



WATER USE LICENCE AUDIT 2019

ELANDSFONTEIN COLLIERY

ELANDSFONTEIN COLLIERY (PTY) LTD

DECEMBER 2019

LICENCE NUMBER: 04/B20G/CGI/3843

EXTERNAL IWUL AUDIT 2019

ELANDSFONTEIN COLLIERY

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REVISION AND AMENDMENTS

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EXECUTIVE SUMMARY

Geo Soil and Water cc (GSW) was appointed by Elandsfontein Colliery (Pty) Ltd (Elandsfontein) to assess and report on compliance with the Integrated Water Use Licence (IWUL), approved by the Department of Water and Sanitation (DWS) on 21 October 2015. (Licence No: 04/B20G/CGI/3843). The approved water uses include:

- Section 21 (c) of the Act: Impeding or diverting the flow of water in a watercourse;
- Section 21 (g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource; and
- Section 21 (i) of the Act: Altering the bed, bank. Course or characteristics of a watercourse.

On 23 July 2019, an amendment to the existing IWUL was approved by DWS to update the coordinates of the Western Opencast Pit as mining progressed, as well as to amend the restriction of activities from 500m to 41m from the boundary of a wetland.

The **scope** of the audit is to assess compliance with the conditions of the IWUL. The **purpose** of the audit is to ensure compliance with the requirement of the IWUL, to undertake annual external compliance audits. The **objective** of the audit is to:

- Establish the level of compliance with the conditions of the IWUL; and
- Provide the management of the Elandsfontein with information to initiation corrective action, where necessary or appropriate.

Initial documentation was obtained and reviewed in preparation for the audit. A checklist was prepared, based on the requirements of the IWUL. Subsequent to the initial checklist preparation and documentation review, a site visit was undertaken on 18 November 2019.

Compliance with the requirements of the IWUL was evaluated using pre-determined scoring criteria as described in Section 4.2. The results of the evaluation are provided in Section 5.2 and the findings are described in Section 5.3. Each condition in the IWUL was weighted equally in order to determine a compliance score. Utilising this scoring system, a total compliance score of **53.46%** was obtained for this audit.

The key findings of the audit are provided in Table 1.

Table 1: Summary of findings of the audit.

Finding Reference #	Finding
1	No exemption from GN 704 requirements, including mining activities and infrastructure within 100m or within the 1:100-year floodline, and the construction of haul roads with carbonaceous material.
2	Namane Resources (Pty) Ltd (Namane) bought Elandsfontein Colliery (Pty) Ltd (Elandsfontein) from Fraser Alexander - the DWS was not notified of the change in legal status. A recent survey of Elandsfontein was undertaken - the information from this survey was not submitted to the DWS.
3	Elandsfontein is not part of the Olifantsriver Forum.

Finding Reference #	Finding
4	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS.
5	MDT Environmental (Pty) Ltd (MDT)) completed an external audit in March 2019 for the period October 2017 to November 2018 - no proof of submission.
6	Most of the water uses commenced within 3 years from the issuance of the IWUL - the DWS was not notified of the commencement of the water uses.
7	Housekeeping concerns at the salvage yard.
8	Most of the Section 21 C & I activities are being undertaken in line with Table 2 - the coordinates for River Crossing 4 might be incorrect.
9	Several deficiencies with the requirements of the WUL and listed reports. The deficiencies include but are not limited to; surface- and groundwater pollution and a backlog in rehabilitation.
10	The IWUL conditions were not brought to the attention of all persons associated with the undertaking of the activities, with no measures to bind such persons to the conditions.
11	Various documents required for the construction of the Section 21 C & I facilities were not submitted to the DWS, including: method statements, site plan and design drawings. No as-build drawings of the existing water uses were submitted to DWS.
12	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
13	Upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein.
14	The fuel storage area at the workshops was not fitted with a valve to contain spillages.
15	The DWS was not notified of the measures to be implemented to minimise the risk of pollutants entering the natural drainage system.
16	The Alien Invasive Plant Management Plan was not implemented.
17	Erosion concerns near the watercourse crossing at the Western Opencast Pit.
18	No Wetland Management and Rehabilitation Plan.
19	No photographic records were kept for the Section 21 C & I water uses before, during and after construction.
20	<p>Various plans and programmes were not available and/ or submitted to the DWS: These include:</p> <ul style="list-style-type: none"> • A comprehensive and appropriate Rehabilitation and Management Programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after construction. • A Wetland management and Rehabilitation Plan. • The Plant Species Plan.

Finding Reference #	Finding
	<ul style="list-style-type: none"> • Alien Vegetation Species Management Plan. • Overall Rehabilitation Plan. • The Rehabilitation Plan for the non-compliant voids and the PCDs. • The Monitoring and Mitigation Plan around existing non-compliant facilities.
21	No specific notification was made to the DWS regarding commencement or completion although the authorised Section 21 C & I activities are in varying stages of completion.
22	No Environmental Management/Monitoring Committee (EMC) was established.
23	All open voids were not filled.
24	<p>PCDs were not constructed according to design plans or under the supervision of a professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990).</p> <p>No As-built drawings for the PCDs were submitted to the DWS.</p> <p>The PCDs have not been constructed to have an overflow or freeboard.</p>
25	<p>The Quarterly Flow Meter Readings Report 2019 indicates several exceedances of disposal into the waste management facilities as described in Table 4.</p> <p>Some of the current 21 (g) activities were not included in the 2015 WUL. These include the stockpiles at the current Northern and Main Opencast Pits and the product stockpile areas near the plant.</p>
26	<p>The Quarterly Water Quality Report 2019 recorded elevated concentrations in the wastewater containment facilities.</p> <p>Boreholes GW-05, ECBH-02, 03, 04 and 05, Eland 11 and ELNBH-03 recorded elevated concentrations.</p> <p>Upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein</p>
27	Incidents are being recorded in an Incident Register - the reasons or contributory factors are not listed.
28	<p>A RSIP has not been prepared and submitted to the DWS.</p> <p>A 2018 updated to the IWWMP was completed and submitted to DWS. The 2019 update to the IWWMP and RSIP forms part of the IWUL renewal and amendment process in 2020.</p>
29	No diversion design details/drawings were submitted to the DWS for approval before implementation of the diversion of the watercourse at PCD3.
30	No Monitoring and Mitigation Plan around existing non-compliant facilities at the Elandsfontein was submitted to the DWS within sixty (60) working days of the issuance of the IWUL.
31	No under drainage system at the discard facility.

1 INTRODUCTION

Geo Soil and Water cc (GSW) was appointed by Elandsfontein Colliery (Pty) (Elandsfontein) Ltd to assess and report on compliance with the Integrated Water Use Licence (IWUL), approved by the Department of Water and Sanitation (DWS) on 21 October 2015 (Licence No: 04/B20G/CGI/3843). The approved water uses include:

- Section 21 (c) of the Act: Impeding or diverting the flow of water in a watercourse;
- Section 21 (g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource; and
- Section 21 (i) of the Act: Altering the bed, bank, course or characteristics of a watercourse.

On 23 July 2019, an amendment to the existing IWUL was approved by DWS to update the coordinates of the Western Opencast Pit as mining progressed as well as to amend the restriction of activities from 500m to 41m from the boundary of a wetland.

1.1 DETAILS OF THE HOLDER

Details of the holder are summarised in Table 2 below.

Table 2: Details of the holder.

Company Name	Elandsfontein Colliery (Pty) Ltd.
Company Registration	1982/006208/07.
Physical Address	PO Box 33 Clewer 1036
Telephone Number	(013) 659 9900/01

1.2 BRIEF PROJECT DESCRIPTION

Elandsfontein Colliery is currently undertaking opencast mining in the Northern Pit and the Main Pit (Western Opencast Pit). Historic underground and opencast mining have occurred. Roll over strip mining method is utilised to extract the coal from the No. 1 and No. 2 Coal Seam and rehabilitation is undertaken concurrently as the coal is extracted. A dozer, truck and shovel are used to remove the topsoil and subsoil material. Hard overburden material is blasted to expose the No 2 Coal Seam which is mined and placed on the ROM stockpile for dry processing. Additionally, discard is sourced from the current discard facilities and discard coal that has been stored in old opencast workings. Elandsfontein Colliery has the required infrastructure in place for the safe and efficient production of raw ROM coal for the local power generation market. The following infrastructure is currently in place:

- Offices;
- Change Houses;
- Workshops;
- Coal washing plant;

- Filter press;
- Pollution Control Dams (PCDs); and
- Weighbridge.

2 DETAILS OF THE AUDITOR

The audit was undertaken by Francois Barnard on behalf of GSW. Francois' details are described in the section 2.1.

2.1 EXPERTISE OF THE AUDITOR

Francois is an environmental scientist offering environmental management, auditing, monitoring, training, rehabilitation and project management services. He is a registered Professional Natural Scientist who holds a BSc Honours degree in environmental sciences from the North-West University in Potchefstroom and is a trained environmental auditor (Aspects International, 2012). The auditing training included all aspects of environmental auditing as well as EMS auditing in terms of ISO14001. In addition, he is trained on the ISO14001:2015 environmental standard and has completed the EMS lead auditor training in terms of ISO14001:2015. He has over 11 years' experience in the environmental management and environmental and social auditing field on numerous projects and facilities in the energy, mining, infrastructure development and conservation management sectors. He is conversant with the South African environmental legislation as well as sustainability auditing, including Equator Principles, IFC Performance Standards and World Bank EHS guidelines. Francois has a thorough understanding of the environmental and social assessment and permitting processes and is experienced in the review, compilation and implementation of environmental and social management plans, procedures and method statements in line with best practice standards and systems, as well as document tracking and record keeping. A detailed CV can be provided on request.

2.2 DECLARATION OF INDEPENDENCE

I, Francois Barnard, declare that –

- *I act as the independent environmental auditor;*
- *I will perform the work relating to the audit in an objective manner, even if this results in views and findings that are not favourable to the Client;*
- *I declare that there are no circumstances that may compromise my objectivity in performing such work;*
- *I have expertise in conducting environmental audits, including knowledge of the environmental Acts, regulations and any guidelines that have relevance to the audited operations;*
- *I will comply with the relevant Acts, regulations and all other applicable legislation;*
- *I have no, and will not engage in, conflicting interests in the audit process; and*
- *I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the NEMA.*

I do not have and will not have any vested interest (either business, financial, personal or other) in the audit other than remuneration for work performed.

3 SCOPE, PURPOSE AND OBJECTIVE OF THE AUDIT

The **scope** of the audit is to assess compliance with the conditions of the IWUL. The **purpose** of the audit is to ensure compliance with the requirement of the WUL, to undertake annual external compliance audits. The **objective** of the audit is to:

- Establish the level of compliance with the conditions of the IWUL; and
- Provide the management of the Elandsfontein with information to initiation corrective action, where necessary or appropriate.

4 AUDIT METHODOLOGY

4.1 PROCEDURE FOR THE AUDIT

Initial documentation was obtained and reviewed in preparation for the audit. A checklist was prepared, based on the requirements of the IWUL. Subsequent to the initial checklist preparation and documentation review, a site visit was undertaken on 18 November 2019.

Compliance with the requirements of the IWUL was evaluated using pre-determined scoring criteria as described in Section 4.2. The results of the evaluation are provided in Section 5.2 and the findings are described in Section 5.3. Each condition in the IWUL was weighted equally in order to determine a compliance score.

Various documentation and records were required during the audit to confirm compliance with the IWUL conditions. Where possible, documentation and records were made available electronically for review prior to the site visit. The rest of the information required for verification of compliance was provided following the site inspection.

There is wide variety of South African environmental legislation and the mine is required to comply with all relevant legislation. Whilst consideration was given to the relevant environmental legislation, a full comprehensive legal compliance audit is beyond the scope of this audit. Where reference is made to legislation or other statutory provisions in this report, the original legislation or other statutory provisions will always take precedence and the reader is directed to revert to the original legislation or statutes.

4.2 EVALUATION CRITERIA USED DURING THE AUDIT

The evaluation criteria for compliance scoring were based on a pre-determined scoring system. Each condition in the IWUL was weighted equally in order to determine a compliance score. The scoring criteria used during the audit are as follows:

- Full-Compliance: Indicating that the condition was fully complied with and provided with a compliance score of 4.
- Partial-Compliance: Indicating that the condition has not been fully complied with and that additional measures are required to obtain full compliance. Partial compliances were provided with a compliance score of 2.
- Non-Compliance: Indicating that the condition has not been complied with and provided with a compliance score of 0.

- Not Applicable (N/A): Indicating that the condition is not currently applicable. Not applicable conditions were removed from the total number of conditions from which the compliance score was calculated.

4.3 CONSULTATION PROCESS UNDERTAKEN

The findings of this audit are based on visual inspection of the relevant areas, interviews, as well as documentation reviewed. No physical testing or chemical analysis was performed, and information provided by employees was verified by inspection and review only.

5 RESULTS OF THE ASSESSMENT

The result of the audit have been described in Table 3 and is based on the evaluation criteria described in Section 4.2 of this report.

5.1 COMPLIANCE SUMMARY

A total of 192 commitments were identified in the IWUL that were evaluated. 33 of these conditions were considered not applicable to the current activities of the mine. Of the applicable conditions, a total of 53 commitments were noted to be fully compliant, 64 partially compliant and 42 were non-compliant. The level of compliance for each commitment was calculated according to the methodology described in Section 4. Utilising this scoring system, a total compliance score of **53.46%** was obtained. A summary of the percentage of conditions of the IWUL rated as Fully Compliant, Partially Compliant and Non-Compliant is presented in Figure 1.

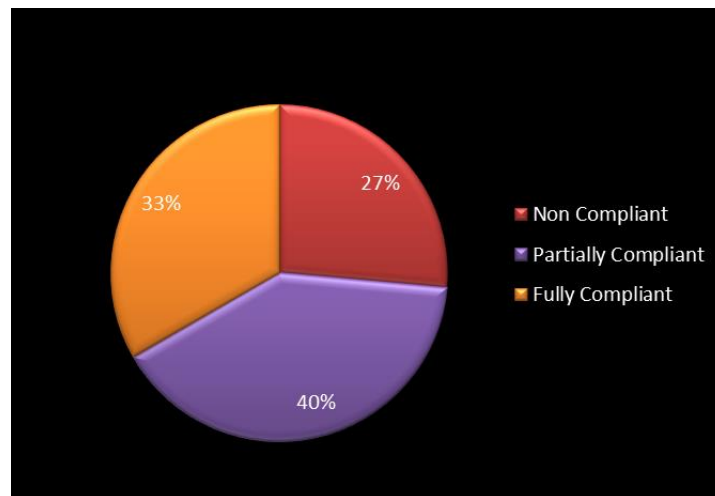


Figure 1: Distribution of compliance ratings for IWUL conditions.

The full compliance evaluation for the applicable conditions is presented in Table 3 of Section 5.2.

5.2 COMPLIANCE EVALUATION

A total of 192 commitments were assessed according to the audit methodology as described in Section 4. The compliance evaluation is presented in Table 3, Section 5.2 and the findings presented in Table 4, Section 5.3.

Table 3: Compliance evaluation of IWUL conditions.

Ref #	Condition	Compliance Rating	Comments/ Verification
APPENDIX I: GENERAL CONDITIONS FOR THE LICENCE			
1	This licence is subject to all applicable provisions of the National Water Act, 1998 (Act 36 of 1998).	0	Refer to Figure 1. No exemption from GN 704 requirements, including mining activities and infrastructure within 100m or within the 1:100-year floodline, and the construction of haul roads with carbonaceous material.
2	The responsibility for complying with the provisions of the licence is vested in the Licensee and not any other person or body.	N/A	The Licensee takes responsibility for complying with the provisions of the licence.
3	The Licensee shall immediately inform the Provincial Head of any change of name, address, premises and/or legal status.	0	Namane Resources (Pty) Ltd (Namane) bought Elandsfontein Colliery (Pty) Ltd (Elandsfontein) from Fraser Alexander - the DWS was not notified of the change in legal status.
4	If the property(ies) in respect of which this licence is issued is subdivided or consolidated, the Licensee must provide full details of all changes in respect of the properties to the Provincial Head of the Department within sixty (60) days of the said change taking place.	0	A recent survey of Elandsfontein was undertaken - the information from this survey was not submitted to the DWS.
5	If a water user association is established in the area to manage the resource, membership of the Licensee to this association is compulsory and rules, regulations and water management stipulations of the association must be adhered to.	2	Elandsfontein is not part of the Olifantsriver Forum.
6	While effect shall be given to the reserve as determined in terms of the act, where a desktop determination of the reserve has been used in issuance of a licence, when a comprehensive determination of the reserve has finally been made it shall be given effect to.	N/A	The availability of a comprehensive determination of the Reserve is unknown.
7	The licence shall not be construed as exempting the Licensee from compliance with the provisions of any other applicable Act, Ordinance, Regulation or By-law.	N/A	The licensee understands their obligation to comply with any other laws.

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Ref #	Condition	Compliance Rating	Comments/ Verification
8	The licence and amendment of this licence are also subject to all the applicable procedural requirements and other applicable provisions of the Act, as amended from time to time.	4	An application for the renewal and amendment of the IWUL was submitted to DWS in September 2019.
9	The Licensee shall conduct an annual internal audit on compliance with the conditions of licence. A report on the audit shall be submitted to the Provincial Head within one month of the finalisation of the audit.	2	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS.
10	The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence.	4	MDT Environmental (Pty) Ltd (MDT) completed an external audit in March 2019 for the period October 2017 to November 2018 - no proof of submission to DWS.
11	Any incident that causes or may cause water pollution shall be reported to the Provincial Head or his/her designated representative within 24 hours.	4	During 2019, two reportable incidents occurred: → A section of the wetland burned down; and → PCD3 overflowed. Both incidents were reported to the DWS within 24 hours.
12	If the water use described in this licence is not exercised within 3 years of the date of the licence, the authorization will be withdrawn. Upon commencement of the water use, the Licensee must inform the relevant authority in writing.	2	Most of the water uses commenced within 3 years from the issuance of the IWUL - the DWS was not notified of the commencement of the water uses.
13	The Licensee shall establish and implement a continual process of raising awareness amongst itself, its workers and stakeholders for the need to for Water Conservation and Water Demand Management.	4	The Induction presentation covers water usage and the need to save water.
14	Notices prohibiting unauthorized persons from entering water use premises must be displayed.	4	Notices prohibiting unauthorized persons from entering were displayed at the entrance to Elandsfontein, as well as PCD3.
15	The Department accepts no liability for any damage, loss or inconvenience, of whatever nature, suffered as a result of:	N/A	Statement. Noted.
15,1	Any force majeure event;	N/A	Statement. Noted.
15,2	Siltation of the river or dam basin; and	N/A	Statement. Noted.
15,3	Required Reserve releases.	N/A	Statement. Noted.
16	Licensee shall use water efficiently to minimize total water intake, void usage of water where possible, implement "good" housekeeping and operating practices, and maximize the reuse/ recycle of contaminated water.	2	Water is re-used from the PCDs and containment facilities. Housekeeping concerns at the salvage yard.

Ref #	Condition	Compliance Rating	Comments/ Verification
APPENDIX II: SECTION 21 THE AND (I) OF THE ACT: IMPEDING OR DIVERTING, AND ALTERING THE BED, BANKS FLOW OF WATER OR CHARACTERISTICS OF A WATERCOURSE.			
1	GENERAL		
1,1	This licence authorises Elandsfontein Colliery (Pty) Ltd for the watercourse crossings in terms of section 21 (c) and (i) of the Act, as set out in Table 2 and in the water use licence application reports submitted to the Department or Provincial Head.	2	Most of the Section 21 C & I activities are being undertaken in line with Table 2 - the coordinates for River Crossing 4 might be incorrect.
1,2	The Licensee shall carry out and complete all the activities listed under condition 1.1 according to the following: <ul style="list-style-type: none"> → Reports submitted to the Regional Head; → Elandsfontein Coal mine Conceptual Rehabilitation Plan by Digby Wells Environmental dated October 2014; → Conditions of this licence; and → Any other written direction issued by the Provincial Head in relation to this licence. 	2	Several deficiencies with the requirements of the WUL and listed reports. The deficiencies includes, nut are not limited to: surface- and groundwater pollution and a backlog in rehabilitation.
1,3	No activity must take place within the 1:100 year flood line or the delineated riparian habitat, whichever is the greatest, or within 500m 41 m radius from the boundary of any wetland unless authorised by this licence.	4	Activities take place outside of the 41m buffer of the wetlands and 1:100-year floodline of the watercourses.
1,4	The conditions of the authorisation must be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of these activities and the Licensee must take such measures that are necessary to bind such persons to the conditions of this licence.	0	The IWUL conditions were not brought to the attention of all persons associated with the undertaking of the activities, with no measures to bind such persons to the conditions.
1,5	A copy of the water use licence and reports set out under condition 1.2 must be on site at all times.	4	A copy of the WUL was available on site.
1,6	A suitably qualified person(s), appointed by the Licensee, and approved in writing by the Provincial Head; must be responsible for ensuring that the activities are undertaken in compliance with the specifications as set out in reports submitted to the Department and the conditions of this licence.	4	An Environmental Manager, Ms B Moeketsi, was appointed for ensuring that activities are undertaken in compliance with the specifications as set out in reports submitted to the DWS and the conditions of the IWUL.
2	FURTHER STUDIES AND INFORMATION REQUIREMENTS		
2,1	For water use activities in Table 2:		

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Ref #	Condition	Compliance Rating	Comments/ Verification
2.1.1	Work method statements, site plan(s) and detailed design drawings for the construction of all infrastructure of impeding and/or diverting flow of watercourses must be submitted to the Provincial Head for a written approval before construction and implement as directed. The foregoing must indicate the regulated activities, marking the limits of disturbance in relation to the impacted watercourse(s); morphology of the watercourse(s); site specific impacts; and environmental management, particularly erosion and sediment, controls and measures;	0	Various documents required for the construction of the Section 21 C & I facilities were not submitted to the DWS, including: method statements, site plan and design drawings.
2.1.2	No fundamental alterations of the work method statements, site plan(s) and drawings are allowed, unless a modification is requested and granted by the Provincial Head in writing;	4	An application for the renewal and amendment of the IWUL was submitted to DWS in September 2019, including updated work method statements, site plans and drawings.
2.1.3	No site activities shall occur beyond the proposed site location of the erosion and sedimentation controls and marked limits of disturbance.	N/A	The construction of the watercourse crossings was not constructed.
2.1.4	Revised master plan incorporating the 1:100 year floodline, riparian zones, buffer zones, all affected watercourses, wetlands, borrow-pits, bridges and stormwater infrastructure must be submitted to the Provincial Head before commencement of the activities.	2	A master plan was prepared for the IWULA in process.
2,3	An environmental management plan (EMP) and rehabilitation plan for the decommissioning of any of the water use activities listed in Table 2 must be submitted five (5) years before commencing with closure to the Provincial Head for a written approval.	4	An Environmental Management Plan (EMP) and Rehabilitation Plan for the decommissioning of the water use activities listed in Table 2, will be submitted to DWS as part of the renewal and amendment of the IWUL.
2,4	For all the activities listed under condition 1.1, Table 2, "as-built" plan(s) and engineering drawing(s) prepared by a registered professional engineer, must be submitted to the Provincial Head within six(6) months of the completion of new activities and for existing water uses within six (6) months of the date of issuance of this licence. These plan(s) and drawing(s) must indicate the watercourse(s) including wetland boundaries and layout and structure location(s) of all infrastructure of impeding and/or diverting flow of watercourses as well as alterations to watercourse(s) on the property(ies).		No as-build drawings of the existing water uses were submitted to DWS.
3	PROTECTIVE MEASURES		

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Ref #	Condition	Compliance Rating	Comments/ Verification
3,1	Storm Water Management		
3.1.1	Storm water management practices shall be constructed, operated and maintained in a sustainable manner throughout the project and for the water use activities set out in condition 1.1 of appendix II and 2.1 of appendix IV and shall include but are not limited to the following:	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
3.1.1.1	Increase runoff due to vegetation clearance and/or soil compaction shall be managed, and steps shall be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the watercourse(s).	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
3.1.1.2	Stormwater must be diverted from the Elandsfontein (Pty) Ltd and must be managed in such a manner as to disperse runoff and to prevent the concentration of stormwater flow.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
3.1.1.3	The velocity of stormwater discharges must be attenuated and the banks of the watercourses protected;	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
3.1.1.4	Stormwater leaving the Licensee's premises must in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises;	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
3.1.1.5	Drainage next to the construction works and mining area must be diverted away from the watercourse(s) to ensure that any contaminated runoff does not flow directly into the watercourse(s) to ensure that any contaminated runoff does not flow directly into the watercourse(s) as a stormwater discharge.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
3,2	Structures, Construction Plant and Materials		
3.2.1	Necessary erosion prevention measures must be employed to ensure the sustainability of all structures.	2	The structures /crossings have to be re-constructed to ensure sustainability. Storm water attenuation was noted at one of the crossings.
3.2.2	The height, width and length of structures must be limited to the minimum dimension necessary to accomplish the intended function.	2	The structures /crossings have to be re-constructed to ensure sustainability. Storm water attenuation was noted at one of the crossings.
3.2.3	Structures must not be damaged by floods exceeding the magnitude of floods occurring on average once in every 100 years.	2	The structures /crossings have to be re-constructed to ensure sustainability. Storm water attenuation was noted at one of the crossings.

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Ref #	Condition	Compliance Rating	Comments/ Verification
3.2.4	Structures must be non-erosive, structurally stable and must not induce any flooding or safety hazard.	2	The structures /crossings have to be re-constructed to ensure sustainability. Storm water attenuation was noted at one of the crossings.
3.2.5	Structures must be inspected regularly for accumulation of debris, blockage, erosion of abutments and overflow areas – debris must be removed and damages must be repaired and reinforced immediately.	4	Structures are inspected on a regular basis. Some of these structures must be re-constructed.
3.2.6	Construction camp, plant and material stockpiles must be located outside the extent of the watercourse(s) and must be recovered and removed one (1) month after construction has been completed.	N/A	Construction at the Section 21 C & I infrastructure has not commenced.
3.2.7	During construction erosion berms shall be installed to prevent gully formation, according to the slope.	N/A	Construction at the Section 21 C & I infrastructure has not commenced.
3.2.8	All areas affected by construction shall be rehabilitated upon completion of the construction phase of the development. Areas shall be reseeded with indigenous vegetation species as required, and the use of seed nets is recommended to prevent erosion.	N/A	Construction at the Section 21 C & I infrastructure has not commenced.
3.2.9	During the construction phase no vehicles shall be allowed to indiscriminately drive through any wetland areas.	N/A	Construction at the Section 21 C & I infrastructure has not commenced.
3.2.10	No construction is allowed within the 1:100 year flood line and/or delineated riparian habitat, whichever is the greatest, or within 500 m radius from the boundary of any wetland unless authorised in this licence.	N/A	Construction at the Section 21 C & I infrastructure has not commenced.
3,3	Water Quality		
3.3.1	The Licensee shall sample the water quality weekly (during construction) and monthly (during operation) for the mentioned variables (Table 3, page 10 of the licence) at the monitoring points both upstream and downstream of the activities and report to the Provincial Head within thirty (30) days after the results of each sampling event is received.	4	The mine is in operational phase and no construction activities are taking place at the watercourse crossings. Monthly surface water monitoring is undertaken and submitted to DWS.
3.3.2	Monitoring must continue for three (3) years after the cessation of the activities listed in condition 1.1, Appendix II.	N/A	Noted.

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Ref #	Condition	Compliance Rating	Comments/ Verification
3.3.3	Monitoring must be undertaken as set out in section 5, Appendix II.	2	Certain deficiencies were noted with regards to the monitoring as prescribed in Section 5 of Appendix II, including: the Internal IWUL Audit Report 2019 not submitted to the DWS, no EMC establishment and no Wetland Management and Rehabilitation Plan.
3.3.4	Activities that lead to elevated levels of turbidity of any watercourse(s) must be prevented, reduced, or otherwise remediated. Activities must be scheduled to take place during dry seasons when flows are low.	2	Some surface water monitoring points indicates elevated turbidity levels compared to the Resource Quality Objectives for the Olifants River System.
3.3.5	The Licensee must ensure that the quality of the water to downstream water users does not decrease because of the water use activities listed under condition 1.1, Appendix II.	2	Upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein.
3.3.6	A qualified person must be appointed to assess the quality of water both upstream and downstream of the activities prior to commencement of construction.	4	The quarterly and annual surface – and groundwater reports are compiled and evaluated by a registered Pr.Sci.Nat. Environmental Scientist. Annual groundwater reports are evaluated by a registered Pr.Sci.Nat. Geohydrologist.
3.3.7	Pollution of and disposal/spillage of any material into the watercourse must be prevented, reduced, or otherwise remediated through proper operation, maintenance and effective protective measures.	0	Upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein
3.3.8	Vehicles and other machinery must be serviced well above the 1:100 year flood line or delineated riparian habitat, whichever is the greatest. Oils and other potential pollutants must be disposed of at an appropriate licensed site, with the necessary agreement from the owner of such a site.	4	Vehicles are serviced above the 1:100-year flood lines. Oils and other potential pollutants are disposed by Oilkol at an appropriate licensed site.
3.3.9	Any hazardous substances must be handled according to the relevant legislation relating to transport, storage and use of the substance.	0	The fuel storage area at the workshops was not fitted with a valve to contain spillages.
3.3.10	All reagent storage tanks and reaction units must be supplied with a bunded area built to the capacity of the facility and provided with sumps and pumps to return the spilled material back into the system. The system must be maintained in a state of good repair and standby pumps must be provided.	0	The fuel storage area at the workshops was not fitted with a valve to contain spillages.

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Ref #	Condition	Compliance Rating	Comments/ Verification
3.3.11	The Licensee has to indicate to the Provincial Head within sixty (60) days after issuance of this licence, the strategic placement of bio-swale, bio-filters, silt, litter and hydrocarbon (oil) traps to minimise the risk of pollutants entering the natural drainage system of the area.	0	The DWS was not notified of the measures to be implemented to minimise the risk of pollutants entering the natural drainage system.
3,4	Flow		
3.4.1	The Licensee must determine flood lines (1:50 and 1:100 year) prior to construction to ensure risks are adequately managed. Flood lines must be clearly indicated on the site plan(s) and drawings along with all wetland boundaries.	4	The flood lines (1:50 and 1:100 year) was determined. The flood lines are clearly indicated on the site plan(s) and drawings, along with all wetland boundaries.
3.4.2	The activities must be conducted in a manner that does not negatively affect catchment yield, hydrology and hydraulics. The Licensee must ensure that the overall magnitude and frequency of flow in the watercourse(s) does not decrease, other than for natural evaporative losses and authorised attenuation volumes.	2	The culvert crossings were not adequate to cater for flood events, resulting in the re-construction of these structures.
3.4.3	Appropriate design and mitigation measures must be developed to minimise impacts on the natural flow regime of the watercourse i.e. through placement of structures/supports and to minimise turbulent flow in the watercourse.	0	The culvert crossings were not adequate to allow natural flow, resulting in the re-construction of these structures.
3.4.4	Structures to be designed in a way to prevent the damming of stream/river water and not impact on the flow of the water, during the construction and operational phases of all developments.	0	The culvert crossings were not adequate to prevent damming of water, resulting in the re-construction of these structures.
3.4.5	The development may not impede natural drainage lines.	0	Elandsfontein impacted on natural drainage lines.
3.4.6	The diversion structures may not restrict river flows by reducing the overall river width or obstructing river flow.	0	The culvert crossings were not adequate to allow natural flow, resulting in the re-construction of these structures.
3.4.7	Back filling must restore the channel shape and bed level to pre-construction condition.	0	No Wetland Management and Rehabilitation Plan.
3.4.8	Where flow in watercourse is permanent, the trench must be staged across part of the channel to maintain flows. Flows must not be stopped.	N/A	No trenches were present within the watercourse.
3,5	Riparian and Instream Habitat		

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Ref #	Condition	Compliance Rating	Comments/ Verification
3.5.1	Activities (including spill clean-up) must start up-stream and proceed into a down- stream direction, so that the recovery processes can start immediately, without further disturbance from upstream works.	N/A	Noted.
3.5.2	Operation and storage of equipment must not take place within the 1:100 year flood line or delineated riparian habitat, whichever is the greatest unless authorised in this license.	4	No activities were taking place within the 1:100 year flood line or riparian habitat of the watercourse.
3.5.3	Activities must not occur in sensitive riffle habitats.	4	No activities were taking place in sensitive riffle habitats.
3.5.4	Indigenous riparian vegetation, including dead trees, outside the limits of disturbance indicated in the site plans must not be removed from the area.	4	Indigenous riparian vegetation was avoided as far as possible.
3.5.5	Alien and invader vegetation must not be allowed to further colonise the area, and all new alien vegetation recruitment must be sustainably eradicated or controlled.	0	The Alien Invasive Plant Management Plan was not implemented.
3.5.6	Existing vegetation composition must be maintained or improved by maintaining the natural variability in flow fluctuations. Rehabilitated areas shall have vegetation basal cover of at least 15% at all times.	2	Since the issue of the WUL, the disturbance of the wetland areas has decreased. Rehabilitation of the wetland areas is planned for the near future.
3.5.7	Recruitment and maintaining of a range of size classes of dominant riparian species in perennial channels must be stimulated.	2	Wetland monitoring is done by a qualified wetland specialist. Various recommendations have been made that have to be implemented to improve the status of the wetlands.
3.5.8	Encroachment of additional exotic species and terrestrial species in riparian zones must be discouraged.	2	Wetland monitoring is done by a qualified wetland specialist. Various recommendations have been made that have to be implemented to improve the status of the wetlands.
3.5.9	Accumulation of woody debris on terraces by periodic flooding must be discouraged.	2	Wetland monitoring is done by a qualified wetland specialist. Various recommendations have been made that have to be implemented to improve the status of the wetlands.
3.5.10	Existing flood terraces and deposit ion of sediments on these terraces to ensure optimum growth, spread and recruitment of these species must be maintained.	2	Wetland monitoring is done by a qualified wetland specialist. Various recommendations have been made that have to be implemented to improve the status of the wetlands.
3.5.11	All reasonable steps must be taken to minimize noise and mechanical vibrations in the vicinity of the watercourses.	4	Environmental Noise Monitoring and Blast Vibration Monitoring are being undertaken. The audible activities emanating from Elandsfontein was not defined as a noise nuisance.

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Ref #	Condition	Compliance Rating	Comments/ Verification
3.5.12	Necessary erosion prevention mechanisms must be employed to ensure the sustainability of all structures and activities and to prevent instream sedimentation.	0	Erosion concerns near the watercourse crossing at the Western Opencast Pit.
3.5.13	Soils that have become compacted through the water use activities must be loosened to an appropriate depth to allow seed germination.	4	During rehabilitation, soil was loosened to allow for seed germination.
3.5.14	Slope/bank stabilisation measures must be implemented with a 1:3 ratio or flatter and vegetated with indigenous vegetation immediately after the shaping.	2	Unstable and un-vegetated slopes in the vicinity of the watercourse.
3.5.15	Stockpiling of removed soil and sand must be stored outside of the 1:100 flood line or delineated riparian habitat, whichever is the greater, to prevent being washed into the river and must be covered to prevent wind and rain erosion.	2	Soil stockpiles in close proximity of the watercourses however, rehabilitation is ongoing. No excessive erosion of stockpiles.
3.5.16	The indiscriminate use of machinery within the instream and riparian habitat will lead to compaction of soils and vegetation and must therefore be strictly controlled.	4	No indiscriminate use of machinery within the wetlands.
3.5.17	The overall macro-channel structures and mosaic of cobbles and gravels must be maintained by ensuring a balance (equilibrium) between sediment deposition and sediment conveyance maintained. A natural flooding and sedimentation regime must thus be ensured as far as reasonably possible.	4	No concerns with regards to macro-channel structures.
3.5.18	As much indigenous vegetation growth as possible shall be promoted within the proposed development area in order to protect soil and to reduce the percentage of the surface area which is paved.	2	There is a historic rehabilitation backlog and wetland/watercourse areas have been disturbed.
3.5.19	Run-off from paved surfaces shall be slowed down by the strategic placement of berms.	2	Erosion on access roads leading to the wetland/watercourse.
3.5.20	Adequate measures must be implemented to prevent instream siltation during the construction phase.	N/A	Construction of the watercourse crossings has not commenced. Evidence of erosion and potential silt wash into the watercourse.
3.5.21	Unless authorised by this licence, access roads must not encroach into the extent of the watercourse(s).	4	The access roads verified was authorised by the WUL.
3,6	Biota		

Ref #	Condition	Compliance Rating	Comments/ Verification
3.6.1	The Licensee must take all reasonable steps to allow movement of aquatic species, including migratory species.	2	Movement of aquatic and migratory species were mostly maintained even though certain of the wetlands require rehabilitation.
3.6.2	All reasonable steps must be taken not to disturb the breeding, nesting and/or feeding habitats and natural movement patterns of aquatic biota.	2	The breeding, nesting and/or feeding habitats and natural movement patterns of aquatic biota. Were mostly maintained even though certain of the wetlands require rehabilitation.
3.6.3	The current level of diversity of biotopes and communities of animals, plants and microorganisms must be maintained.	2	Wetland monitoring is being undertaken. Certain of the wetlands require rehabilitation including: storm water management, erosion control on areas with high concentrations of gullies and removal of dense populations of alien invasive species.
4	REHABILITATION AND MANAGEMENT		
4,1	The Licensee must embark on a systematic long-term rehabilitation programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after completion of the activities, which must include, but not be limited to the rehabilitation of disturbed and degraded riparian areas to restore and upgrade the riparian habitat integrity to sustain a bio-diverse riparian ecosystem.	0	No Wetland Management and Rehabilitation Plan.
4,2	All disturbed areas must be re-vegetated with an indigenous seed mix in consultation with an indigenous plant expert, ensuring that during rehabilitation only indigenous shrubs, trees and grasses are used in restoring the biodiversity.	2	Wetland monitoring is undertaken but there is no Wetland Management and Rehabilitation Plan. Certain of the wetlands require rehabilitation including: storm water management, erosion control on areas with high concentrations of gullies and removal of dense populations of alien invasive species.
4,3	An active campaign for controlling invasive species must be implemented within disturbed zones to ensure that it does not become a conduit for the propagation and spread of invasive exotic plants.	2	Wetland monitoring is undertaken but there is no Wetland Management and Rehabilitation Plan. Certain of the wetlands require rehabilitation including: storm water management, erosion control on areas with high concentrations of gullies and removal of dense populations of alien invasive species.
4,4	Rehabilitation must be concurrent with construction.	2	Roll-over rehabilitation is undertaken at the operational mining areas, with a substantial backlog at historical areas. Construction of the watercourse crossings has not commenced.
4,5	Topsoil must be stripped and redistributed.	4	Topsoil stripping and redistribution was done.
4,6	Compacted and disturbed areas must be shaped to natural forms and to follow the original contour. In general cut and fill slopes and other disturbed areas must not exceed 1:3 (v: h) ratio, it must be protected, vegetated, ripped and scarified parallel with the contour.	2	Roll-over rehabilitation is undertaken at the operational mining areas, with a substantial backlog at historical areas.
4,7	The Provincial Head must sign a release form indicating that rehabilitation was done satisfactory according to specifications as per this licence.	N/A	Not applicable.

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Ref #	Condition	Compliance Rating	Comments/ Verification
4,8	A photographic record must be kept as follows and submitted with reports as set out in section 5, Appendix II:	0	No photographic records were kept for the Section 21 C & I water uses before, during and after construction
4.8.1	Dated photographs of all the sites to be impacted before construction commences.	0	No photographic records were kept for the Section 21 C & I water uses before, during and after construction
4.8.2	Dated photographs of all the sites during construction on a monthly basis; and	0	No photographic records were kept for the Section 21 C & I water uses before, during and after construction
4.8.3	Dated photographs of all the sites after completion of construction, seasonally.	0	No photographic records were kept for the Section 21 C & I water uses before, during and after construction
4,9	Rehabilitation structures must be inspected regularly for the accumulation of debris, blockages instabilities and erosion with concomitant remedial and maintenance actions.	N/A	The rehabilitation of the watercourses has not commenced.
4.10	A comprehensive and appropriate rehabilitation and management programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after construction must be developed and submitted to the Provincial Head for written approval within one (1) month from the date of issuance of this licence.	0	It was reported that the programme has not yet been prepared.
4,11	The original contours must be established over the pipeline or bridge or road. After the backfill has subsided, the contour must follow the surrounding contours to stop irregular flows or blockage of biotic movement.	N/A	No wetland crossings were constructed.
4,12	A Wetland Management and Rehabilitation Plan must be compiled by a wetland specialist when wetlands are affected and submitted to the Provincial Head for written approval.	0	No Wetland Management and Rehabilitation Plan was compiled and submitted to DWS for written approval..
4,13	Wetland crossing(s) must be visited by a wetland specialist prior to construction to determine baseline conditions. This shall be repeated during and after rehabilitation measures have been implemented to assess the success of rehabilitation and erosion control measures.	N/A	No wetland crossings were constructed.
5	MONITORING AND REPORTING		

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Ref #	Condition	Compliance Rating	Comments/ Verification
5,1	The Provincial Head must be notified in writing one week prior to commencement of the licensed activity(s) and again upon completion of the activity(s).	2	No specific notification was made to the Provincial head regarding commencement or completion. The authorised Section 21 C & I activities are in varying stages of completion. Certain of the activities have not yet commenced.
5,2	A comprehensive and appropriate environmental assessment and monitoring programme (including bio-monitoring) to determine the impact, change, deterioration and improvement of the aquatic system associated with the activities listed under condition 1.1 Appendix II as well as compliance to these water use licence conditions must be developed and submitted to the Provincial Head for a written approval before commencement and must subsequently be implemented as directed.	4	Biomonitoring and Wetland Monitoring were undertaken during 2019.
5,3	Six (6) monthly monitoring reports must be submitted to the Provincial Head until otherwise agreed in writing with the Provincial Head.	4	Six monthly monitoring reports are prepared by The Biodiversity Company (TBC) and submitted to DWS.
5,4	A qualified and responsible scientist must be retained by the Licensee who must give effect to the various licence conditions and to ensure compliance thereof pertaining to all activities of impeding and/or diverting flow of watercourses, as well as alterations to watercourses on the property(s) as set out in condition 1.1 Appendix II.	4	An Environmental Manager, Ms B Moeketsi, was appointed for ensuring that activities are undertaken in compliance with the specifications as set out in reports submitted to the DWS and the conditions of the IWUL.
5,5	The Licensee must conduct an internal audit on compliance with the conditions in this licence. A report on the audit must be submitted to the Provincial Head within one (1) month of the finalisation of the audit. A qualified independent auditor must undertake this audit.	2	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS.
5,6	The audit reports must include, but are not limited to:	N/A	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS. A copy of the Internal Audit Report 2019 was not provided to confirm whether it conforms to the requirements of the WUL.
5.6.1	Reporting in respect of the monitoring programme referred to in condition 5.2, Appendix III.	2	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS. A copy of the Internal Audit Report 2019 was not provided to confirm whether it conforms to the requirements of the WUL.
5.6.2	A record of implementation of all mitigation measures including a record of corrective actions.	2	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS. A copy of the Internal Audit Report 2019 was not provided to confirm whether it conforms to the requirements of the WUL.

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Ref #	Condition	Compliance Rating	Comments/ Verification
5.6.3	Compensation measures for damage where mitigation measures have failed to adequately protect the in-stream and riparian habitat or any other characteristic of the watercourses.	2	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS. A copy of the Internal Audit Report 2019 was not provided to confirm whether it conforms to the requirements of the WUL.
5,7	The Licensee must apply in writing to the Provincial Head for alternative reporting arrangements for which written approval must be provided.	N/A	Alternative reporting arrangements are not applicable.
5,8	An Environmental Management/Monitoring Committee (EMC) must be established consisting of, but not limited to, representatives of the Licensee, the Responsible Person(s) for ensuring compliance with this licence, the Department of Water and Sanitation, the relevant Department of Environmental Affairs, the Department of Minerals and Resources, and other stakeholders.	0	No Environmental Management/Monitoring Committee (EMC) was established.
5,9	The EMC must in addition to monitoring compliance with the conditions of the Environmental Management Programme Report, monitor for the duration of its establishment compliance with the conditions of this water use licence.	0	No Environmental Management/Monitoring Committee (EMC) was established.
5,1	A wetland specialist must be appointed to monitor the compliance to the wetland management and rehabilitation plan and conditions in this licence pertaining to impacts on wetlands and provide specialist advise for corrective actions and compile audit reports which must be submitted to the Provincial Head.	2	Wetland monitoring is undertaken by TBC, but there is no Wetland Management and Rehabilitation Plan. Certain of the wetlands require rehabilitation including: storm water management, erosion control on areas with high concentrations of gullies and removal of dense populations of alien invasive species. The Wetland Monitoring Report was submitted to the DWS.
6	OTHER WATER USERS		
6,1	The Licensee must attempt to prevent adverse effect on other water users. All complaints must be investigated by a suitable qualified person and if investigations prove that the Licensee has impaired the rights of other water users, the Licensee must initiate suitable compensative measures.	2	The watercourses are affected by mining - as per the Complaints Register, no complaints were raised by downstream water users.
7	POLLUTION PREVENTION, INCIDENTS AND MALFUNCTIONS		
7,1	Pollution incidents shall be dealt with in accordance with Section 19 and 20 of the Act.	4	During 2019, two reportable incidents occurred: → A section of the wetland burned down; and → PCD3 overflowed. Both incidents were reported to the DWS within 24 hours.

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Ref #	Condition	Compliance Rating	Comments/ Verification
7,2	Any incident that may cause pollution of any water resource shall immediately be reported to the Provincial Head.	4	During 2019, two reportable incidents occurred: → A section of the wetland burned down; and → PCD3 overflowed. Both incidents were reported to the DWS within 24 hours.
7,3	If surface and/or groundwater pollution has occurred or may possibly occur, the Licensee must conduct, and/or appoint specialists to conduct the necessary investigations and implement additional monitoring, pollution prevention and remediation measures to the satisfaction of the Provincial Head.	2	As per the latest Water Quality Monitoring Report, upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein.
7,4	The Licensee shall keep all records relating to the compliance or non-compliance with the conditions of this licence in good order. Such records shall be made available to the Provincial Head within 14 (fourteen) days of receipt of a written request by the Department for such records.	4	The External Audit Report for 2017/2018 was available.
7,5	The Licensee shall keep an incident report and complaints register, which must be made available to any external auditors and the Department.	4	An Incident - and Complaints Register are kept.
8	BUDGETARY PROVISIONS		
8,1	The Licensee must ensure that there is a budget sufficient to complete and maintain the water use and for successful implementation of the rehabilitation programme as set out in this licence.	4	Sufficient budget is available to maintain the water uses. Various studies are currently being undertaken to determine the measures that must be implemented to improve the compliance on site.
8,2	The Provincial Head may at any stage of the process request proof of budgetary provisions for rehabilitation and closure of project.	N/A	Statement. Noted.
9	SITE SPECIFIC CONDITIONS		
9,1	Pollution into the rehabilitated areas and beyond including acid mine drainage should be managed;	0	As per the latest Water Quality Monitoring Report, upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein.
9,2	All open voids should be filled;	2	All open voids were not filled.
9,3	PES and EIS should be known of all wet/lands and streams, if applicable. The rehabilitation must set a PES and EIS objective to achieve.	4	The PES and EIS were determined during recent specialist studies.

Ref #	Condition	Compliance Rating	Comments/ Verification
9,4	The plant species plan should be submitted six (6) months after the issuance of the licence.	0	No Plant Species Plan was submitted to DWS six (6) months after the issuance of the IWUL.
9,5	No wetland rehabilitation should take place in open void areas.	N/A	No wetland rehabilitation is taking place in open void areas.
9,6	Alien vegetation species management plan should be submitted six (6) months after the issuance of the licence.	0	No Alien Invasive Plant Management Plan was submitted to DWS six (6) months after the issuance of the IWUL.
9,7	Overall rehabilitation plan of the colliery should be submitted six (6) months after the issuance of the licence.	0	No overall Rehabilitation Pan for Elandsfontein was submitted to DWS six (6) months after the issuance of the IWUL.
APPENDIX III: SECTION 21(G) OF THE ACT: DISPOSING OF WASTE IN A MANNER WHICH MAY DETRIMENTALLY IMPACT ON A WATER RESOURCE			
1	CONSTRUCTION AND OPERATION		
1,1	The Licensee shall carry out and complete all the activities, including the construction and operation of the Pollution Control Dam according to the Report and according to the final plans Technical Design Report as approved by the Provincial Head.	0	PCDs were not constructed according to design plans.
1,2	The construction of the Pollution Control Dam must be carried out under the supervision of a professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990), as approved by the designer.	0	PCDs were not constructed according to design plans or under the supervision of a professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990) .
1,3	Within 30 days after the completion of the activities referred here in accordance with the relevant provisions of this licence, the Licensee shall in writing, under reference 16/2/7/B100/C11, inform the Provincial Head thereof. This shall be accompanied by a signature of approval from the designer referred to above that the construction was done according to the design plans referred to in the Report.	0	PCDs were not constructed according to design plans.
1,4	The Licensee must ensure that the disposal of the slurry and the operation and maintenance of the system are done according to the provisions in the Report.	N/A	The mine is not disposing of slurry. A filter press is used.
1,5	The Licensee shall as well submit a set of as-built drawings to the Provincial Head after the completion of the Pollution Control Dams.	0	No As-built drawings for the PCDs were submitted to the DWS.

Ref #	Condition	Compliance Rating	Comments/ Verification
1,6	The Pollution Control Dams shall be operated and maintained to have a minimum freeboard of 0.8 metres above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood event on top of its mean operating level.	0	The PCDs has not been constructed to have an overflow or freeboard.
1,7	The Licensee shall use acknowledged methods for sampling and the date, time and sampler must be indicated for each sample.	4	Acknowledged methods for sampling, date, time and sampler were indicated in the Quarterly Water Quality Report 2019.
1,8	Flow metering devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than once in two years. Calibration certificates shall be available for inspection by the Provincial Head or his representative upon request.	4	Calibration certificates for flow meters were available.
2	STORAGE OF WATER CONTAINING WASTE		
2,1	The Licensee is authorised to dispose of a maximum quantity in cubic metres (m ³) of waste per year (annum) into the waste management facilities on the properties described in Table 4 (page 19 of the licence).	2	The Quarterly Flow Meter Readings Report 2019 indicates several exceedances of disposal into the waste management facilities as described in Table 4.
3	DUST SUPPRESSION		
3,1	This licence authorises the use of forty four thousand one hundred cubic metres (44 100 m ³) of wastewater per annum from the pollution control dam for dust suppression on Portion 1, 7, 8, and 14 Farm Elandsfontein 309 JS.	2	Incomplete water usage / flow meter readings for dust suppression were recorded.
3,2	No excessive dust suppression that leads to saturated conditions and no dust suppression during wet periods.	4	No excessive dust suppression.
3,3	An annual soil chemistry map must be compiled and submitted, with a report, to the Provincial Head. The soil chemistry map shall cover the areas covered by the dust suppression and map concentrations of pH, Electrical Conductivity and Sodium. This map must be interpreted by a professional soil scientist and recommendation and conclusions must be included in a report.	4	TBC was commissioned to assess the results from soil samples tested for potential degradation/contamination via dust suppression. The report was submitted to the DWS.

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Ref #	Condition	Compliance Rating	Comments/ Verification
4	QUALITY OF WASTE WATER		
4,1	The quality of wastewater disposed of on the waste water containment facility shall not exceed the following limits as specified in Table 5 (page 21 of the licence).	0	The Quarterly Water Quality Report 2019 recorded elevated concentrations in the waste water containment facilities.
5	MONITORING OF WASTE WATER		
5.1.1	The Licensee shall monitor the water quality of the treated water continuously with online water quality monitoring of the key variables as indicated in Table 5 (page 21 of the licence).	N/A	Water from these facilities are not treated.
5,2	SURFACE WATER QUALITY		
5.2.1	The Licensee shall submit within one month of the date of the issuance of the licence, a surface water quality monitoring programme, with the co-ordinates and the criteria used in the selection of the water monitoring points.	4	The Quarterly Water Quality Report 2019 indicating the surface water quality monitoring programme, with the co-ordinates and the criteria used in the selection of the water monitoring points, was submitted to DWS.
5.2.2	The location of additional monitoring points, which may from time to time be specified by the Provincial Head, shall be communicated in writing to the Licensee and this communication shall be regarded as part of the licence.	N/A	Statement. Noted.
5.2.3	Monitoring for quality shall be carried out at the monitoring points listed in Table 6 (page 22 of the licence).	4	Surface water monitoring points are in line with the WUL.
5.2.4	The variables (constituents) in Table 7 (page 22 of the licence) shall be included in the surface monitoring programme.	4	The variables analysed are in line with the WUL.
5.3.1	The Licensee shall submit within one month of the date of the issuance of this licence, a ground water quality monitoring programme which must provide the detailed criteria followed in the establishment of the groundwater monitoring point as described in Table 8 (page 23 of the licence).	4	The water monitoring programme is part of the quarterly monitoring reports and these reports were being submitted to the authorities on a quarterly basis. It was noted that the groundwater monitoring points have changed over time.
5.3.2	The impact of the activities of the mine on the ground water shall not exceed the groundwater limit detailed in the water quality reserve for the area as indicated in Table 9 (page 24 of the licence).	2	Boreholes GW-05, ECBH-02, 03, 04 and 05, Eland 11 and ELNBH-03 recorded elevated concentrations.

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Ref #	Condition	Compliance Rating	Comments/ Verification
6	STORM WATER MANAGEMENT		
6,1	Storm water leaving the Licensee's premises shall in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.	0	Upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein
6,2	Increase runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the stream.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
6,3	Storm water shall be diverted from the site and roads and shall be managed in such a manner as to disperse runoff and concentrating the storm water flow.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
6,4	Where necessary works must be constructed to attenuate the velocity of any storm water discharge and to protect the banks of the affected watercourses.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
6,5	Storm water control works must be constructed, operated and maintained in a sustainable manner throughout the impacted area.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
6,6	Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the streams.	N/A	Repeat of Condition 6.2 and therefore not scored again.
6,7	All storm water that would naturally run across the pollution areas shall be diverted via channels and trapezoidal drains designed to contain the 1:50 year flood.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
6,8	The polluted storm water system shall be designed and implemented to provide suitable routing and pumping capacity for contaminated storm water from the individual facilities to the respective storm water dams in accordance with the design specifications as contained in the Technical Design Report.	2	Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.
7	ACCESS CONTROL		
7,1	Strict access procedures must be followed in order to gain access to the property. Access to the Pollution Control Dams must be limited to authorised employees of the Licensee and their Contractors only.	4	All entrance gates are manned during the hours of operation and locked outside the hours of operational. Notices prohibiting unauthorized persons from entering and indicating risks were displayed at the entrance to Elandsfontein, as well as PCD3.

Ref #	Condition	Compliance Rating	Comments/ Verification
7,2	Notices prohibiting unauthorised persons from entering the areas referred to in condition 2.1 of Appendix III, as well as internationally acceptable signs indicating the risks involved in case of an unauthorised entry must be displayed along the boundary fence of these areas.	4	Notices prohibiting unauthorized persons from entering and indicating risks were displayed at the entrance to Elandsfontein, as well as PCD3.
7,3	The Licensee must take all reasonable steps to maintain service roads in a condition which ensures unimpeded access to the mine residue facility for vehicles involved in closure.	4	Access roads to the residue facility are maintained.
7,4	The Licensee must ensure that all entrance gates are manned during the hours of operation/closure construction and locked outside the hours of operational/closure construction.	4	All entrance gates are manned during the hours of operation and locked outside the hours of operational.
8	CONTINGENCIES		
8,1	Accurate and up-to-date records shall be kept of all system malfunctions resulting in non-compliance with the requirements of this licence. The records shall be available for inspection by the Provincial Head upon request. Such malfunctions shall be tabulated under the following headings with a full explanation of all the contributory circumstances: Operating errors. Mechanical failures (including design installation or maintenance). Environmental factors (e.g. flood). Loss of supply services (e.g. power failure). Other causes.	2	Incidents are being recorded in an Incident Register - the reasons or contributory factors are not listed.
8,2	The Licensee must, within 24 hours, notify the Provincial Head of the occurrence or potential occurrence of any incident which has the potential to cause, or has caused water pollution, pollution of the environment, health risks or which is a contravention of the licence conditions.	4	During 2019, two reportable incidents occurred: → A section of the wetland burned down; and → PCD3 overflowed. Both incidents were reported to the DWS within 24 hours.
8,3	The Licensee must, within 14 days, or a shorter period of time, as specified by the Provincial Head, from the occurrence or detection of any incident referred above, submit an action plan, which must include a detailed time schedule, to the satisfaction of the Provincial Head of measures taken to: Correct the impacts resulting from the incident. Prevent the incident from causing any further impacts. Prevent a recurrence of a similar incident.	4	Action plans are included in the Incident Register.

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Ref #	Condition	Compliance Rating	Comments/ Verification
9	REPORTING		
9,1	The Licensee shall update the water balance annually and calculate the loads of waste emanating from the activities. The Licensee shall determine the contribution of their activities to the mass balance for the water resource and must furthermore co-operate with other water users in the catchment to determine the mass balance for the water resource reserve compliance point.	2	The water balance has not been updated for 2019 – it is updated as part of the IWUL renewal and amendment process.
9,2	The Licensee shall submit the results of analysis for the monitoring requirements to the Provincial Head on a quarterly basis under Reference number 16/2/7/B100/C11.	4	The results of analysis for the monitoring requirements are included in the Quarterly Water Quality Report 2019.
9,3	The Licensee shall submit the nature and the quality of the waste disposed into the following dams: Pollution control dam. Overburden Stockpile. Run of Mine Coal.	4	The nature and quality of wastewater disposed are included in the Quarterly Water Quality Report 2019.
10	AUDITING		
10,1	The Licensee shall conduct an annual internal audit on compliance with the conditions of this licence. A report on the audit shall be submitted to the Provincial Head within one month of finalisation of the report and shall be made available to an external auditor should the need arise.	2	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS.
10,2	The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 3 (three) months of the date this licence was issued and a report on the audit shall be submitted to the Provincial Head within one month of finalisation of the report.	2	MDT Environmental (Pty) Ltd (MDT)) completed an external audit in March 2019 for the period October 2017 to November 2018 - no proof of submission.
11	INTEGRATED WATER AND WASTE MANAGEMENT		
11,1	The Licensee must prepare an Integrated Water and Waste Management Plan (IWWMP), which must together with the Rehabilitation Strategy and Implementation Programme (RSIP), be submitted to the Provincial Head for approval within six (6) year from the date of issuance of this licence.	2	A 2018 updated to the IWWMP was completed and submitted to DWS. The 2019 update to the IWWMP and RSIP forms part of the IWUL renewal and amendment process.
11,2	The IWWMP and RSIP shall thereafter be updated and submitted to the Provincial Head for approval, annually.	2	A 2018 updated to the IWWMP was completed and submitted to DWS. The 2019 update to the IWWMP and RSIP forms part of the IWUL renewal and amendment process.

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Ref #	Condition	Compliance Rating	Comments/ Verification
11,3	The Licensee must, at least 180 days prior to the intended closure of any facility, or any portion thereof, notify the Provincial Head of such intention and submit any final amendments to the IWWMP and RSIP, as well as a final Closure Plan, for approval.	N/A	Elandsfontein is not intending to close any facility within 180 days.
11,4	The Licensee shall make full financial provision for all investigations, designs, construction, operation and maintenance for a water treatment plant should it become a requirement as a long-term water management strategy.	N/A	Elandsfontein is investigating various options for water treatment. Once the details become available, the provisions should be made.
12	SITE SPECIFIC CONDITIONS		
12,1	Mass transport modelling around the mine should be submitted to the Department within six (6) months.	4	Mass transport modelling around Elandsfontein will be submitted as part of the IWUL renewal and amendment process.
12,2	More recent numerical groundwater flow modelling that shows the impact of mine on the groundwater quantity should be submitted to the Department within six (6) months.	4	Recent numerical groundwater flow modelling that shows the impact of mine on the groundwater quantity will be submitted as part of the IWUL renewal and amendment process.
12,3	A clear groundwater monitoring network and monitoring programme should be submitted to the Department within six (6) months.	4	A clear groundwater monitoring network and monitoring programme was submitted to the DWS, as part of the Quarterly Water Quality Report 2019.
12,4	Management of pollution into the rehabilitated areas and beyond including acid mine drainage.	N/A	The requirement from this condition is not clear.
12,5	All voids should be filled.	2	Not all voids were filled.
12,6	Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) should be known of all wetlands and streams, if applicable. The rehabilitation must set a PES and EIS objective to achieve.	4	The PES and EIS were determined during recent specialist studies.
12,7	The plant species plan should be submitted six (6) months after the issuance of the licence.	0	No Plant Species Plan was submitted to DWS six (6) months after the issuance of the IWUL.
12,8	No wetland rehabilitation should take place in open void areas.	N/A	No wetland rehabilitation is taking place in open void areas.
12,9	Alien vegetation species management plan should be submitted six (6) months after the issuance of the licence.	0	No Alien Invasive Plant Management Plan was submitted to DWS six (6) months after the issuance of the IWUL.
12,1	Overall rehabilitation plan of the colliery should be submitted six (6) months after the issuance of the licence.	0	No overall Rehabilitation Plan for Elandsfontein was submitted to DWS six (6) months after the issuance of the IWUL.

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Ref #	Condition	Compliance Rating	Comments/ Verification
12,11	The rehabilitation plan for the non-compliant voids and the Pollution control dams must be submitted to the Department for approval before implementation.	0	No Rehabilitation Plan for the non-compliant voids and the pollution control dams was submitted to the DWS for approval before implementation.
12,12	The watercourse on which the Pollution control dam 3 has been positioned must be diverted and such diversion design details/drawings must be submitted to the Department for approval before implementation.	0	No diversion design details/drawings were submitted to the DWS for approval before implementation of the diversion of the watercourse at PCD3.
12,13	The monitoring and mitigation plan around existing non-compliant facilities at the mine must be submitted to the Department within sixty (60) working days of the issuance of a water use licence.	0	No Monitoring and Mitigation Plan around existing non-compliant facilities at the Elandsfontein was submitted to the DWS within sixty (60) working days of the issuance of the IWUL.
12,14	The under drainage system for the discard dump must include lined channels or pipelines that discharge directly into pollution control dam 3 not into the environment is currently indicated.	0	No under drainage system at the discard facility.

5.3 FINDINGS OF THE AUDIT

The key findings of the audit are provided in Table 4.

Table 4: Findings of the audit.

No	IWUL Ref #	Condition	Finding
1	A1, 1	This licence is subject to all applicable provisions of the National Water Act, 1998 (Act 36 of 1998).	No exemption from GN 704 requirements, including mining activities and infrastructure within 100m or within the 1:100-year floodline, and the construction of haul roads with carbonaceous material.
2	A1, 3 A1, 4	The Licensee shall immediately inform the Provincial Head of any change of name, address, premises and/or legal status. If the property(ies) in respect of which this licence is issued is subdivided or consolidated, the Licensee must provide full details of all changes in respect of the properties to the Provincial Head of the Department within sixty (60) days of the said change taking place.	Namane Resources (Pty) Ltd (Namane) bought Elandsfontein Colliery (Pty) Ltd (Elandsfontein) from Fraser Alexander - the DWS was not notified of the change in legal status. A recent survey of Elandsfontein was undertaken - the information from this survey was not submitted to the DWS.
3	A1, 5	If a water user association is established in the area to manage the resource, membership of the Licensee to this association is compulsory and rules, regulations and water management stipulations of the association must be adhered to.	Elandsfontein is not part of the Olifantsriver Forum.
4	A1, 9	The Licensee shall conduct an annual internal audit on compliance with the conditions of licence. A report on the audit shall be submitted to the Provincial Head within one month of the finalisation of the audit.	An annual internal audit was undertaken in April 2018 - no proof of submission to DWS.
5	A3, 10,2	The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 3 (three) months of the date this licence was issued and a report on the audit shall be submitted to the Provincial Head within one month of finalisation of the report.	MDT Environmental (Pty) Ltd (MDT)) completed an external audit in March 2019 for the period October 2017 to November 2018 - no proof of submission.
6	A1, 12	If the water use described in this licence is not exercised within 3 years of the date of the licence, the authorization will be withdrawn. Upon commencement of the water use, the Licensee must inform the relevant authority in writing.	Most of the water uses commenced within 3 years from the issuance of the IWUL - the DWS was not notified of the commencement of the water uses.
7	A1, 16	Licensee shall use water efficiently to minimize total water intake, void usage of water where possible, implement "good" housekeeping and operating practices, and maximize the reuse/ recycle of contaminated water.	Water is re-used from the PCDs and containment facilities. Housekeeping concerns at the salvage yard.

No	IWUL Ref #	Condition	Finding
8	A2, 1,1	This licence authorises Elandsfontein Colliery (Pty) Ltd for the watercourse crossings in terms of section 21 (c) and (i) of the Act, as set out in Table 2 and in the water use licence application reports submitted to the Department or Provincial Head.	Most of the Section 21 C & I activities are being undertaken in line with Table 2 - the coordinates for River Crossing 4 might be incorrect.
9	A2, 1.2 A2, 4.4	<p>The Licensee shall carry out and complete all the activities listed under condition 1.1 according to the following:</p> <ul style="list-style-type: none"> • Reports submitted to the Regional Head; • Elandsfontein Coal mine Conceptual Rehabilitation Plan by Digby Wells Environmental dated October 2014; • Conditions of this licence; and • Any other written direction issued by the Provincial Head in relation to this licence. <p>Rehabilitation must be concurrent with construction.</p>	Several deficiencies with the requirements of the WUL and listed reports. The deficiencies include but are not limited to; surface- and groundwater pollution and a backlog in rehabilitation.
10	A2, 1,4	The conditions of the authorisation must be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of these activities and the Licensee must take such measures that are necessary to bind such persons to the conditions of this licence.	The IWUL conditions were not brought to the attention of all persons associated with the undertaking of the activities, with no measures to bind such persons to the conditions.
11	A2, 2.1.1 A2, 2.4	<p>Work method statements, site plan(s) and detailed design drawings for the construction of all infrastructure of impeding and/or diverting flow of watercourses must be submitted to the Provincial Head for a written approval before construction and implement as directed. The foregoing must indicate the regulated activities, marking the limits of disturbance in relation to the impacted watercourse(s); morphology of the watercourse(s); site specific impacts; and environmental management, particularly erosion and sediment, controls and measures;</p> <p>For all the activities listed under condition 1.1, Table 2, "as-built" plan(s) and engineering drawing(s) prepared by a registered professional engineer, must be submitted to the Provincial Head within six(6) months of the completion of new activities and for existing water uses within six (6) months of the date of issuance of this licence. These plan(s) and drawing(s) must indicate the watercourse(s) including wetland boundaries and layout and structure location(s) of all infrastructure of impeding and/or diverting flow of watercourses as well as alterations to watercourse(s) on the property (ies</p>	Various documents required for the construction of the Section 21 C & I facilities were not submitted to the DWS, including: method statements, site plan and design drawings. No as-built drawings of the existing water uses were submitted to DWS.

No	IWUL Ref #	Condition	Finding
12	A2, 3.1.1	<p>Storm water management practices shall be constructed, operated and maintained in a sustainable manner throughout the project and for the water use activities set out in condition 1.1 of appendix II and 2.1 of appendix IV and shall include but are not limited to the following:</p> <ul style="list-style-type: none"> • Increase runoff due to vegetation clearance and/or soil compaction shall be managed, and steps shall be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the watercourse(s). • Stormwater must be diverted from the Elandsfontein (Pty) Ltd and must be managed in such a manner as to disperse runoff and to prevent the concentration of stormwater flow. • The velocity of stormwater discharges must be attenuated, and the banks of the watercourses protected; • Stormwater leaving the Licensee's premises must in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour od gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises; • Drainage next to the construction works and mining area must be diverted away from the watercourse(s) to ensure that any contaminated runoff does not flow directly into the watercourse(s) to ensure that any contaminated runoff does not flow directly into the watercourse(s) as a stormwater discharge. 	<p>Stormwater management was not adequate however, the Stormwater Management Plan was updated and with implementation, the stormwater management should improve.</p>
13	A2, 3.3.5	<p>The Licensee must ensure that the quality of the water to downstream water users does not decrease because of the water use activities listed under condition 1.1, Appendix II.</p>	<p>Upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein.</p>
14	A2, 3.3.9	<p>Any hazardous substances must be handled according to the relevant legislation relating to transport, storage and use of the substance.</p>	<p>The fuel storage area at the workshops was not fitted with a valve to contain spillages.</p>
15	A2, 3.3.11	<p>The Licensee has to indicate to the Provincial Head within sixty (60) days after issuance of this licence, the strategic placement of bio-swale, bio-filters, silt, litter and hydrocarbon (oil) traps to minimise the risk of pollutants entering the natural drainage system of the area.</p>	<p>The DWS was not notified of the measures to be implemented to minimise the risk of pollutants entering the natural drainage system.</p>
16	A2, 3.5.5	<p>Alien and invader vegetation must not be allowed to further colonise the area, and all new alien vegetation recruitment must be sustainably eradicated or controlled.</p>	<p>The Alien Invasive Plant Management Plan was not implemented.</p>

No	IWUL Ref #	Condition	Finding
17	A2, 3.5.12	Necessary erosion prevention mechanisms must be employed to ensure the sustainability of all structures and activities and to prevent instream sedimentation.	Erosion concerns near the watercourse crossing at the Western Opencast Pit.
18	A2, 4,1	The Licensee must embark on a systematic long-term rehabilitation programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after completion of the activities, which must include, but not be limited to the rehabilitation of disturbed and degraded riparian areas to restore and upgrade the riparian habitat integrity to sustain a bio-diverse riparian ecosystem.	No Wetland Management and Rehabilitation Plan.
19	A2, 4,8	A photographic record must be kept as follows and submitted with reports as set out in section 5, Appendix II:	No photographic records were kept for the Section 21 C & I water uses before, during and after construction.
20	A2, 4.10 A2, 4.12 A2, 9.4 A2, 9.6 A2, 9,7 A2, 12,11 A2, 12.13	<p>A comprehensive and appropriate rehabilitation and management programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after construction must be developed and submitted to the Provincial Head for written approval within one (1) month from the date of issuance of this licence.</p> <p>A Wetland Management and Rehabilitation Plan must be compiled by a wetland specialist when wetlands are affected and submitted to the Provincial Head for written approval.</p> <p>The plant species plan should be submitted six (6) months after the issuance of the licence.</p> <p>Alien vegetation species management plan should be submitted six (6) months after the issuance of the licence.</p> <p>Overall rehabilitation plan of the colliery should be submitted six (6) months after the issuance of the licence.</p> <p>The rehabilitation plan for the non-compliant voids and the Pollution control dams must be submitted to the Department for approval before implementation.</p> <p>The monitoring and mitigation plan around existing non-compliant facilities at the mine must be submitted to the Department within sixty (60) working days of the issuance of a water use licence.</p>	<p>Various plans and programmes were not available and/ or submitted to the DWS: These include:</p> <ul style="list-style-type: none"> • A comprehensive and appropriate rehabilitation and management programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after construction. • A wetland management and rehabilitation plan. • The plant species plan. • Alien vegetation species management plan. • Overall rehabilitation plan of the colliery. • The rehabilitation plan for the non-compliant voids and the Pollution control dams. • The monitoring and mitigation plan around existing non-compliant facilities.
21	A2, 5,1	The Provincial Head must be notified in writing one week prior to commencement of the licensed activity(s) and again upon completion of the activity(s).	No specific notification was made to the Provincial Head regarding commencement or completion although the authorised Section 21 C & I activities are in varying stages of completion.

No	IWUL Ref #	Condition	Finding
22	A2, 5,8	An Environmental Management/Monitoring Committee (EMC) must be established consisting of, but not limited to, representatives of the Licensee, the Responsible Person(s) for ensuring compliance with this licence, the Department of Water and Sanitation, the relevant Department of Environmental Affairs, the Department of Minerals and Resources, and other stakeholders.	No Environmental Management/Monitoring Committee (EMC) was established.
23	A2, 9,2	All open voids should be filled;	All open voids were not filled.
24	A3, 1,1 A3, 1.2 A3, 1.3 A3, 1.5 A3, 1.6	<p>The Licensee shall carry out and complete all the activities, including the construction and operation of the Pollution Control Dam according to the Report and according to the final plans Technical Design Report as approved by the Provincial Head.</p> <p>The construction of the Pollution Control Dam must be carried out under the supervision of a professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990), as approved by the designer.</p> <p>Within 30 days after the completion of the activities referred here in accordance with the relevant provisions of this licence, the Licensee shall in writing, under reference 16/2/7/B100/C11, inform the Provincial Head thereof. This shall be accompanied by a signature of approval from the designer referred to above that the construction was done according to the design plans referred to in the Report.</p> <p>The Licensee shall as well submit a set of as-built drawings to the Provincial Head after the completion of the Pollution Control Dams.</p> <p>The Pollution Control Dams shall be operated and maintained to have a minimum freeboard of 0.8 metres above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood event on top of its mean operating level.</p>	<p>PCDs were not constructed according to design plans or under the supervision of a professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990).</p> <p>No As-built drawings for the PCDs were submitted to the DWS.</p> <p>The PCDs has not been constructed to have an overflow or freeboard.</p>
25	A3, 2,1	The Licensee is authorised to dispose of a maximum quantity in cubic metres (m ³) of waste per year (annum) into the waste management facilities on the properties described in Table 4 (page 19 of the licence).	<p>The Quarterly Flow Meter Readings Report 2019 indicates several exceedances of disposal into the waste management facilities as described in Table 4.</p> <p>Some of the current 21 G activities were not included in the 2015 WUL. These include the stockpiles at the current Northern and Main Opencast Pits and the product stockpile areas near the plant.</p>
26	A3, 4,1	The quality of wastewater disposed of on the wastewater containment facility shall not exceed the following limits as specified in Table 5 (page 21 of the licence).	<p>The Quarterly Water Quality Report 2019 recorded elevated concentrations in the wastewater containment facilities.</p> <p>Boreholes GW-05, ECBH-02, 03, 04 and 05, Eland 11 and ELNBH-03 recorded elevated concentrations.</p>

No	IWUL Ref #	Condition	Finding
	A3, 5.3.2 A3, 6,1	The impact of the activities of the mine on the ground water shall not exceed the groundwater limit detailed in the water quality reserve for the area as indicated in Table 9 (page 24 of the licence). The impact of the activities of the mine on the ground water shall not exceed the groundwater limit detailed in the water quality reserve for the area as indicated in Table 9 (page 24 of the licence).	Upstream and downstream monitoring points recorded elevated concentrations, typically associated with coal washing/mining activities. The upstream monitoring point (TCM-SW02) recorded elevated concentrations, with a deterioration of water quality towards the downstream monitoring point (TCM-SW01), indicating pollution from Elandsfontein
27	A3, 8,1	Accurate and up-to-date records shall be kept of all system malfunctions resulting in non-compliance with the requirements of this licence. The records shall be available for inspection by the Provincial Head upon request. Such malfunctions shall be tabulated under the following headings with a full explanation of all the contributory circumstances: Operating errors. Mechanical failures (including design installation or maintenance). Environmental factors (e.g. flood). Loss of supply services (e.g. power failure). Other causes.	Incidents are being recorded in an Incident Register - the reasons or contributory factors are not listed.
28	A3, 11,1 A3, 11.2	The Licensee must prepare an Integrated Water and Waste Management Plan (IWWMP), which must together with the Rehabilitation Strategy and Implementation Programme (RSIP), be submitted to the Provincial Head for approval within six (6) year from the date of issuance of this licence. The IWWMP and RSIP shall thereafter be updated and submitted to the Provincial Head for approval, annually.	A RSIP has not been prepared and submitted to the department. A 2018 updated to the IWWMP was completed and submitted to DWS. The 2019 update to the IWWMP and RSIP forms part of the IWUL renewal and amendment process.
29	A3, 12,12	The watercourse on which the Pollution control dam 3 has been positioned must be diverted and such diversion design details/drawings must be submitted to the Department for approval before implementation.	No diversion design details/drawings were submitted to the DWS for approval before implementation of the diversion of the watercourse at PCD3.
30	A3, 12,13	The monitoring and mitigation plan around existing non-compliant facilities at the mine must be submitted to the Department within sixty (60) working days of the issuance of a water use licence.	No Monitoring and Mitigation Plan around existing non-compliant facilities at the Elandsfontein was submitted to the DWS within sixty (60) working days of the issuance of the IWUL.
31	A3, 12,14	The under-drainage system for the discard dump must include lined channels or pipelines that discharge directly into pollution control dam 3 not into the environment is currently indicated.	No under drainage system at the discard facility.

6 PHOTOGRAPHIC RECORD



Figure 2: Use of water from PCD 3 for dust suppression.



Figure 3: PCD 3.



Figure 4: Signage and fencing at PCD3.



Figure 5: Plant Area.



Figure 6: Groundwater monitoring borehole.



Figure 7: Western Opencast Pit void used for containment of runoff water.



Figure 8: Water attenuation on access road across watercourse.



Figure 9: Erosion and silt wash on the access road leading to the watercourse.



Figure 10: Inadequate housekeeping at the salvage yard.



Figure 11: Lack of valve at the bund wall drain and seepage on the outside of the bund wall of the bulk diesel storage area adjacent to the workshop offices.

7 CONCLUSION

Geo Soil and Water cc (GSW) was appointed by Elandsfontein to assess and report on compliance with the IWUL, approved by the DWS on 21 October 2015 and amended on 23 July 2019 (Licence No: 04/B20G/CGI/3843).

Compliance with the requirements of the IWUL was evaluated using pre-determined scoring criteria as described in Section 4.2. The results of the evaluation are provided in Section 5.2 and the findings are described in Section 5.3. Each condition in the IWUL was weighted equally in order to determine a compliance score. Utilising this scoring system, a total compliance score of **53.46%** was obtained for this audit.

8 ASSUMPTIONS, LIMITATIONS AND GAPS IN KNOWLEDGE

The following assumptions, limitations and gaps in knowledge apply to the audit:

- The information contained in this report was sourced from information and data supplied by third parties that is assumed to be complete, valid and true.
- This report is based on information available at the time of the audit. The information, data, observations and evidence on what this report is based is beyond the control of GSW and may change without notice. GSW will not be liable for any loss or damage which may arise directly or indirectly because of such changes.
- No representation or warranty, express or implied, is or will be made in relation to, and no responsibility or liability is or will be accepted by GSW in relation to the accuracy of this report.
- Where reference is made to legislation or other statutory provisions in this report the original legislation or other statutory provisions will always take precedence and the reader is directed to revert to the original legislation or statutes.
- This audit does not specifically assess compliance with any other permits, licences or authorisations applicable to the operations.