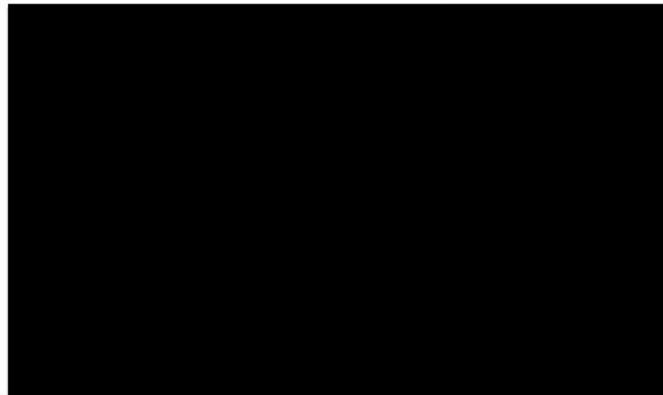
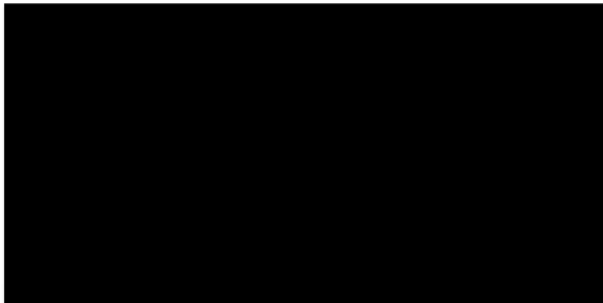
Appendix 1 – Monitoring Bore locations



Appendix 2 – Record of Engineer – support documentation



Our ref: PS218743-WSP-PER-MNG-LTR-0003 Rev0 Inspection frequency
15 November 2024



Review of changes in inspection frequency on TSF failure modes - Leinster TSFs

1. Introduction

BHP Nickel West Pty Ltd (NiW) have announced that the NiW operations will enter a period of temporary suspension from late 2024 until February 2027 when the situation will be reviewed, and a decision will be made on the future of the operations. As part of temporary suspension, NiW are preparing a submission to the Department of Water and Environmental Regulation (DWER) for an operating licence amendment. A request to revise the current inspection frequency, related to the tailings storage facility (TSF) at Leinster, will form part of the application. NiW has subsequently requested WSP Australia Pty Ltd (WSP), who is currently engaged by NiW as Engineer of Record (EoR) for its TSF, to review the potential impacts of changes in inspection frequency on the risk profile of the TSF at Leinster.

As part of general improvements to the TSFs and for compliance with the Global Industry Standard on Tailings Management (GISTM), NiW has commenced with several projects and maintenance activities, mainly related to water management on and around the TSF. The Leinster TSF comprises TSF 2 (inactive), TSF 3 Cell AB (inactive), TSF 3 Cell CD (inactive), TSF 3 Cell E (active) and TSF 3 Cell F (active).

This document summarises a review undertaken by WSP to assess the potential impacts of the proposed changes to inspection frequency on the credible failure modes of the TSF, taking account of the project work currently being undertaken.

2. Proposed change in inspection frequency

Table 2.1 presents the proposed changes in inspection frequency by Nickel West during the period of temporary suspension of operations. The proposed changes are compared against the current licence requirements that are relevant to the management and operation of the TSF.

Table 2.1 Proposed changes to inspection frequency of the TSF– Licence L4612/1989/11

Scope of inspections	Type of inspection	Frequency of inspection	
		Active (existing licence requirement)	Inactive (temporary suspension)
Tailings delivery pipelines	Visual	12 hourly	24 hourly*, or Inspections of embankments, decant pipes and freeboard following significant rainfall or seismic events (a 20%AEP in 24 hours** or earthquake magnitude >3.5 event)
Return water lines	Visual	12 hourly	
Tailings deposition	Visual	12 hourly	
Ponding on the surface of TSF	Visual	12 hourly	
Internal embankment freeboard	Visual	12 hourly	
External walls of the TSF	Visual check of physical integrity	12 hourly	

*the tailings/return water pipelines will be used during temporary suspension to pump water from dewatering activities to Harmony Open Pit. Once the activity ceases, a further review of the inspection frequency can be undertaken.

**for Leinster, the 20% AEP in 24 hours = 1 in 5 AEP = 63 mm rainfall in 24 hours

In order to assess the potential impacts of changes in inspection frequency on the failure modes related to the TSFs, a review of the failure modes was undertaken as discussed in the following sections of this letter.

3. Failure modes analysis

In 2022, WSP undertook a failure modes analysis (FMA) of the tsfs at Leinster. The assessment identified the following potential failure modes, with a number of causes and sub causes identified under each of failure modes:

- Overtopping of the perimeter embankments
- Internal erosion (piping) failure
- Global instability (slope failure) of the perimeter embankments

A review of the potential impacts of changes to the inspection frequency on the failure modes listed above is discussed in Section 4. A review of the FMA is scheduled for late 2024, and it will be upgraded to a failure modes and effects analysis (FMEA), but the outcomes are not expected to result in significant changes to the failure modes assessed in the current FMA.

4. Impacts of changes in inspection frequency on failure modes

The impacts of changes in the inspection frequency of TSF 2/3 (including TSF 2, TSF 3 Cells AB, CD, E and F), as proposed in Table 2.1, are summarised below:

- Overtopping risk: TSF 2 and all the cells of TSF 3 can accommodate the 1:10,000 AEP storm event (extreme loading condition) without risk of overtopping. **Therefore, the proposed changes in inspection frequency (which includes inspections after significant rainfall events) would not impact the failure mode or change the risk profile of the TSF.**
- Piping: Since there will not be water against the embankment for extended periods (>3 months) without inspections being undertaken, **the proposed changes in inspection frequency (which includes inspections after significant rainfall events) would not impact the failure mode or change the risk profile of the TSF.**
- Embankment stability: The embankments meet the minimum factor of safety requirements under static and post-seismic loading conditions. The phreatic surface across TSF 2/3 is expected to drain down during temporary suspension, furthermore, reducing the risk of failure. Ongoing monitoring of the phreatic surface will be undertaken as part of the EoR role, and if anomalies are identified or detected, investigations, including inspections by the EoR may be



undertaken. One of the potential sub-causes of embankment instability is excessive erosion of the embankment due to pipeline failure. Since the water transfer pipelines to Harmony Open Pit will run along the western flank of TSF 2/3, daily (24 hourly) inspections of the pipeline route along that section of TSF 2/3 is considered adequate and therefore would not impact the risk profile of the TSF, especially since TSF 2/3 is buttressed with waste rock and the erosion risk is therefore managed. Once the pumping of water via the pipeline to Harmony Open Pit ceases, a review of the daily inspection frequency could be considered. **Therefore, the proposed changes in inspection frequency would not impact the failure mode or change the risk profile of the TSF.**

5. Closing comments

A review of the potential changes in inspection frequency, as proposed by Nickel West and summarised in Table 2.1, was undertaken. WSP, as Engineer of Record, recommends that changes to the inspection frequency should only be implemented once NiW enters temporary suspension at the Leinster operations.

In addition, WSP recommends that should any deposition occur, or the pipelines become active during temporary suspension, the active scenario as outlined in Table 2.1, should be adhered to.

Additional to the review of inspection frequency, WSP recommends that NiW staff on site during the period of temporary suspension undergo training related to TSF operations and management. This will support the NiW tailings specialists in the identification and assessments of TSF issues while they are not on site.

We trust that this letter meets your requirements. However, please do not hesitate to contact us if you need any further clarification or elaboration.

