Government of **Western Australia**
Department of **Water and Environmental Regulation**

Annual Audit Compliance Report Form

Environmental Protection Act 1986, Part V Division 3

Once completed, please submit this form either via email to info@dwer.wa.gov.au, or to the below postal address:

Department of Water and Environmental Regulation
Locked Bag 10
Joondalup DC WA 6919

Section A – Licence details			
Licence number:	L8654/2012/2	Licence file number:	DER2015/001584-1~5
Licence holder name:	Mineral Resources Limited		
Trading as:	Mineral Resources Limited		
ACN:	118 549 910		
Registered business address:	Phil's Creek Iron Ore Project Mining Tenement M47/1359, M47/1421 and Miscellaneous Licence L47/336 Newman WA 6753		
Reporting period:	01 / 07 / 2023 **to** 30 / 06 / 2024		

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)

☐ Yes – please complete:
- section C;
- section D (if required); and
- sign the declaration in Section F.

☒ No – please complete:
- section C;
- section D (if required);
- section E; and
- sign the declaration in Section F.

Section C – Statement of actual production

Provide the actual production quantity for this reporting period. Supporting documentation is to be attached.

Prescribed premises category	**Actual production quantity**
(5) Processing or beneficiation of metallic or non-metallic ore	0 tonnes
(85) Sewage facility	28 cubic meters per day (annual daily average)
(89) Putrescible Landfill Site	0 tonnes

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
(85) Sewage facility	10,165 cubic meters (annual total)
(89) Putrescible Landfill Site	0 tonnes

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:	7	Date(s) of non-compliance:	28/06/2024, 22/03/2024,15/12/2023, 30/10/2023

Details of non-compliance:

During the reporting period, quarterly monitoring for the two Wastewater Treatment Plants (Phil's Creek and K Block WWTPs) at the Phil's Creek Project recorded concentrations exceeding the emission limits to land specified in Condition 7, Table 4.

Table 1 and Table 2 below summarise water quality monitoring results for the Phil's Creek and K Block WWTP's. Limit exceedances are indicated by shaded cells.

Table 1: Phil's Creek WWTP discharge water quality monitoring results.

Parameter	Licence Limit	Sample Date			
		27/09/2023	7/12/2023	22/03/2024	28/06/2024
Biochemical Oxygen Demand	20mg/L	20	NS	63	26
Total Suspended Solids	30mg/L	88	28	55	47
Total Nitrogen	40 mg/L	39	44	24	34
Total Phosphorus	12 mg/L	14	14	8.7	13
pH	6-9 pH units	8.6	8.5	8.4	8.4
E.coli	30 cfu/100mL	2 600	<10	11 000	<10

NS= Not sampled

Table 2: K Block WWTP discharge water quality monitoring results

Parameter	Licence Limit	Sample Date			
		27/09/2023	7/12/2023	22/03/2024	28/06/2024
Biochemical Oxygen Demand	20mg/L	11	NS	9.6	81
Total Suspended Solids	30mg/L	10	15	5	26
Total Nitrogen	40 mg/L	28	35	34	57
Total Phosphorus	12 mg/L	9	7.4	7.6	14
pH	6-9 pH units	8.7	8.4	8.5	8.1
E.coli	30 cfu/100mL	10	<10	210	24 000

Section E – Details of non-compliance with licence condition

What was the actual (or suspected) environmental impact of the non-compliance?

NOTE – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.

The treated wastewater was discharged to the approved spray field area. No significant environmental impacts are likely to have occurred considering the low irrigation volumes for the annual period (averaged 43% of approved daily discharge) and the relatively minor exceedances recorded. This is supported by ongoing visual inspections.

Cause (or suspected cause) of non-compliance:

The Phil's Creek WWTP operates a 40ft and 20ft submerged aerated filtration (SAF) system relying upon microbes to reduce the wastewaters biochemical oxygen demand and nutrient load. Being a biological treatment process, system performance is dependent upon a variety of variables including consistent organic loads. The initial treatment is reliant on effective biological processes as facilitated by healthy aerobic bacterial activity. Fluctuations in process variables can result in shock to the system, creating unfavorable environmental conditions for the microbial population and affect performance.

The 40ft SAF is an ageing unit that has originally been the main source for sewage treatment at Phil's Creek Camp. Due to the plants age, the maintenance and monthly site-based servicing is not adequate to keep the plant running to the standard that will treat the sewage to the required discharge quality. The unit needs extensive internal refurbishment which has been outlined as cost prohibitive when considering the age of the plant. The work would be required to be carried out at suitable workshop facilities unavailable on site and therefore offsite transport would be required.

Each non-compliance has been investigated and the following causes were associated with the exceedance in parameters:

27/09/2023
The high Total Suspended Solids (TSS) is potentially due to filamentous bacteria, lack of settling time or a potential high sludge age, consequently, effecting the efficiency of the WWTP. The spike within the Biochemical Oxygen Demand (BOD) may be associated with the high TSS and sludge age with dead and dying microbes reintroducing organics back into the water, in turn elevating the BOD.

A malfunctioning blower resulting in a loss of turbulence identified in the Phils Creek WWTP aerobic zone impacting upon the absorption of oxygen into the wastewater and impacting the organics: nutrient: oxygen ratios delivered to the microbe cultures. The loss of turbulence was likely due to damaged diffusers or manifold.

The replacement blower malfunctioned and was also replaced. Further investigation highlighted possible cause of blower failure was due to power surges. A surge protector was installed to help prevent motor damage during surges.

7/12/2023
Changes to the number of residents at the Phil's Creek camp has led to a decrease in the organic loads delivered to the treatment plants 20' and 40' SAF units. The total volume is shared across both treatment plants resulting in a reduction in carbon source availability. This has led to a reduction in microbial activity and performance has in turn decreased.

22/03/2024
Following a change in business priorities a decision was made which saw occupancy rates at

Section E – Details of non-compliance with licence condition

Phil's Creek camp increase in a very short period of time. The sudden increase in camp occupancy rates has led to an increase in organic loads delivered to the treatment plant. With the influx of volume, the plants biological biome has not had sufficient time to equilibrate and effectively treat the wastewater to the required levels.

28/06/2024
Reduced dosing of effluent with PAC flocculant due to incorrect maintenance during the replacement of chemical tanks. In the first instance the dosing pump was not bled correctly leading to an air blockage preventing sufficient dosing. The second issue occurred when the chemical drum was replaced, and the dosing line snapped. The dosing had not occurred during the period between identification and repair. Both instances resulted in insufficient chemical precipitation.

A reduced aeration function to the 20ft and 40ft SAF units was observed during a service visit by the third-party contractor (Centurion Wastewater Services). The contractor was able to adjust movement in the 20ft SAF aeration tank to overcome the issue and reintroduce sufficient aeration back into the system. The 40ft SAF had a heavily blocked floating media filtration system preventing any aeration from occurring and leading to an anoxic environment. Consequently, the system was inadequately treating the wastewater to the required level. The contractor tried to manually unblock the aeration media system but could not completely unblock to the extent that would render the plant operable. A decision was made to divert the flow to the remaining plant to prevent the 40ft SAF plant from becoming septic and further impacting discharge water quality.

Additionally, increased number of residents has also placed additional pressure onto the remaining treatment plants. The increased load, coupled with the aeration and PAC flocculant issues has increased the potential for the elevated results to occur and a limit exceedance has resulted.

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

The following maintenance works were undertaken:

27/09/2023

- Blower malfunction was identified and replaced on the 26/09/2023. The newly fitted blower failed again and had to be replaced on the 16/10/2023Installation of surge protector to manage fluctuating power has potentially caused blower failures to occur.
- Undertook electrical inspections of a suspected faulty breaker in the control panel.
- Undertook preventative maintenance and completed recommended tasks as a priority.
- Engaged Tristar Water Solutions to review the results and provide recommendations for the exceedances.
- Investigated exceedances, initiating plans to replace the system with a fit for purpose treatment solution
- Replacement diffuser was installed in the Phil's Creek WWTP.
- Internal increase in monitoring frequency to monitor/manage trends in water quality.
- Manual chlorine dosing to rectify the low free chlorine levels and reduce *E. coli* levels.

7/12/2023

- Management review of the WWTP infrastructure to investigate the feasibility of short-term and long-term options available to mitigate future licence limit exceedance.
- The recommendation from contractor was to reduce the plants operating and focus on one plant to treat sewage. Reliant on camp occupancy reaching a specific number of personnel housed in the camp.

Section E – Details of non-compliance with licence condition	
22/03/2024 • Site management undertook a review of options available and have finalised the WWTP strategy for Phil's Creek Camp. The strategic option to replace the ageing 40'SAF unit was assessed as the most likely to improve discharge water quality. This is due to be undertaken by the end CY2024. **28/06/2024** • Correct bleeding of the pump and replacement of damaged pipeline. • Approved capital raised for a recommended wastewater treatment plant, a sequential batch reactor (SBR). The SBR is designed to treat the maximum volume of sewage that Phil's reek camp could produce and to the standard required by the Licence. The SBR has been described as straightforward for new operators or maintenance personnel to manage and maintain. • An investigation is being completed for a program with the ability to create an automated escalation process based on daily observations and readings. The intent will see a subject matter expert engaged when specific thresholds are met, such that timely advice can the provided to plant maintenance personnel in efforts to keep effluent quality at higher standards than currently observed.	
Was this non-compliance previously reported to DWER?	
☒ Yes, and	
☐ Reported to DWER verbally	Date: / /
☒ Reported to DWER in writing	Date: 29/07/2024, 17/04/2024, 09/02/2024, 30/09/2023

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:	27	Date(s) of non-compliance:	05/01/2024 & 21/01/2024
Details of non-compliance:			
Failure to provide notification of non-compliance within 21 days – due to administrative error. The Phil's Creek WWTP's recorded concentrations exceeding the emission limits to land specified in Condition 7, Table 4 on 5th and 21st of January. The CEO was notified of the breach on 9 February 2024.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
The non-compliance was an administrative error and did not result in any environmental impact.			
Cause (or suspected cause) of non-compliance:			
Failure to notify the CEO within the timeframe was an administrative error.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
The CEO was notified on 9 February 2024. Notification included details of measures taken to prevent the recurrence of the incident.			
Was this non-compliance previously reported to DWER?			
☒ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☒ Reported to DWER in writing		Date: 09/02/2024	

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:	15	Date(s) of non-compliance:	31/12/2023
Details of non-compliance:			
Monitoring of emissions did not meet the frequency requirements specified in Table 7 for biochemical oxygen demand (BOD).			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Actual or suspected environmental impact has not occurred as a result of the monitoring not being undertaken within the Quarter 2 period. Monitoring was undertaken on 23/11/2024, with results found to be below the parameter limits (<5mg/L for both Phil's Creek WWTP and K Block WWTP).			
Cause (or suspected cause) of non-compliance:			
A sample was collected and supplied to the NATA accredited laboratory; however, the volume was insufficient to enable analysis of biochemical oxygen demand (BOD). Additional samples were subsequently collected for dispatch to the NATA laboratory, however, as a result of end of year business closures the samples were unable to be delivered to the laboratory by the courier.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
• Field identification of the sample point. • Communicated sampling to be completed in line with AS/NZS 5667.1 to contractor and staff overseeing monitoring.			
Was this non-compliance previously reported to DWER?			
☒ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☒ Reported to DWER in writing		Date: 09/02/2024	

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:	21	Date(s) of non-compliance:	7/03/2024
Details of non-compliance:			
While reviewing the surface water monitoring data for the AER it was identified silver (Ag) and nitrate were not monitored in the ambient surface water concentrations during the spot sample for flow events at SW1, SW2, and SW3.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Actual or suspected environmental impact has not occurred as active mining has ceased within Phil's Creek Mine Site.			
Cause (or suspected cause) of non-compliance:			
Administrative error with failure to include silver and nitrate within the sample analysis suite for the Ambient Surface Water monitoring.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
Contact was made with the contracted Laboratory to rectify the analysis suite to include silver and nitrate for future monitoring of ambient surface water concentrations.			
Was this non-compliance previously reported to DWER?			
No, and			
☐ Reported to DWER verbally		Date: / /	
☐ Reported to DWER in writing		Date	

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[1]. I / We consent to the Annual Audit Compliance Report being published on the Department of Water and Environmental Regulation's (DWER) website.			
Signature[2]:	[redacted]	Signature:	
Name: (printed)		Name: (printed)	
Position:		Position:	
Date:	29/8/2024.	Date:	
Seal (if signing under seal):			

[1] 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.

[2] 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.