



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, 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:	L8435/2010/3	Licence file number:	2011/000299
Licence holder:	GSM Mining Company Pty Ltd		
Trading as:	GSM Mining Company Pty Ltd		
ACN:	165 235 030		
Registered address:	Level 5, 50 Colin Street, West Perth, Western Australia, 6005		
Reporting period:	01/01/2018 to 31/12/2018		

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 at 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	1,778,430 tonnes/year

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
6	7,014,616 kL/year
64	2,845 tonnes/year

Section D – Statement of Actual Part 2 Waste Discharge Quantity

54

123 m³/day**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:	3.7.1 Ambient Groundwater Quality Monitoring	Date(s) of non-compliance:	February 2018 May 2018 August 2018 November 2018
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Details of non-compliance:

- During Q1 the following monitoring bores were not sampled due to unforeseen lack of sampling personnel (refer email from Jeffrey Yates dated 1 March 2018)

MB13	MB27D	MB27S	M30S	MB32D
MB32I	MB32S	MB40D	MB46D	MB46I
MB62I	MB62S	MB63D	MB63I	MB63S
MB64D	MB64I	MB64S	MB65D	MB65S
MB67D	MB67I	MB67S	PB3A	

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.

Nil Environmental Impact.

GSM has an extensive groundwater monitoring network of nested bores surrounding the TSF that have been installed progressively throughout the life of the facility. Until the most recent licence amendment which approved a reduction in monitoring frequency; the entire network of up to 67 monitoring bores has been sampled quarterly for up to 24 years at each location.

Given the extremely comprehensive historical dataset available, and no evidence of negative trends in water quality, GSM acknowledges a breach of licence conditions in Q1 2018. The overall ability of GSM and the DWER to assess the groundwater quality surrounding the TSF has not been compromised.

Cause (or suspected cause) of non-compliance:

As above, the failure to sample in Q1 is a result of internal staffing issues, which GSM acknowledges going forward this is not an acceptable reason to not meet the requirements of the Licence. Licence compliance in years preceding and quarters following this omission has been to a high level, so GSM requests that DWER views this as a mitigating factor in assessing this non-compliance.

As detailed on the AER any non-sampling where water levels are depressed in individual bores, is due to active seepage management in accordance with the TSF Seepage Management Plan actively abstracting seepage affected groundwater from the interception trench and production bores, and is NOT considered a non-compliance.

Section E – Details of Non-Compliance with Licence Condition

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

For Q2 2018 onwards, all compliance monitoring associated with L8435/2010/3 has been conducted by a contractor to ensure all monitoring is completed in a timely manner by suitably qualified personnel.

Was this non-compliance previously reported to DWER?

☒ Yes, and

☐ Reported to DWER verbally

Date: / /

☒ Reported to DWER in writing

Date: 01 / 03 / 2018

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:	2.5.2 Emission Limits to Land	Date(s) of non-compliance:	2/2/18 20/3/18 20/6/18 15/11/18 12/12/18
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Details of non-compliance:

N1 notifications were submitted to DWER on each of the dates above with regard to the limit breaches shown in blue in the summary table below. With regard to the failure to sample in February, DWER was notified via email on 1 March 2018.

	E.Coli CFU/100mL	Biochemical Oxygen Demand mg/L	pH - Lab SU	Total Suspended Solids mg/L	Total Nitrogen as N mg/L	Total Phosphorus as P mg/L	Total Dissolved Solids (Inorganic) mg/L	Total Chlorine by DPD Colourimetric mg/L
DWER Licence Limit	1000	20	6.5-8.5	30	50	12	-	-
Sample Location	Sample Date							
WWTPSF	23/01/2018	83000	16	7.45	22	34.2	4.1	372
WWTPSF	#							
WWTPSF	13/03/2018	36000	6	6.63	<5	9.2	0.96	385
WWTPSF	10/04/2018	<1	<2	6.67	<5	20.7	2.06	445
WWTPSF	08/05/2018	<1	<2	7.09	<5	6.8	0.68	400
WWTPSF	12/06/2018	~3	22	7	748	71.5	33.2	398
WWTPSF	12/07/2018	<1	<2	7.56	12	39.9	4.72	396
WWTPSF	09/08/2018	<1	<2	7.52	<5	16.7	0.15	355
WWTPSF	06/09/2018	<1	<2	7.37	14	28.2	1.55	388
WWTPSF	04/10/2018	<1	<2	7.39	10	31.7	1.97	3311
WWTPSF	06/11/2018	17	18	7.59	33	34.7	11.5	511
WWTPSF	04/12/2018	3900	90	7.34	401	20.5	8.36	366

= DWER Licence Limit Breach

Value of note (approaching Licence Limit)

mg/L = milligrams per litre

CFU/100 mL = colony forming units per 100 millilitres

** denotes where field pH value has been adopted

Laboratory provider changed in 2018; chlorine and phosphorous methods reported differently to previous samples

no sample taken in February 2018

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.

Nil Environmental Impact.

Following a number of licence limit breaches at this licenced facility, GSM conducted an internal investigation as to the nature of the breaches, and created the below conceptual site model to characterise risk to human health and the environment as a result of water being discharged to the sprayfield area at levels in excess of licence limits. A comprehensive memo was provided to DWER as part of a licence amendment currently under assessment, and facility operation over the past 5 years was discussed with a DWER investigation officer during a site visit on 14 August 2018.

Potential Source	Contaminant of Potential Concern	Potential Exposure Pathway	Potential Receptor	Discussion	S-P-R Linkage Status
Treated wastewater applied to sprayfield	Pathogens Nutrients	Human direct contact with soil	Site workers coming into direct contact with soils during maintenance or monitoring activities	Soil samples to date have not been tested for pathogens.	SPR linkage is considered to be partially complete, however GSM procedures in place mean that soil works are infrequent, and unlikely to result in direct contact. Risk controls (hygiene and PPE requirements) are deemed adequate to protect workers from exposure.
		Human direct contact with wastewater and/or wetted soil	Site workers coming into direct contact with soils during maintenance works	The current operating method of the sprayfield is to discharge to one half of the area at a time to allow periodic drying. Maintenance activities are conducted only on dried soils using predominantly mechanical methods (bobcat) or shovels on some occasions. Evaporation rates in the Goldfields region are high (2,600 mm/yr on average [AECOM, 2016])	SPR linkage is considered to be incomplete. Contact with wet soil is eliminated by operational requirements and in-house procedures.
		Leaching of nutrients and pathogens to underlying groundwater and subsequent abstraction for non-potable use	Non-potable users of shallow groundwater	Groundwater separation exceeds the minimum 2 m recommended to avoid water logging and allow for filtration (DoV, 2008). There is no abstraction of groundwater undertaken within 2 km of the site.	SPR linkage considered incomplete.
Treated and partially treated wastewater within WWTP	Pathogens	Human direct contact with wastewater	Site workers coming into wastewater during maintenance or sampling activities	Contact with treated or partially treated wastewater could potentially occur during environmental sampling activities (i.e licence compliance monitoring) or maintenance activities.	SPR linkage is considered to be partially complete. In-house procedures and adherence to PPE requirements limit the likelihood of exposure.

Cause (or suspected cause) of non-compliance:

The majority of the non-compliances are a result of a build-up of filamentous bacteria. The system appears to be sensitive to inputs of grease from the wastewater stream.

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



- GSM has taken the following actions throughout 2018 to assess water quality at the facility
- Sludge blankets removed via vac truck as required (regular maintenance)
 - Foam in aeration tank treated with dosing of chlorine
 - Dosage line maintenance schedule increased
 - Grease trap in camp kitchen maintenance schedule (vac truck) schedule increased to reduce grease input to WWTP system
 - Ongoing engagement with wastewater contractors to improve system where possible

Section E – Details of Non-Compliance with Licence Condition	
Was this non-compliance previously reported to DWER?	
<input checked="" type="checkbox"/> Yes, and	
<input checked="" type="checkbox"/> Reported to DWER verbally	Date: 14 / 8 / 18
<input checked="" type="checkbox"/> Reported to DWER in writing	Date: 02/02/18 20/3/18 20/6/18 15/11/18 12/12/18

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 particular¹.

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

Signature ² :		Signature:	
Name: (printed)	Jeffrey Yates	Name: (printed)	Andrew Bywater
Position:	Coordinator: Sustainable Development	Position:	General Manager
Date:	27/2/2019.	Date:	27/2/2019
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.