SASOL SECUNDA OPERATIONS: WATER AND ASH

ENVIRONMENTAL AUTHORISATION COMPLIANCE AUDIT REPORT
14.25 EV 10 - WASTE RECYCLING FACILITY

22 JULY 2019
ENVIRONMENTAL AUTHORISATION COMPLIANCE AUDIT REPORT

14.25 EV 10 - WASTE RECYCLING FACILITY

SASOL SECUNDA OPERATIONS: WATER AND ASH

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<td>Prepared by</td>
<td>Tutayi Chifadza</td>
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<td>Authorised by</td>
<td>Jenny Cope</td>
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This Compliance Audit report (Report) has been prepared by WSP Environmental (Pty) Ltd (WSP) on behalf and at the request of Sasol Synfuels: Secunda Operations (Client), to provide the Client with an understanding of their compliance with the conditions included in the Environmental Authorisation.

Unless otherwise agreed by us in writing, we do not accept responsibility or legal liability to any person other than the Client for the contents of, or any omissions from, this Report.

To prepare this Report, we have reviewed only the documents and information provided to us by the Client or any third parties directed to provide information and documents to us by the Client. We have not reviewed any other documents in relation to this Report, except where otherwise indicated in the Report.
# PRODUCTION TEAM

**SASOL**

- SHE: Environmental Compliance Specialist: Broni van der Meer
- Water and Ash Production Senior Manager: Rakesh Durjan

**WSP**

- Associate: Jenny Cope
- Lead Auditor: Anri Scheepers
- Lead Auditor: Ashlea Strong
- Consultant: Tutayi Chifadza
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A ENVIRONMENTAL AUTHORISATION (14.25 EV 10:
WASTE RECYCLING FACILITY)
1 INTRODUCTION

1.1 TERMS OF REFERENCE

Sasol South Africa (Pty) Limited operating through its Secunda Synfuels Operations (Sasol) appointed WSP Environmental (Pty) Ltd (WSP) as an independent environmental consultant, to undertake a compliance audit and compile an audit report according to the requirements of the National Environmental Management Act (No. 107 of 1998) as amended (NEMA). This report presents the findings of the compliance audit completed for the Environmental Authorisation (EA) (Reference number: 14.25 EV 10 issued on 26 June 2002) for the period December 2014 to February 2019.

1.2 WASTE RECYCLING FACILITY (AUTHORISATION NUMBER: 14.25 EV 10)

Due to generation of waste on the Sasol Synfuels Complex (SSF), Sasol proposed the development of a Waste Recycling Facility (WRF) that includes a tank farm and a blending facility for the products that will be recycled. Sasol applied for an authorisation for the facility and received it on 26 June 2002 with 14.25 EV 10 as the reference number from the Environmental Directorate of the Mpumalanga Department of Agriculture, Conservation and Environment. Furthermore, a waste management licence (WML) was issued by the Department of Environmental Affairs on 11 September 2014 for the WRF with reference number 12/9/11/L242/6/R1. The products recycled on the site are grouped into oil, tar and heavy oil, solids, sludge, contaminated oil and contaminated water. The technology used for the treatment of these products include thermal treatment, stabilisation/solidification, water treatment and bio-remediation. The WRF was established on Portions 5, 8, 14 of the farm Goedehoop 290 IS and Portions 1, 2, 5, 6, 9, 10, 11 of the farm Twistdraai 285 IS.

The implementation of the project aimed to reduce existing and future solid waste and waste streams at the SSF Complex. All effluent from the WRF is routed to an adequately designed, dedicated Waste Water Treatment facility and the effluent from this plant conforms to the Sasol’s Raw Water Standards before it is re-used in the SSF facility. Furthermore, no water from the Waste Recycling Facility is released to the natural water resources of the environment under normal circumstances.

When trucks arrive with waste streams from the Synfuels site, they first pass through the weighbridge before they go to Unit 10, the unloading zone. The whole site is concreted to prevent any spillages from the trucks from contaminating the ground. When trucks are unloading, any spills flow into the sewer system and then taken to a sump onsite. The different waste streams are unloaded from trucks and then flow to Unit 20 in individual tanks. Each tank at Unit 20 can be fed reagents from onsite tanks in order to balance out the pH, if required. A blended mixture of different proportions from each tank is then fed to the main feed tank that has a knockout tank adjacent to it to collect all the water from it after it settles out. Any oil is skimmed away by the oil separator and taken to the oil collection tank. The water in the knockout tank as well as any water that settles in the oil collection tank is then drained away to the sump. The blended mixture in the main feed tank is then pumped back to the process tanks on the Synfuels site for reuse.

The WRF collects all oil from all units around the Synfuels site as well as from the mining areas including used oil from Sasol employees. This oil is then sold to used oil recyclers after any water is drained away to the sump. The site also collects contaminated soil from the site and a bio-pile with microorganisms is used to help rehabilitate the soil. This can then be re-used for backfilling or for compaction on the ash facility. Construction of the facility was completed in 2004 and the facility was commissioned in 2005.

The location of the WRF on the Sasol Synfuels facility is shown in Figure 1-1 below.
Figure 1-1: Waste Recycling Facility Location on Sasol Synfuels (Source: Google Earth, 2018)
2 AUDIT SCOPE

The 7 April 2017 amendment to the Environmental Impact Assessment (EIA) regulations introduced the requirement for the auditing for all EAs and EMPs in effect on 8 December 2014 and submission of audit reports to the Department of Environmental Affairs (DEA) by 7 December 2019 and every five years thereafter. This audit is designed to meet the requirements of Regulation 34 of the EIA Regulations, 2014.

The Audit period runs from December 2014 to February 2019, therefore any construction related conditions that would have been relevant pre-December 2014 are considered not applicable (outside Audit period).

The objective of the audit was to:

— Assess the level of compliance with the conditions of the EAs;
— Identify and assess any new impacts and risks that result from undertaking the activity;
— Make recommendations in order to achieve compliance in terms of the EAs; and
— Ensure the commitments contained in Condition 7.1 of the EA are completed, more specifically:
  — “Records relating to the compliance/non-compliance with the conditions of the authorisation must be kept in good order. Such records must be made available to Department within seven (7) working days from the date of written request for such records by the Department”.


3 AUDIT METHODOLOGY

The International Organisation of Standardisation (ISO) 14010, ISO 14011 and ISO 14012 guideline documents were utilised as a template during the compliance audit process. This methodology ensures that the compliance audit was conducted in a systematic and independent manner that was documented and objectively evaluated to determine compliance to the EA conditions.

The audit process comprised the following:

- Confirmation of the audit checklist;
- Site inspection (25 March 2019);
- Review of documentation relevant to the conditions of the EA (e.g. records, permits/certificates/maintenance logs/monitoring results/previous reports etc.); and
- Compilation of an audit report.

3.1 AUDIT CHECKLIST

WSP compiled an audit checklist to assist with the EA compliance audit (Section 4).

3.2 SITE INSPECTION

Tutayi Chifadza conducted the site inspection on 25 March 2019. The findings and observations of the site visit are recorded and summarised in Section 4 with evidence included in Table 2. Key personnel interviewed included:

- Graeme Morrison (Production Foreman: WRF);
- Broni van der Meer (SHE Specialist: Environment); and
- Wessel Jansen Van Vuuren (Grade 2 Process Artisan).

3.3 DOCUMENTATION CONSIDERED

The following documentation was provided and considered:

- Audit report_383569_ISO 14001_2015_stage2_2018-07-27;
- SSO DQS ISO 14001 2015;
- Sasol WRF Audit Final Report_2018-08-21;
- Waste Management Procedure for Sasol Secunda_SGR-SHE-000017;
- EA_EX Handover_SSO_WA-Process Water;
- EA_EX Handover_SSO_WA-Process Water_Amend VP;
- Compliance_Availability_Secunda Complex;
- IWWMP SIC 2015 Final_2018-05-15;
- SIC IWWMP Action Plan: Annual Update_December 2018;
- Process Water_2016-12-06;
- Compliance_Waste_Secunda Complex;
- Compliance_Air_Secunda Complex;
- Environmental emergency procedure (Rev 6): SGR-SHE000023;
- Fugitive Emission Monitoring Plan_2018-10-18 updated;
- GWMonitor Report May 2018 Final_Prij6164rev-01_2018-11-20;
3.4 AUDIT COMPLIANCE ASSESSMENT

WSP utilised a pre-prepared audit checklist to assist with the audit execution (Table 2). The checklist included the conditions and associated requirements as specified in the EA.

Each condition was verified, either by reviewing documentation, interviewing employees and/or visually inspecting the facility. Each condition was rated in accordance with Table 1 below, and recommendations with associated target completion dates included.

It should be noted that some of the EA conditions were apportioned according to the elements requiring compliance assessment therein. Although some elements of the condition may have been compliant, if one of the elements was determined to be non-compliant, the entire condition has been reported as such (and counted as such during percentage compliance calculation). This apportionment further allowed for the development of focussed recommendations and timeframes.

Table 1: Compliance Level Definition and Target Completion Dates

<table>
<thead>
<tr>
<th>COMPLIANCE LEVEL</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliant (C)</td>
<td>Sasol could provide evidence for compliance with the commitment and condition and/or relevant actions were implemented.</td>
</tr>
</tbody>
</table>
| Non-compliant (NC)| Specified commitments, conditions and documents were not in place or implemented according to the requirements of the EA. Non-complaint conditions are given target completion dates, as follows:  
  – Short term: 0 – 6 months.  
  – Medium term: 6 – 12 months.  
  – Long term: 12 – 18 months. |
| Not applicable (N/A)| These are commitments are either not required yet or not applicable to Sasol.  
  – Conditions marked as “Noted” are considered information points only.  
  – Where conditions are considered “not auditable” within the scope of this assessment this is stated and explained within the condition commentary. |

Refer to Section 4 for the detailed audit findings (including evidence, recommendations and target completion dates).

3.5 AUDIT TEAM

The Auditor, Tutayi Chifadza, was hosted by Graeme Morrison, Broni van der Meer and Wessel Jansen Van Vuuren to whom we express our gratitude for their time and attention during our visit. A brief summary of the external auditors’ experience is provided below.

   – Auditor: Tutayi Chifadza

Tutayi Chifadza has 5 years’ experience and is an Environmental Consultant for WSP at the Johannesburg, Bryanston office in the Environmental Services division. He holds a Bachelor of Science (Honours), Applied
Science in Environmental Technology, and Bachelor of Science, Chemistry from the University of Pretoria. Tutayi has experience in undertaking Water Use Licence (WUL) applications, Basic Assessments and Environmental Impact Assessments as well as technical compliance audits including for Transnet and Sasol. He conducted Water Use Licence audits for four sections at South 32 and its reporting. He is also responsible for conducting WUL and Waste Management Licence audits.

— Lead Auditor and Quality Assurance: Ashlea Strong

Ashlea has 16 years’ experience and holds a Masters in Environmental Management; a B Tech (Nature Conservation), and a National Diploma (Nature Conservation); She is also a Certified Environmental Assessment Practitioner of South Africa (CEAPSA). She currently provides technical and strategic expertise on a diverse range of projects in the environmental management field, including environmental scoping and impact assessment studies, environmental management plans, waste and water management, as well as the provision of environmental management solutions and mitigation measures. She has been involved in the management of a number of large EIAs within South Africa and has environmental auditing and training experience and expertise. Ashlea has carried out over 50 compliance audits and is well versed in the audit process.

— Project Manager and Quality Assurance: Jenny Cope

Jenny is an environmental due diligence specialist, with over 11 years’ experience in the Environmental Sector. Jenny’s experience includes managing and completing projects and portfolios internationally; undertaking both detailed and broad Environmental, Health & Safety compliance and audits of across a range of sectors. Jenny’s recent experience includes completion and management of several pan-European and global projects requiring reviews of extensive virtual data rooms, on a very rapid turnaround, and providing clients with ‘red flag’ reports to give clear commercial advice. Jenny has worked both in environmental consultancies and with a developer, giving context to understanding the practicalities of implementing recommendations.

3.6 ASSUMPTIONS AND LIMITATIONS

This Report has been prepared by WSP on behalf and at the request of Sasol, to provide the Client an understanding of the Relevant Documents.

Unless otherwise agreed by us in writing, we do not accept responsibility or legal liability to any person other than the Client for the contents of, or any omissions from, this Report.

To prepare this Report, we have reviewed only the documents and information provided to us by the Client or any third parties directed to provide information and documents to us by the Client. We have not reviewed any other documents in relation to this Report and except where otherwise indicated in the Report.

The findings, recommendations and conclusions given in this report are based on the author’s best scientific and professional knowledge, as well as available information. This report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken; WSP and its staff reserve the right to modify aspects of the report including the recommendations if and when new information may become available from on-going research or further work in this field, or pertaining to this investigation.

Although WSP exercises due care and diligence in rendering services and preparing documents, WSP accepts no liability, and Sasol, by receiving this document, indemnifies WSP and its directors, managers, agents and employees against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with the services rendered, directly or indirectly by the use of the information contained in this document.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If this report is used as part of a main report, the report in its entirety must be included as an appendix or separate section to the main report.
## 4 AUDIT FINDINGS

### Table 2: Audit Findings – Environmental Authorisation

<table>
<thead>
<tr>
<th>REF</th>
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<th>FINDING</th>
<th>RECOMMENDATION</th>
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<tr>
<td>1</td>
<td>GENERAL CONDITIONS</td>
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<tr>
<td>1.1</td>
<td>This Authorisation refers only to the project as specified above. Separate applications must be lodged for any other development and/or activity at or near the proposed development, which is covered by Section 21 and 22 of the Act and Government Notice R1182 of 5 September 1997.</td>
<td>N/A</td>
<td>Noted.</td>
<td>None</td>
</tr>
<tr>
<td>1.2</td>
<td>Authorisation is only granted in terms of Section 22 of the Act and does not exempt the holder from compliance with other relevant legislation.</td>
<td>N/A</td>
<td>A full legal review does not form part of the scope of this Audit. The site is operated under ISO14001:2015, which requires the compilation of a legal register. Furthermore, WSP has been provided with the 2018 ISO audit for review, which specifically states that in terms of the WRF the “Site and document verification confirmed compliance to ISO9001:2015, ISO14001:2015, OHSAS18001:2007 regarding documentation, legal compliance, objectives and management plans”. Evidence:  — Audit report_383569_ISO 14001_2015_stage2_2018-07-27 — SSO DQS ISO 14001 2015</td>
<td>None</td>
</tr>
<tr>
<td>1.3</td>
<td>No development may take place on the area of concern without the necessary permits/approvals and/or service agreements, from other relevant authorities.</td>
<td>C</td>
<td>The site was approved for development when an EA was issued by the Provincial Department on 26 June 2002 with 14.25 EV 10 as the reference number. A WML was issued on 11 September 2014 for the WRF with reference number 12/9/11/L242/6/R1. A copy of the WML compliance audit report by Golder and Associates was available for review. The WML was inserted as Appendix A of the audit report. Evidence:  — 14.25.EV10_2002-06-26_EA1</td>
<td>None</td>
</tr>
<tr>
<td>REF:</td>
<td>COMMITMENT</td>
<td>COMPLIANCE</td>
<td>FINDING</td>
<td>RECOMMENDATION</td>
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<td>1.4</td>
<td>Copies of the documents mentioned in 1.3 above must be forwarded to this Department within three (3) months of the issuing of this Authorisation.</td>
<td>N/A</td>
<td>This condition is considered outside of the audit period (construction pre-2014). It is therefore considered not applicable.</td>
<td>None</td>
</tr>
<tr>
<td>1.5</td>
<td>This Department may change or amend any of the conditions in this authorisation if, in the opinion of the Department, it is environmentally justified.</td>
<td>N/A</td>
<td>Noted.</td>
<td>None</td>
</tr>
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</table>
| 1.6  | The development must comply to all mitigatory measures as set out in the Scoping report. | NC          | A copy of a letter from DWAF regarding the ‘Final Environmental Scoping Report for the Proposed Waste Recycling Facility at SSF’ was provided to the auditor, dated 31 October 2001. The letter references a report dated 27 September 2001 (Ref: 99-0196-10-005). The letter states that at this stage the final scoping report cannot be approved as final technologies and final design are not addressed. Sasol has stated no other information has been retained regarding the Scoping Report. In the absence of the Report, compliance with relevant operational phase conditions cannot be verified. **Evidence:**  
* 14.25.EV10_2001-10-31_final Scoping Report (letter relating to the Scoping report, dated 31 October 2001). | In the absence of the Scoping Report, this condition is considered non-rectifiable. Sasol should seek an amendment to this condition, to make reference to available auditable mitigatory measures. **Target Completion:** Long term |
<p>| 1.7  | A copy of this Authorisation must be made available at the offices of Sasol Synthetic Fuels at all times and all relevant staff, contractors and sub-contractors must be acquainted or made acquainted with the contents of this Authorisation. | C           | Copies of all authorisations and licences are sent to, and details communicated with, relevant business units. Copies of these documents are also available at the SHE: Environment department and on SAP EC and SharePoint. Sasol provided the auditor with the evidence that the responsible person, Rakesh Durjan (Senior Manager of Process Water Area), was made aware of the EA on 27 September 2016. All environmental aspects are shared to site personnel during induction. | None           |</p>
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<tr>
<td>1.8</td>
<td>The content of this document must be made known to all I&amp;AP within 14 days of date of this Authorisation.</td>
<td>N/A</td>
<td>This condition is considered outside of the audit period (construction pre-2014). It is therefore considered not applicable.</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>ESTABLISHMENT OF THE ENTERPRISE</td>
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<tr>
<td>2.1</td>
<td>This authorisation is repealed if construction has not been started within two (2) years from the date of this authorisation.</td>
<td>N/A</td>
<td>This condition is considered outside of the audit period (construction pre-2014). It is therefore considered not applicable.</td>
<td>None</td>
</tr>
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| 2.2  | Waste generated during construction and operational phase must be collected and disposed of at a licensed landfill site. | C | The auditor was advised that waste management is done through implementation of a Waste Management procedure (SGR-SHE-000017 REV10) that addresses the approach to manage waste in line with the internationally accepted waste hierarchy, whereby disposal to land is considered the last management option to undertake once avoidance, re-use, recycling, recovery and treatment options have been considered / eliminated. The procedure further details waste disposal and management through characterization and classification that is detailed in site-specific waste registers. Waste Registers were made available to the auditor. Hazardous waste streams generated comprise the following which are disposed of appropriately:  
   - WRF Sludge;  
   - *Ad hoc* shutdown stream organic and Phenolic waste; and  
   - Contaminated soil.  
Evidence:  
   - Waste Management Procedure for Sasol Secunda_SGR-SHE-000017 | None |

Evidence:
- EA_EX_Handover_SSO_WA_Process_Water
- EA_EX_Handover_SSO_WA_Process_Water_Amend_VP
- Compliance_Availability_Secunda_Complex
<table>
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<th>RECOMMENDATION</th>
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<tbody>
<tr>
<td>2.3</td>
<td>This Department should be notified in the earliest convenient time of any decision to discontinue the operation of the said development.</td>
<td>N/A</td>
<td>Noted. The WRF is still operational and there is no set date for decommissioning of the site.</td>
<td>None</td>
</tr>
<tr>
<td>2.4</td>
<td>In the event of 2.2 this Department shall be notified about the rehabilitation plans of the area where the facility will be located.</td>
<td>N/A</td>
<td>Noted. The WRF is still operational and there is no set date for decommissioning of the site.</td>
<td>None</td>
</tr>
<tr>
<td>2.5</td>
<td>A rehabilitation management plan must be submitted to the Department three (3) months before the decommissioning phase of the site.</td>
<td>N/A</td>
<td>Noted. The WRF is still operational and there is no set date for decommissioning of the site.</td>
<td>None</td>
</tr>
</tbody>
</table>

### 3 WATER POLLUTION & MANAGEMENT

<p>| 3.1  | Prevention of groundwater pollution should receive highest priority. | C | Sasol have measures in place to manage water on the site and prevent groundwater pollution. Measures are in place to make sure that storage of hazardous substances is within roofed and bunded facilities. Furthermore, stormwater drains are in place around the facility to prevent contamination of the surrounding environment. The whole site is concreted to prevent any groundwater pollution. Contaminated run-off from the WRF-area is collected in a number of sumps. Groundwater monitoring is conducted on a monthly basis and a sample groundwater monitoring report was available for review. JMA Consulting is an independent contractor appointed to complete sampling and bi-annual reporting for Sasol. The auditor verified that the Groundwater Quality Report compiled by JMA Consulting. Report number: JMA/50013 (2018) Prj16 Rev-01; Dated: May 2018 included groundwater monitoring of boreholes established for the WRF. The auditor noted that the WRF only influences borehole | In order to remain compliant with this condition going forwards, Sasol must continue to place highest priority on the prevention of groundwater pollution by investing in future-available mitigation techniques, and researching best available technology. Target period: Long term |</p>
<table>
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<tr>
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<th>FINDING</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>Proper drainage for storm water runoff should be put in place.</td>
<td>C</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Sasol have an Integrated Waste and Water Management Plan (IWWMP) which aims to identify the activities related to Sasol’s operations within the context of the receiving environment (with a focus on water resource protection), identify the risks associated with these operations, and subsequently manage these risks by means of an action plan committed to by Sasol management.</td>
<td>C</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Contaminated run-off from the WRF-area is collected in a number of sumps. Currently, the run-off contained in two (2) of these sumps are re-used in the pre-treatment processes, while the run-off from the other sumps are released to the Bossiespruit.</td>
<td></td>
<td></td>
<td>None</td>
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<tr>
<td></td>
<td>Evidence:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>— IWWMP SIC 2015 Final_2018-05-15</td>
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<tr>
<td>3.3</td>
<td>Any leachate from the Waste Recycling Facility must be drained to the current effluent treatment plant in accordance with Department of Water Affairs and Forestry requirements.</td>
<td>C</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>The site is concreted throughout and mainly constituted of storage tanks that are bunded. Any potential leaks from the tanks are collected in the two collection sumps on the site. Spill kits clean up any contaminants that fall on the site surface and anything washed</td>
<td>C</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>COMMITMENT</td>
<td>FINDING</td>
<td>RECOMMENDATION</td>
<td></td>
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<tr>
<td></td>
<td>Off by storm water on the site goes to the storm water sewer before they are taken for treatment.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>There is a biopile on the site made up of contaminated soil where microorganisms are added to break down the contaminants to enable for re-use on the site. Any potential leachate generated from this pile is collected in a number of sumps. Currently, the run-off contained in two (2) of these sumps are re-used in the pre-treatment processes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evidence:</td>
<td>Figure 4-1: Concreted site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REF:</td>
<td>COMMITMENT</td>
<td>COMPLIANCE</td>
<td>FINDING</td>
<td>RECOMMENDATION</td>
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</tr>
<tr>
<td></td>
<td>3.4</td>
<td></td>
<td>C</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Adhere to any other water management conditions as set out by DWAF or any other relevant authority.</td>
<td></td>
<td>The IWWMP action plan update from December 2017 indicated that the Department of Water and Sanitation (DWS) had verified that no water uses are applicable to the WRF operations and as such, meets the criteria with regards to site operations. Evidence:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SIC IWWMP Action Plan: Annual Update_December 2018</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>C</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>AIR POLLUTION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.1</td>
<td></td>
<td></td>
<td>Sasol makes use of an integrated approach to air quality management as governed by National Environmental Management: Air Quality Act. Sasol works closely with the local authority and</td>
</tr>
</tbody>
</table>

Figure 4-2: Bunded tanks
## REF: COMMITMENT

<table>
<thead>
<tr>
<th>COMPLIANCE</th>
<th>FINDING</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
</table>
| operates units in line with the relevant AEL and minimum legal emission requirements. Sasol AEL and postponement applications as well as Greenhouse Gas emission plan and Offsetting plan are stored on IMS and on the SharePoint. The WRF does not require an AEL for operation based on the activities conducted. Evidence:  
  – Compliance_Air_Secunda Complex  
  – Fugitive Emission Monitoring Plan_2018-10-18 updated |  |  |

### 5 RISK MANAGEMENT

#### 5.1

All employees who will be working in the Waste Recycling Facility should be aware of the emergency procedures in case of any accident.

| C | Every person entering the Sasol site is subject to a SHE induction process to ensure that all persons are familiar with the Safety, Health & Environmental aspects and requirements of that site/plant. Sasol have an environment emergency procedure (SGR-SHE000023) that covers different scenarios on the site as well as an environmental incident procedure process flow that indicates steps taken when an incident occurs. Furthermore, the WRF has a site specific emergency procedure (Reference: SGR-EMP-000001) used that was recently reviewed and is due for a next review in August 2019. Site personnel are trained on there procedures as part of their induction. 6 sample attendance registers for the emergency procedure training conducted in the WRF control room were available for review as well. Evidence:  
  – Environmental emergency procedure (Rev 6): SGR-SHE000023  
  – Emergency Procedures for WRF 2014  
  – EPP training attendance list | None |  |
### 6 MONITORING AND AUDITING

<table>
<thead>
<tr>
<th>REF</th>
<th>COMMITMENT</th>
<th>COMPLIANCE</th>
<th>FINDING</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>A post construction audit must be conducted to ensure that any shortcomings are identified and addressed as soon as possible.</td>
<td>N/A</td>
<td>Outside of audit period. This condition is considered outside of the audit period (construction pre-2014). It is therefore considered not applicable.</td>
<td>None</td>
</tr>
<tr>
<td>6.2</td>
<td>Monitoring of any possible form of groundwater pollution and ensure maintenance of the acceptable ground and/or surface water quality.</td>
<td>N/A</td>
<td>Surface water monitoring is carried out on a weekly basis, in addition to real time for the various relevant surface water monitoring points (RESMs). Sasol monitor the Bossiespruit, Brandspruit, Kleinspruit, Klipspruit and Trichardspruit. RESM 10 is the monitoring point for the Bossiespruit, which is closest to the WRF. Groundwater monitoring is conducted on a monthly basis and a sample groundwater monitoring report was available for review. JMA Consulting is an independent contractor appointed to complete sampling and bi-annual reporting for Sasol. The auditor verified that the Groundwater Quality Report compiled by JMA Consulting. Report number: JMA/50013 (2018) Prj16 Rev-01; Dated: May 2018 included groundwater monitoring of boreholes established for the WRF. The auditor noted that the WRF only influences borehole references REGM 239 S and D. The latest groundwater report also confirm the Nov 2017 water quality at REGM 239 S &amp; D. REGM 239D remain unaffected and is therefore not polluted. REGM 239S does show elevation of the TDS, Mg, SO₄, Cl and Na when compared to REGM 239S. It has been evidenced to the auditor that monitoring of surface water and groundwater is routinely undertaken, therefore Sasol is compliance with this section of the condition. However, the remainder of this condition is considered not auditable, as “acceptable” standards of groundwater quality cannot be defined. The Sasol facility is an industrial site, which is not situated within the catchment of any potable abstractions, and no standardised or site-specific quality benchmarks have been set for this circumstance. Given the long-running nature of the facility, it is further recommended that Sasol seek to engage with the authorities to establish alternative, more auditable wording for this condition.</td>
<td>Sasol must continue to place highest priority on the prevention of groundwater and surface water pollution by monitoring, and by investing in future-available mitigation techniques, and researching best available technology. It is further recommended that Sasol seek to engage with the authorities to establish alternative, more auditable wording for this condition.</td>
</tr>
<tr>
<td></td>
<td>Target period: Long term</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sasol SECUNDA OPERATIONS: WATER AND ASH

ENVIRONMENTAL AUTHORISATION COMPLIANCE AUDIT REPORT
Project No. 41101534
SASOL SECUNDA OPERATIONS: WATER AND ASH
<table>
<thead>
<tr>
<th>REF:</th>
<th>COMMITMENT</th>
<th>COMPLIANCE</th>
<th>FINDING</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Groundwater and soil pollution monitoring programmes must be implemented on a reasonable interval.</td>
<td>C</td>
<td>existing background levels of determinants were not established, and cannot be extrapolated.</td>
<td>None</td>
</tr>
<tr>
<td>6.3</td>
<td>Groundwater monitoring is conducted on a monthly basis and a sample groundwater monitoring report was available for review. Soil pollution monitoring is carried out as part of contaminated land management. Phase 1 (December 2015) and Phase 2 (August) land monitoring reports have been conducted for the Synfuels site as a whole by Geo Pollution Technologies. Recommendations from each report are marked down for implementation as required. Contaminated land is managed within legal requirements and incident registers are maintained in order to monitor any contamination events. JMA Consulting is an independent contractor appointed to complete sampling and bi-annual reporting for Sasol. The auditor verified that the Groundwater Quality Report compiled by JMA Consulting. Report number: JMA/50013 (2018) Prj16 Rev-01; Dated: May 2018 included groundwater monitoring of boreholes established for the WRF. The auditor noted that the WRF only influences borehole references REGM 239 S and D. Surface water monitoring is carried out on a weekly basis as well as real time for the various RESMs. Sasol monitor the Bossiespruit, Brandspruit, Kleinspruit, Klipspruit and Trichardspruit. RESM 10 is the monitoring point for the Bossiespruit which is closest to the WRF.</td>
<td>Evidence:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REF:</td>
<td>COMMITMENT</td>
<td>COMPLIANCE</td>
<td>FINDING</td>
<td>RECOMMENDATION</td>
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<tr>
<td>------</td>
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</tr>
<tr>
<td>6.4</td>
<td>This Department must be granted access at any reasonable times to the property to investigate any possible environmental impacts that may be caused by the operation of the said Waste Recycling Facility.</td>
<td>C</td>
<td>The auditor was informed that the Department has been granted access on a number of occasions, however, no reports have been sent to provide feedback following their site visits.</td>
<td>None</td>
</tr>
</tbody>
</table>

**7 REPORTING**

<p>| 7.1  | Records relating to the compliance/non-compliance with the conditions of the authorisation must be kept in good order. Such records must be made available to Department within seven (7) working days from the date of written request for such records by the Department. | N/A | There is no set requirement for conducting audits against the conditions of this licence. No previous audits over the last 5 years were available for review and there has been no indication that the Department requested any records. | Ensure this current audit is kept in good order so that it is readily available on request in the future. Target Completion Long term |
| 7.2  | Non-compliance with, or any deviations from the conditions of this authorisation is regarded as an offence, and after reasonable provision has been made for the situation to be remedied, will be dealt with in terms of Section 29,30 and 31A of the Act. | N/A | Noted. | None |
| 7.3  | Any complaints regarding the said development must be thoroughly investigated and addressed to the satisfaction of all parties concerned. Copies of such complaints must be forwarded to the Department within forty-eight (48) hours of such a complaint. | C | All environmental complaints received from interested and affected parties, both internal and external to the organisation, are recorded in a complaints register that is available and the Environmental department. Complaints are investigated and reported in line with the procedure and as per legal requirements. | None |</p>
<table>
<thead>
<tr>
<th>REF:</th>
<th>COMMITMENT</th>
<th>COMPLIANCE</th>
<th>FINDING</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Environmental complaints contact details are communicated to internal and external stakeholders</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>There have been no complaints received regarding facility since the operations commenced. The environmental complaints register was available for review and contained complaints for all business units dating back from 2008.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evidence:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Compliance_Complaints_Secunda Complex</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Environmental complaints procedure_SGR-SHE-000022_Rev05_2019-01</td>
<td></td>
</tr>
</tbody>
</table>
5 SUMMARY OF THE AUDIT FINDINGS

5.1 ENVIRONMENTAL AUTHORISATION

The audit findings have been summarised into the following categories: compliance, non-compliance and not applicable. The overall audit findings concerning compliance to the EA conditions are as listed in Table 3 below.

Table 3: Summary of EA Compliance Audit Findings

<table>
<thead>
<tr>
<th>SECTION OF THE EA</th>
<th>NO. COMMITMENTS</th>
<th>C</th>
<th>NC</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL CONDITIONS</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>ESTABLISHMENT OF THE ENTERPRISE</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>WATER POLLUTION AND MANAGEMENT</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AIR POLLUTION</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RISK MANAGEMENT</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MONITORING AND AUDITING</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>REPORTING</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total Count</td>
<td>26</td>
<td>12</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Total Percentage</td>
<td></td>
<td>46%</td>
<td>4%</td>
<td>50%</td>
</tr>
<tr>
<td>Percentage Compliance with Applicable Conditions</td>
<td></td>
<td>92%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 5-1 illustrates the number/count contribution of the findings of the EA per section while Figure 5-2 presents the total proportion of compliance for the facility.

Figure 5-1: Number/Count contribution of findings made to the EA conditions per Section

Figure 5-2: Overall count findings on compliance to the EA conditions
Figure 5-3 illustrates the percentage contribution of the findings of the EA conditions. Figure 5-4 presents the total percentage compliance for the facility.
APPENDIX A

ENVIRONMENTAL AUTHORISATION
(14.25 EV 10: WASTE RECYCLING FACILITY)
DEPARTMENT OF AGRICULTURE, CONSERVATION & ENVIRONMENT
DIRECTORATE: ENVIRONMENTAL MANAGEMENT

Ltiko Latekulima.
Kongiwa Kwemvelo,
Netendzawo.

Enquiries: Selby Hlatshwayo

Ref. No. 14.25 EV 10

Poltech (Pty) Ltd
P.O. Box 7211
CENTURION
0046

To whom it may concern

After due consideration of the facts presented to the administration of the Department of Agriculture, Conservation and Environment in Mpumalanga, I the undersigned, through the powers vested to me in terms of Section 33 (1) of the Environment Conservation Act, 1989 (Act 73 of 1989) (hereafter referred to as the Act), hereby grant authorisation, in terms of Section 22(3) of the Act, for the establishment of the Waste Recycling Facility at SSF - Secunda (Activity 8 of Government Notice R1182 of 5 September 1997).

The MEC for Agriculture, Conservation and Environment reserves the right to withdraw this authorisation at anytime as he/she may deem fit, after furnishing good reasons for such a withdrawal.

The Record of Decision and the Conditions to be complied with are attached.
Any appeal regarding the said development can be directed to the MEC: Agriculture, Conservation and Environment, Private Bag X 11219, Nelspruit, 1200, within thirty (30) days from the date of authorisation.

[Signature]

Director: Environmental Management
For MEC: Agriculture, Conservation and Environment

Date: 2002-06-26
Ref. No. 14.25 EV 10

Brief Description of the Activity

The proposed Waste Recycling Facility will include the development of a tank farm and blending facility for the products that will be recycled. The products that will be recycled on the site can be grouped into; Oil, Tar and heavy oil, Solids, Sludge, Contaminated oil and Contaminated water. The technologies to be utilised for the treatment of these products are; Thermal treatment, Stabilisation/Solidification, Water treatment and Bio-remediation.

Location

Portons 5, 8, 14 of the farm Goedehoop 290 IS and Portions 1, 2, 5, 6, 9, 10, 11 of the farm Twistdraai 285 IS.

Applicant

Sasol Synthetic Fuels (Pty) Ltd
Private Bag X 1000
SECUNDA
2302
Tel: 017 - 610 2627
Fax: 017 - 610 4090
Consultants

Poltech (Pty) Ltd
P.O. Box 7211
CENTURION
0046

Tel: 012 - 663 7007
Fax: 012 - 663 8429

Site visit

24th April 2002
Mr. S. Hlatshwayo of DACE and members of Sasol Technologies

Decision

After due consideration of the application for Authorisation and the facts presented to the Department of Agriculture, Conservation and Environment (hereafter referred to as this or the Department) authorisation is granted in terms of Section 22(3) of the Act.

Conditions

Refer to the attached Annexure A.

Key factors for the decision

1. The implementation of the project will significantly reduce existing and future solid waste and waste streams at the SSF Complex
2. The design and operation of the storm water control system to be implemented will have adequate capacity to handle a 1:50 year rainfall.
3. All water effluent from the waste Recycling Facility will be routed to an adequately designed, dedicated Waste Water Treatment facility. Effluent from this plant will conform to Sasol’s Raw Water Standards and re-used in the Sasol Synthetic Fuels facility.
4. No watery effluent from the Waste Recycling Facility will be released to the natural water resources of the environment under normal circumstances.
5. Emission modelling based on volumes of hydrocarbons to be released and a health risk study associated with exposure of employees to VOC’s will be conducted to ensure releases within acceptable limits.
Appeal

Any appeal regarding the said development can be directed to the MEC: Agriculture, Conservation and Environment, Private Bag X 11219, Nelspruit, 1200, within thirty (30) days of the date of issue of this authorisation.

Director: Environmental Management
For MEC: Agriculture, Conservation and Environment

2002.06.26
Date
ANNEXURE A TO THE RECORD OF DECISION FOR THE PROPOSED
ESTABLISHMENT OF A WASTE RECYCLING FACILITY AT SASOL
SYNTHETIC FUELS - SECUNDA.

CONDITIONS

1. General Conditions

1.1 This Authorisation refers only to the project specified above and described in the
Record of Decision. Separate applications must be lodged for any other
development and/or activity at or near the proposed development, which is covered
by Section 21 & 22 of the Act and Government Notice R1182 of 5 September
1997.

1.2 Authorisation is only granted in terms of Section 22 of the Act and does not exempt
the holder from compliance with other relevant legislation.

1.3 No development may take place on the area of concern without the necessary
permits/approvals and/or service agreements, from other relevant authorities.

1.4 Copies of the relevant documents mentioned in 1.3 above, must be forwarded to
this Department within three (3) months of the issuing of this Authorisation.

1.5 This Department may change or amend any of the conditions in this authorisation if,
in the opinion of the Department, it is environmentally justified.

1.6 The development must comply to all mitigatory measures as set out in the Scoping
report.

1.7 A copy of this Authorisation must be available at the offices of Sasol Synthetic
Fuels at all times and all relevant staff, contractors and sub-contractors must be
acquainted or be made acquainted with the contents of this Authorisation.

1.8 The content of this Authorisation must be made known to all Interested and
Affected Parties on this matter within 14 days of the date of this Authorisation.

2. Establishment of the enterprise

2.1 This Authorisation is repealed if construction has not been started within two (2)
years from the date of this Authorisation.

2.2 Waste generated during construction and operational phase must be collected and
disposed off at a licensed landfill site.

2.3 This Department should be notified in the earliest convenient time of any decision to
discontinue the operation of the said development.

2.4 In the event of 2.2 above, this Department shall be notified about the rehabilitation
plans of the area where the facility will be located.

2.5 A rehabilitation management plan must be submitted to this Department three (3)
months before the decommissioning phase of the site.
3. Water Pollution and Management

3.1 Prevention of groundwater pollution should receive the highest priority.
3.2 Proper drainage for storm water runoff should be put in place.
3.3 Any leachate from the Waste Recycling Facility must be drained to the current effluent treatment plant for treatment in accordance with Department of Water Affairs and Forestry requirements.
3.4 Adhere to any other water management conditions as set out by DWAF or any other relevant authority.

4. Air Pollution

4.1 Air pollution should be handled as indicated by relevant authorities.

5. Risk management

5.1 All employees who will be working in the Waste Recycling Facility should be aware of emergency procedures in case of any accident.

6. Monitoring and Auditing

6.1 A post construction audit must be conducted to ensure that any shortcomings are identified and addressed as soon as possible.
6.2 Monitoring of any possible form of groundwater pollution and to ensure maintenance of the acceptable ground and/or surface water quality.
6.3 Groundwater and soil pollution monitoring programmes must be implemented on a reasonable interval.
6.3 This Department must be granted access at any reasonable times to the property to investigate any possible environmental impacts that may be caused by the operation of the said Waste Recycling facility.

7. Reporting

7.1 Records relating to the compliance or non-compliance with the conditions of the authorisation must be kept in good order. Such records must be made available to this Department within seven (7) working days from the date of written request for such records by the Department.
7.2 Non-compliance with, or any deviation from the conditions of this authorisation is regarded as an offence, and after reasonable provision has been made for the situation to be remedied, will be dealt with in terms of Section 29, 30 and 31A of the Act.
7.3 Any complaint regarding the said development must be thoroughly investigated and addressed to the satisfaction of all parties concerned. Copies of such complaints must be forwarded to the Department within forty eight (48) hours of such a complaint.

[Signature]

Director: Environmental Management
For MEC: Agriculture, Conservation and Environment

Date: 2002.06.26