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ArcelorMittal Kiln 5 & 6: External Environmental Performance Assessment Audit Report

Final

18 June 2019

ArcelorMittal South Africa Limited

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EXECUTIVE SUMMARY

ArcelorMittal South Africa (ArcelorMittal) Vanderbijlpark Works was established in 1942 and commenced production in 1952. ArcelorMittal South Africa Vanderbijlpark Works (Vanderbijlpark Works) is one of the largest steel producers in South Africa. The Vanderbijlpark Works manufacture steel products by charging raw materials such as iron ore, coke and dolomite into blast furnaces to produce liquid iron. The liquid iron is refined in basic oxygen furnaces to produce liquid steel. The liquid steel is further processed into various rolled and coated steel products.

A Record of Decision (RoD) was issued to ArcelorMittal for the installation and operation of additional kilns (Kiln 5 & 6) for the production of Direct Reduction Iron (DRI) (RoD number: GAUT 002/04-05/1781) in terms of Regulations 1182 and 1183 and promulgated under Section 22 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989) (ECA). The RoD was issued by the Gauteng Department of Agriculture, Conservation and Environmental (GDACE) in 2006.

The following conditions are requirements of the RoD in terms of the ECA as issued by the GDACE:

- Condition 3.4 B of the RoD: An annual Environmental Performance Audit conducted by an independent auditor must be submitted to the Department for review, the first audit being due 12 (twelve) months after commissioning of the Kilns and DRI production, and every 12 (twelve) months thereafter.

GCS Water and Environment (Pty) Ltd. (GCS) was contracted by ArcelorMittal to conduct the first 2019 annual external EPA audit carried out against all conditions included in the RoD.

Accordingly, the following activities were undertaken as part of the EPA Audit:

- Assessment and comparison of the current site activities with those described in the approved RoD;
- Comparison of environmental mitigation measures implemented on site to those required and committed to in terms of the approved RoD in order to assess whether these comply with the management objectives committed to in the RoD;
- Assessment of monitoring requirements to current monitoring practices;
- Assessment of relevant documentation pertaining to various compliance aspects; and
- Identification of current activities and facilities at the Vanderbijlpark Works, which are not specifically included in the approved RoD.

The audit findings, detailed in the report, include practical recommendations whereby the various non-compliance issues can be corrected. All findings were ranked according to the following criteria:

- Compliant;
- Minor non-compliance;
- Moderate non-compliance; and
- Major non-compliance.

Currently the overall compliance with the Record of Decision (RoD) (GAUT 002/02-03/138) is noteworthy. Overall there was zero (0) incident of minor non-compliance, zero (0) incidents of moderate non-compliance, and zero (0) incidents of major non-compliance observed for the audit period. The instances of non-compliance weren't considered to be directly associated with significant environmental degradation.

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1 INTRODUCTION

ArcelorMittal South Africa (ArcelorMittal) Vanderbijlpark Works was established in 1942 and commenced production in 1952. ArcelorMittal South Africa Vanderbijlpark Works (Vanderbijlpark Works) is one of the largest steel producers in South Africa. The Vanderbijlpark Works manufacture steel products by charging raw materials such as iron ore, coke and dolomite into blast furnaces to produce liquid iron. The liquid iron is refined in basic oxygen furnaces to produce liquid steel. The liquid steel is further processed into various rolled and coated steel products.

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The following conditions are requirements of the RoD in terms of the ECA as issued by the GDACE:

- Condition 3.4 B of the RoD: An annual Environmental Performance Audit conducted by an independent auditor must be submitted to the Department for review, the first audit being due 12 (twelve) months after commissioning of the Kilns and DRI production, and every 12 (twelve) months thereafter.

GCS Water and Environment (Pty) Ltd. (GCS) was contracted by ArcelorMittal to conduct an independent Environmental Performance Assessment (EPA) Audit for the Vanderbijlpark Works. The EPA audit was carried out against all conditions included in the EA and the audit assessment was undertaken by Ms. Fatima Matlou who has experience in mining and industrial projects; and Ms Elizabeth Mosepele an Environmental intern, both from GCS.

A one (1) day site visit was undertaken at the Vanderbijlpark Works site on the 11 April 2019. The site visit was initiated with a project kick-off meeting during which GCS met with Ms. Ilze Broekman, ArcelorMittal's Environmental Control Officer (ECO) for this project. Following the kick-off meeting, a comprehensive review of the RoD documentation and associated checklists was undertaken. This assessment monitored compliance in terms of document control, systems and procedures. Following the checklist audit and documentation review, the remaining time was spent on site observing and inspecting the activities being conducted.

Accordingly, the following activities were undertaken as part of the EPA Audit:

- Assessment and comparison of the current site activities with those described in the approved RoD;
- Comparison of environmental mitigation measures implemented on site to those required and committed to in terms of the approved RoD in order to assess whether these comply with the management objectives committed to in the RoD;
- Assessment of monitoring requirements to current monitoring practices;
- Assessment of relevant documentation pertaining to various compliance aspects; and
- Identification of current activities and facilities at the Vanderbijlpark Works, which are not specifically included in the approved RoD.

2 AUDIT PROCESS

The following steps formed the basis of the EPA Audit.

2.1 Step 1: What is the objective of the audit?

The objectives of any audit should be clearly defined and settled before either an internal or external audit begins. The setting of objectives is important, as it is against these objectives that ArcelorMittal will be reviewed and expected to improve.

The following objectives formed the basis for the EPA Audit:

- Ensuring legal compliance in terms of the approved RoD;
- Checking that the environmental management tools to achieve compliance are used correctly and efficiently;
- To check whether the environmental management tools are effectively fulfilling their intended purpose of environmental compliance;
- Ensuring environmental performance on a continuous basis, i.e. throughout the life cycle of the Vanderbijlpark Works site;
- Reducing environmental liability;
- To facilitate the transference of information or best practice between operating units;
- To increase environmental awareness among the employees; and
- To track the environmental accountability of managers.

2.2 Step 2: Scope of the audit

The conditions of the RoD stipulate that regular performance assessments need to be undertaken to ensure compliance with the prescribed conditions as contained in the said documents. Furthermore, Condition 3.4 B of the RoD: An annual Environmental Performance

Audit conducted by an independent auditor must be submitted to the Department for review, the first audit being due 12 (twelve) months after commissioning of the Kilns and DRI production, and every 12 (twelve) months thereafter.

This EPA Audit is taken to mean a regular, systematic, documented verification of whether ArcelorMittal is in compliance with the conditions of the approved RoD; the provisions of the ECA and the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), which superseded the ECA; and whether environmental performance objectives and targets are being met.

2.3 Steps 3: Information required to conduct the audit

Table 2.1 sets out the procedures that were used to obtain the audit information.

Table 2.1: Process to obtain audit information

ACTION	DESCRIPTION
Inspection	Inspection consists of examining records and documents. Inspection of records and documents provides audit evidence of varying degrees of reliability depending on their nature and source and the effectiveness of internal controls over their processing.
Observation	Observation consists of on-site observation of the activities being conducted on site.
Enquiry	Enquiry consists of seeking information of knowledgeable persons inside the organisation.
Confirmation	Confirmation consists of making enquiries to corroborate information contained in the RoD.
Computation	Computation consists of checking the accuracy of source documents and the site's records or performing independent checks of information relating to environmental aspects and impacts.

2.4 Steps 4: Conducting the audit

The audit consisted of comparing the information gathered during on-site interviews, from reports as well as assessing on-site activities with the conditions of the RoD. A checklist was developed based on the RoD conditions and used as an auditing tool to establish the audit results.

2.5 Steps 5: Evaluating the audit results

The results of the audit are presented and the auditor assesses the final compliance in relation to the realistic representation of on-site activities; taking into account South African

Environmental Legislation. Through such an assessment, the auditor should determine whether the final compliance is a true representation of on-site activities and a final recommendation should be made regarding actual compliance.

2.6 Step 6: Presenting the audit results

The findings of the Audit are included in **Table 5.1** of this Report. The audit findings also include practical recommendations whereby the various non-compliance issues can be corrected.

All findings were ranked according to the criteria indicated in **Table 2.2**. The colour coding assigned to the rankings is used to visually indicate areas of compliance, minor non-compliance, moderate non-compliance, and major non-compliance. Furthermore, to indicate which conditions are not applicable to the on-site activities and which are repeat conditions that have already been scored. Each colour coding has a value (score) attached to it.

Table 2.2: Ranking criteria and colour coding scores.

RANKING	SCORE
Compliant	2
Minor non-compliance	1
Noted/Not Applicable	0
Repeat Condition	-
Moderate non-compliance	-1
Major non-compliance	-2

All findings were ranked according to the following criteria:

Noted/Not-Applicable:

- The specific condition is not relevant to the current on-site activities.

Repeat Condition:

- The specific condition is a repeat of a previous condition.

Compliant:

- ArcelorMittal complies with the conditions as stated in the RoD.

Non-compliance:

- **Minor Non-compliance:**
 - Isolated observations demonstrating that full compliance to the environmental requirements on site have not been, or will not be, fully achieved.
- **Moderate Non-compliance:**
 - There is a substantial failure to meet the environmental requirements for the project, there is a possibility of substantial environmental degradation and/or

pollution, and/or objective evidence was observed raising doubt as to the integrity of data or records inspected.

- **Major Non-compliance:**
 - There is a critical failure against legal requirements or management response that presents an immediate or significant risk that could result in prosecution and/or adverse legal findings due to failure to meet regulatory requirements; result in immediate injury or serious injury; result in prolonged business outage; and/or could result in serious damage to the project's reputation.

It must be noted that duplicate conditions are not scored due to the fact that this will negatively influence the scoring results. Duplicate conditions are marked as a Repeat Condition.

2.7 Step 7: Decision-making based on audit results

Decision-making, based on the audit results, must have the following objectives; to improve the present situation and to institute fair and reasonable corrective action. ArcelorMittal should make decisions based on the significance of the problem or non-compliance and the resources required to improve the situation.

2.8 Step 8: Instituting corrective action

It is recommended that an environmental action plan be implemented to address the Audit recommendations. The plan may include:

- Goals;
- Strategies;
- Performance indicators;
- Responsibilities; and
- A timetable for achievement.

An EPA audit is an effective management tool on condition that the recommendations, as identified in this Audit, are considered and implemented. The audit provides a basis for recommending actions to correct any deficiencies and to address any areas of environmental non-compliance recorded as part of the audit findings.

3 DETAILS OF THE AUDITOR

GCS, appointed by ArcelorMittal to conduct an external EPA audit, has more than 30 years of experience and expertise in undertaking and compiling compliance audits.

3.1 Project Team

The EPA Audit was undertaken by the GCS team presented in **Table 3.1**.

Table 3.1: GCS Team

NAME	DESIGNATION	RESPONSIBILITY
Elizabeth Mosepele <ul style="list-style-type: none"> • BSc Honours Geography and Environmental Studies • SACNASP Candi.Nat. Sci 	Environmental Intern	<ul style="list-style-type: none"> • Site visits • Compilation of Audit Report
Fatima Matlou <ul style="list-style-type: none"> • National Diploma Environmental Management • ELA (Reg. No. 2017/235/GP) 	Senior Environmental Consultant	<ul style="list-style-type: none"> • Overall Legal Compliance • Site visits • Liaison with Client and Project Management • Environmental Legal Assessment • Compilation of Audit Report

3.2 Assumptions and Limitations

The findings, results, observations, conclusions and recommendations given in this audit are based on the Auditor's best legal and professional knowledge as well as available information.

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

This audit report must not be altered or added to without the prior written consent of the auditor. This also refers to electronic copies of this Audit which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this audit must make reference to this EPA Audit. If these form part of a main audit relating to this investigation or report, this audit must be included in its entirety as an annexure or separate section to the main audit.

Refer to **Appendix A** for the Declaration of Independence of the Auditor.

4 AUDIT SCORING RESULTS: 2019 ROD EPA AUDIT

Figure 4-1 presents the percentage compliance of ArcelorMittal for the 2019 external EPA audit for the Kiln and DRI production RoD in tabular and graphic format.

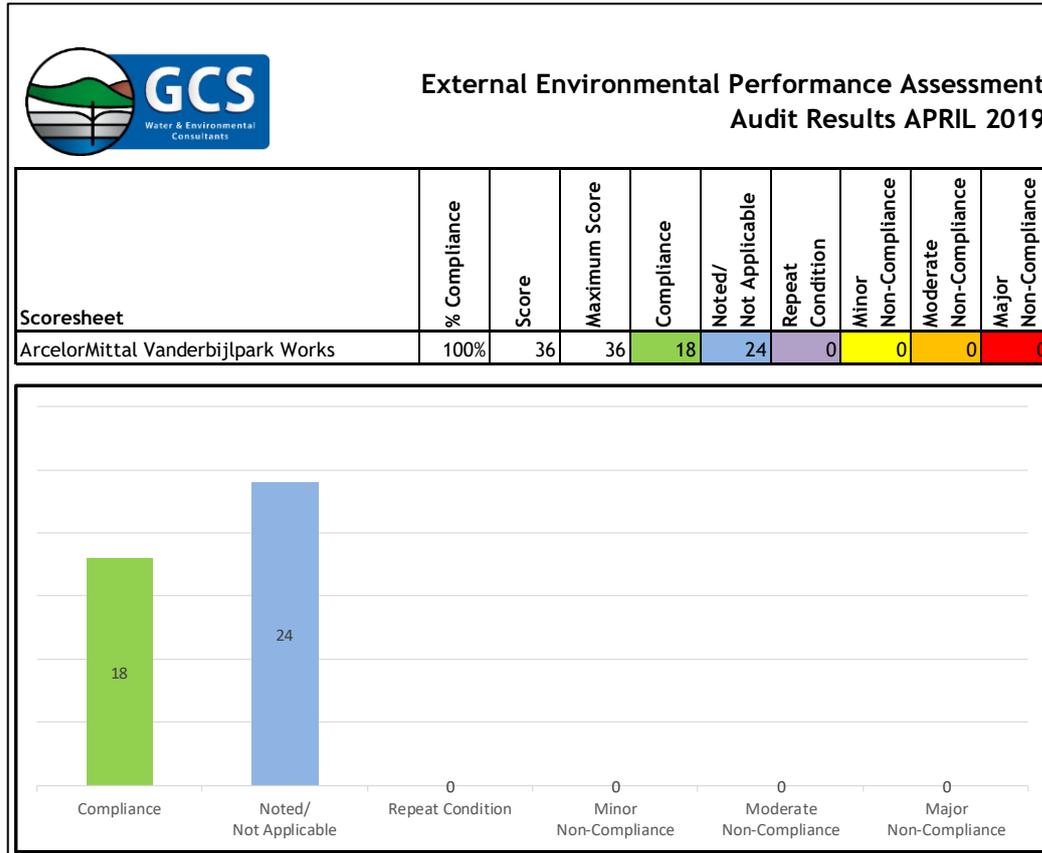


Figure 4-1: 2019 External EPA Audit Results for the Kiln and DRI production Project.

The graph within the table shows the number of non-compliances observed as well as the number of conditions repeated, noted or not applicable. It can be seen from the graph that ArcelorMittal is compliant with the majority of the RoD conditions. Most of the conditions were observed to be not applicable or noted due to the fact that various changes were made regarding the facility construction and operation, which have been approved by GDARD. During the previous audit it was reported that the last outstanding items to be constructed is towards improving the works water balance and does not influence the plant’s operability. This finding is still valid.

5 AUDIT FINDINGS - 2019 ROD EPA AUDIT

Table 5.1 overleaf represents the conditions, observations and recommendations, found at the ArcelorMittal Kiln and DRI production RoD, April 2019 audit.

Table 5.1: Scoring Results of the EPA Audit in respect of conditions of the Kiln and DRI production RoD (audit undertaken in April 2019).

DATE:	11/04/2019		SITE:	ArcelorMittal Vanderbijlpark Works	
No	Conditions	Status	Score	Observations	Recommendations
3.1	Description and extent of the activity				
	The authorisation applies in respect of the construction and operation of the two additional rotary kilns for the production of direct reduced iron (DRI) next to the existing DRI plant at Mittal Steel Vanderbijlpark Steel, as part of the project to increase total steel production of the Vanderbijlpark works. The project falls within the ambit of sub-regulation 9 of GN R.1182 (as amended) promulgated under section 21 of the Act. The extent of the project and process is summarised as follows:	Noted/Not Applicable	0	This condition is noted and subsequent to the granting of the authorisation the authorised activities have not changed.	ArcelorMittal should take note that if any of the activities change, the Department must be dually notified.
(a)	Mittal Steel Vanderbijlpark Steel's (MSVS) proposed DRI kilns #5 and #6 are based on the same technology as that of the existing DRI kilns #1 to #4.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
(b)	The erection of new DRI kilns #5 and #6 next to the existing DRI plant will provide the benefit of: 1) utilising a brown field site, 2) utilising existing service points and material handling infrastructure, 3) maintenance will be integrated with the current operation, 4) improvements on the proposed plant will benefit the existing plant, and 5) providing additional work opportunities within the Vanderbijlpark works.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
(c)	The DRI process (entire process, from input streams to final product) will comprise of the following steps: 1) Raw materials handling: Iron ore, coal and dolomite offloading from rail trucks, crushing and screening to appropriate size and storage at separate pits and bunkers;	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
	2) DRI production in rotary kilns: Feeding of iron ore and 65% of coal / dolomite mixture from the top of the kiln, injection of 35% of coal from the kiln outlet; Air injection over the length of the kiln to provide the oxygen for the coal combustion by which the kiln temperature is controlled; Under start-up conditions or wet coal use, coke oven gas will be used to provide the required initial energy to heat up the iron ore;	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
	3) Product discharge: Enclosed chute and cooling in an inclined rotary cooler that is water cooled from the outside;	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
	4) Off-gas treatment comprising of: a) dust settling chamber, b) after burner chamber (ABC) where all combustible gases are burned, c) gas cooling with energy recovery via a high pressure boiler and turbo generator, and d) particle removal with an electrostatic precipitator (ESP). No gaseous pollutants like SO ₂ , CO or NO _x will be reduced via the proposed off-gas treatment system;	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
	5) Product separation; screening into various sizes of 1mm, 2mm, 25mm and >25mm, magnetic separation of metallic iron materials and non-magnetic Dolochar, and subsequent storage in bunkers;	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
	6) Product use; Fraction >25mm feeds the Basic Oxygen Furnaces, magnetic materials feeds the Electric Arc Furnaces, and non-magnetic Dolochar as a waste to be dumped at the landfill site;	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.

	7) Waste handling: Dust and Dolochar are currently dumped on the MSVS on-site landfill site. In future Dolochar will feed the Carbon Separation plant and Brick Making plant, which were authorised by this Department (project references Gaut002/05-06/0510 and Gaut002/04-05/0569, respectively).	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
3.2	Specific Conditions				
a)	This Department will hold Mittal Steel Vanderbijlpark Steel liable for any damages that may be caused to the environment as a result of any activity related to the proposed project.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
b)	Authorisation is only granted for 2 (two) additional kilns based on the SL/RN coal-based technology with a maximum combined DRI production capacity of 350 000 t/a.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
c)	A project schedule with time-frames must be submitted to the Department 30 (thirty) calendar days prior to the commencement of construction activities. The schedule must clearly indicate the different phases of construction (as applicable), commissioning and start-up of production.	Compliant	2	ArcelorMittal submitted various documents to the department on 13 April 2007, these documents included the following: <ul style="list-style-type: none"> • Layout plan; • Project Schedule; • EMP construction plan; and • Emission compliance reporting. 	No applicable recommendations.
d)	The Department must be informed at least 30 (thirty) calendar days prior to the commissioning of the proposed DRI kilns #5 and #6.	Compliant	2	This condition is adhered to. Notice of final cold commissioning was sent to the Department on 19 June 2009.	No applicable recommendations.
e)	Final design plans for the site layout must be provided 30 (thirty) calendar days prior to the commencement of construction. i. The design is subject to provisions for optional retrofitting further pollution abatement technology should that be required to further reduce emissions from the proposed development. ii. The above design plans must include information on specific pollution prevention measures (c.g. after-burner-chamber, high pressure boiler, electrostatic precipitators etc.) and compliance with relevant SANS standard, as applicable.	Compliant	2	This condition is adhered to, kindly refer to condition 3.2.d above for further details.	No applicable recommendations.
f)	An auditable Preventative Maintenance Plan must be developed to ensure that all environmentally critical equipment such as fume extraction, off-gas treatment equipment, energy recycling systems, seals of feed inlet and output outlets, stack monitoring equipment etc. are maintained as required. A discussion on the implementation of and compliance with the maintenance plan must be included in the annual audit reports.	Compliant	2	Auditor's discussion on the Preventative Maintenance Plan (PMP): All the equipment is included in the PMP. This plan is electronically monitored, and job cards are created from the system as needed or requested. These job cards are connected to the (Environmental Management System (EMS) (SAP) and this system will be automatically triggered if the applicable job is not completed.	No applicable recommendations.

g)	<p>A detailed Environmental Management Plan (EMP) for the implementation of the project must be submitted to the Department for approval 30 (thirty) calendar days prior to the commencement of construction activities. The EMP must specifically include, inter alia'</p> <p>i. An auditable plan for monitoring all facets of the DRI kiln #5 and #6 project implementation and operation, including compliance monitoring with the conditions of this authorisation and recommendations of the Environmental Impact Report;</p> <p>ii. Procedures for the monitoring of noise to ensure compliance with Gauteng Noise Control Regulations and relevant requirements of the Occupational Health and Safety Act.</p>	Compliant	2	EMP approved: The EMP was sent to the Department on 13 April 2007.	No applicable recommendations.
h)	MSVS will ensure compliance with conditions of the permit for operation of Schedule Process No 30 C'APPA permit") to be issued by the Department of Environmental Affairs and Tourism (DEAT). A copy of such authorisation must be submitted to this Department 30 (thirty) days prior to the commencement of the facility.	Compliant	2	Departmental Communication with DEA dated 8 November 2008 confirming APPA registration.	No applicable recommendations.
i)	Effluent from the DRI plant must be directed to the Main Treatment Plant and pre-treated if required for the Zero Effluent Discharge system to function optimally.	Compliant	2	<p>The whole ArcelorMittal plant operates under a no discharge policy. The DRI plant runoff is directed to the Kiln 5 & 6 sump where it is treated and sent to the water treatment plant.</p> <p>Kindly see Appendix B for the water flow diagram specifically for the Kilns and the entire site.</p>	No applicable recommendations.
j)	ASVS must investigate how to minimise water demand of the DRI plant in order to reduce freshwater intake from the Vaal Dam and Vaal River. A discussion on the implementation of water recycling and reduction technologies must be included in the annual audit report.	Compliant	2	There is water reduction project implemented onsite. The pump cooling water is being rerouted to the cooling water at the power plant.	No applicable recommendations.
k)	<p>The cumulative SO₂ emissions must not exceed: i. 300 t/a for the combined emissions of the proposed additional kilns #5 and #6; or alternatively</p> <p>ii. 3 300 t/a for the combined emissions of kilns #1 to #6.</p> <p>iii. The emission limit must not be exceeded on a quarterly pro rata basis, i.e. non-exceedance of 75 t per quarter for option 3.2.(k)(i) or 825 t per quarter for 3.2.(k)(ii), respectively.</p> <p>iv. The Department must be notified 30 (thirty) days prior to construction of the kilns #5 and #6 can commence, about which of the options in 3.2.(k)(i) and 3.2.(k)(ii), has been chosen by ASVS and how ASVS will ensure the compliance therewith, This must include details on the technology used to achieve the SO₂ emission reduction as well as monitoring and reporting procedures.</p> <p>v. The annual audit must include an independent verification of the compliance with this condition.</p>	Compliant	2	<p>ArcelorMittal selected to report on the total years combined emissions. The official communication letter was sent to Department on 13 April 2007. This communication letter also informed the Department that construction would commence that following month.</p> <p>Auditor's discussion on why there was a spike in the quarterly results: The mass balance calculation of how waste was calculated was reviewed and subsequently the SO₂ is now more accurately calculated using the SO₂ continues calculator data. Previously just the mass balance of waste balance was used.</p> <p>Find the monitoring results attached in Appendix C.</p>	No applicable recommendations.

l)	<p>An online stack monitoring system must be installed for the continuous measurement of PM10, SO2 and CO on all stacks according to condition 3.2.(k) (i) or (ii), i.e. kilns #5 and #6 or #1 to #6, respectively.</p> <p>i. The data must be recorded as a mass concentration at the following reference conditions: 273 Kelvin and 101.3 KPa. (Condition amended on 22/12/2011)</p> <p>ii. Mass concentrations and daily mass flows must be graphically presented in the annual audit report.</p> <p>iii. Details on the monitoring equipment, i.e. detection limit, drift, span and accuracy must be submitted to this Department 30 (thirty) day prior to commissioning of the proposed development.</p> <p>iv. The monitoring equipment must be maintained and calibrated according to the manufacture's specification. A maintenance register must be kept updated. These records must be made available to the Department within 14 (fourteen) calendar days upon written request by the Department.</p> <p>v. A quality assurance and quality control plan for the operation of the monitoring equipment must be implemented and submitted to this Department with the first annual audit report.</p> <p>vi. This is notwithstanding any additional conditions the Department of Environmental Affairs and Tourism might set in the permit for the operation of the scheduled process no 30. Reports on the results of this monitoring must also be submitted to this Department with the annual audit report.</p>	Compliant	2	This Condition is adhered to. Kindly find attached Concentration data as Appendix D.	No applicable recommendations.
m)	<p>An isokinetic stack monitoring campaign must be conducted for measuring NOX and Dioxins / Furans emissions on all stacks according to condition 3.2.(k) (i) or (ii), i.e. kilns #5 and #6 or #1 to #6, respectively. The results must be submitted with the annual audit report.</p>	Compliant	2	Kindly find attached the data as Appendix E.	No applicable recommendations.

n)	<p>An Emission Reduction Strategy (ERS) for all operations on the Vanderbijlpark works must be developed in order to significantly decrease the contribution of ASVS to ambient air concentrations in the receiving environment.</p> <p>i. An updated emission inventory of all point, mobile and fugitive sources of emissions must be developed and updated bi-annually.</p> <p>ii. The ERS must include timeframes and committed reduction targets for all priority pollutants, i.e. PM10, SO2, NOx, CO according to an implementation plan with milestones and deliverables over the short (6 months), medium (2 years) and long term (5 years).</p> <p>iii. The ERS must specify how the reduction in emissions will be measured and recorded.</p> <p>iv. The ERS must be submitted to the Department for approval within 6 (six) months after signature of this authorisation,</p> <p>v. The following emission reductions must be achieved compared to the proposed emission reductions as stipulated in the draft ERS, Version 1, and the baseline of 13 630 t/a SO2 and 9 780 t/a PM10 in the year 2004:</p> <p>a. A minimum of 75% of the proposed emission reductions of SO2 emissions, i.e. 42% or 5 724 t/a before start-up of production of the proposed DRI kilns #5 and #6;</p> <p>b. A minimum of 65% of the proposed emission reductions of PM10 emissions, i.e. 48% or 4 618 t/a before start-up of production of the proposed DRI kilns #5 and #6;</p> <p>c. A minimum of 75% of the proposed emission reductions of PM10 emissions, i.e. 54% or 5 329 t at the latest 12 (twelve) months after start-up of production of the proposed DRI kilns #5 and #6. (Condition amended on 22/02/2007)</p> <p>vi. The annual audit must include the review of the ERS implementation (targets, achieved emission reduction per pollutant, next implementation steps and remediation measures should a target not have been met within the proposed timeframe). The audit results must be submitted to the Department 30 (thirty) days prior to start-up of production of the DRI kilns #5 and #6 and with the annual audit reports thereafter.</p>	Compliant	2	<p>ArcelorMittal submitted the ERS to the GDACE and received proof of submission on 24 August 2007. The Department (GDACE) gave communication that all requirements related to SO2 reduction was met at this stage, and this communication was received on 19 November 2010.</p> <p>Furthermore, an annual report of reduction status was drafted in July 2010 and was revised on April 2016.</p> <p>The ERS Report indicates that the total dust load emissions from point sources amounts to 985 tons for 2015. However, overall there has been a decrease in emissions of 89% for the past 10 years. To further mitigate the environmental impacts ArcelorMittal has devised strategies that focus specifically on medium- and short-term reductions goals.</p>	No applicable recommendations.
o)	<p>The operation of the DRI kilns #5 and #6 and the DRI plant as a whole must comply with the Occupational Health and Safety Act (No. 85 of 1993) and sound occupational hygiene procedures. Engineering control measures must be implemented as first choice of mitigation.</p>	Compliant	2	<p>This condition is adhered to and Health and Safety studies are conducted on a yearly basis depending on the specific legislative requirements site wide.</p> <p>Across the whole site the only incidents that have arisen were dust issues, and these were addressed by ArcelorMittal through the implementation of various PPE apparel.</p>	No applicable recommendations.
p)	<p>The recommendations contained in the specialist studies submitted in support of the application for authorisation of the DRI kilns #5 and #6 project are regarded as an extension of the conditions of this authorisation. Implementation of or compliance with these recommendations must be discussed as part of annual environmental performance audits.</p>	Compliant	2	<p>After the specialist studies were conducted, a summary of all requirements that were submitted under these studies were made. These requirements are included for all audit purposes and all additional requirements are considered. Therefore, the auditor considers this activity to be adhered to.</p>	No applicable recommendations.
q)	<p>The Department of Water Affairs and Forestry's and Department of Environmental Affairs and Tourism requirements and/or conditions pertinent to the proposed project must be complied with.</p>	Noted/Not Applicable	0	<p>This condition is noted, and no additional requirements or conditions were received.</p>	No applicable recommendations.

r)	All potential emergencies that can be expected from the DRI kilns #5 and 6 project must be anticipated and the reaction thereto must be incorporated in the existing Mittal Steel emergency response procedures.	Compliant	2	This condition is adhered to and is addressed in the Emergency Evacuation and Contingency Plan - Policy number: DR.SWPGS.0263.	No applicable recommendations.
s)	Detailed and up to date records must be kept of all incidents and complaints pertaining to the DRI kilns #5 and #6 project, how these were managed, and the recurrence thereof prevented. These records must be made available to the Department within 14 (fourteen) calendar days upon written request by the Department.	Compliant	2	ArcelorMittal uses the Pivot system and all documents are kept electronically and available upon request. No complaints have been received during this audit period. ArcelorMittal has noted that the local government, Emfuleni raised an enquiry 8 November 2016. ArcelorMittal responded to this enquiry and the issue was followed up.	No applicable recommendations.
t)	This Department, the Department of Environmental Affairs and Tourism and the Department of Water Affairs and Forestry must be informed of any environmental and pollution incidents relating to the DRI kilns #5 and #6 project within 24 (twenty-four) hours of such incidents occurring.	Noted/Not Applicable	0	This condition is noted, and no such incidents have occurred.	No applicable recommendations.
u)	An environmental control officer (ECO) to be appointed must ensure that regular audits are performed before, during and after construction and commissioning of the facility as stipulated in the EMP to ensure implementation of mitigation and management measures. Furthermore, an ECO must monitor the applicant's compliance with all the conditions of this authorisation.	Compliant	2	This condition is adhered to and Ms. Ilze Broekman has been appointed as ECO.	No applicable recommendations.
3.3	General Conditions				
a)	Any changes to, or deviations from, the project description set out in this letter must be approved, in writing, by the Department before such changes or deviations may be affected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
b)	This Department may review the conditions contained in this letter from time to time and may, by notice in writing to the applicant, amend, add or remove a condition.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
c)	The applicant must notify the Department, in writing, at least 10 (ten) days prior to the change of ownership, project developer or the alienation of any similar rights for the activity described in this letter. The applicant must furnish a copy of this document to the new owner, developer or person to whom the rights accrue and inform the new owner, developer or person to whom the rights accrue that the conditions contained herein are binding on them.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
d)	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.	Noted/Not Applicable	0	ArcelorMittal has noted that a change made in terms of the Environmental Manager who is the responsible person for the licence. The details of the RoD was amended and on 30 August 2012 a notification letter was sent to the Department.	No applicable recommendations.
e)	Authorisation for the activity is granted in terms of the Environment Conservation Act, 1989 (Act 73 of 1989) only and does not exempt the holder from compliance with other relevant legislation.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
f)	The applicant shall be responsible for ensuring compliance with the conditions contained in this letter by any person acting on his behalf, including but not limited to, an agent, servant, or employee or any person rendering a service to the applicant in respect the activity, including but not limited to, contractors and consultants.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.

g)	Departmental officials shall be given access to the property referred to in 1 above for the purpose of assessing and/ or monitoring compliance with the conditions contained in this document at all reasonable times.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
h)	The applicant must notify the Department within 24 (twenty-four) hours if any condition of this authorisation cannot, or is not, adhered to. The notification must be supplemented with reasons for non-compliance.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
3.4	Reporting requirements				
a)	A summarised bi-annually progress report on the implementation of DRI kilns #5 and #6 project must be submitted to the Department, the first report being due 3 (three) months after construction commences, and every 6 (six) months thereafter, until commissioning of the DRI kilns #5 and #6 including associated infrastructure has been finalised. These progress reports must address, inter alia, the following: <ul style="list-style-type: none"> • A summary of the implementation of the Emission Reduction Strategy up to then (see 3.2.(n)), • Records of any major incidents (see 3.2(t)), • Commissioning and decommissioning of infrastructure (if any) including associated infrastructure for materials handling, • Monitoring of activities in terms of the environmental management plan, • Any steps taken to rectify areas of non-compliance with environmental requirements. 	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.
b)	An annual Environmental Performance Audit conducted by an independent, accredited auditor must be submitted to the Department for review, the first audit being due 12 (twelve) months after start-up of production of the DRI kilns #5 and #6 project. The annual audit must include, inter alia, the following (results in graph format as applicable): <ol style="list-style-type: none"> All information as required in 3.2, 3.3. and 3.4(a). Log of the wastes that were generated, and where they were disposed of or recycled on-site. A summary of all findings above. Recommendations for improvements of the environmental performance of the DRI kilns #5 and #6 project, including timeframes and responsibilities. 	Compliant	2	GCS Water and Environmental Consultants (Pty) Ltd. have been appointed as external independent auditor. Kindly find attached the data as Appendix F.	No applicable recommendations.
3.5	Duration of authorisation				
	If the construction of the activity authorised by this letter does not commence within 2 (two) years from the date of signature of this letter, the authorisation will lapse, and the applicant will need to re-apply for authorisation in terms of the above legislation or any amendments thereto.	Noted/Not Applicable	0	This condition is noted.	No applicable recommendations.

6 CONCLUSION AND RECOMMENDATIONS

By conducting an EPA, ArcelorMittal recognises the importance of authorisation in regulating processes related to the project.

Currently the overall compliance with the Record of Decision (RoD) (GAUT 002/02-03/138) is noteworthy. Overall there was zero (0) incident of minor non-compliance, zero (0) incidents of moderate non-compliance, and zero (0) incidents of major non-compliance observed for the audit period. The instances of non-compliance weren't considered to be directly associated with significant environmental degradation.

APPENDIX A: DECLARATION OF AUDITOR INDEPENDENCE

I, **Fatima Matlou**, declare that:

- I act as the independent environmental auditor in this assessment;
- I will perform the work relating to the assessment in an objective manner, even if this results in views and findings that are not favourable to the authorisation holder;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental auditing, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activities;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in Regulation 34 of the Regulations when preparing this assessment and any report relating to it;
- I have no, and will not engage in, conflicting interests in the undertaking of this assessment;
- I undertake to disclose to the holder and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the assessment is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the assessment;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will provide the competent authority with access to all information at my disposal regarding the assessment, whether such information is favourable to the holder or not;
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from an environmental auditor in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of Regulation 48 of the Regulations and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest

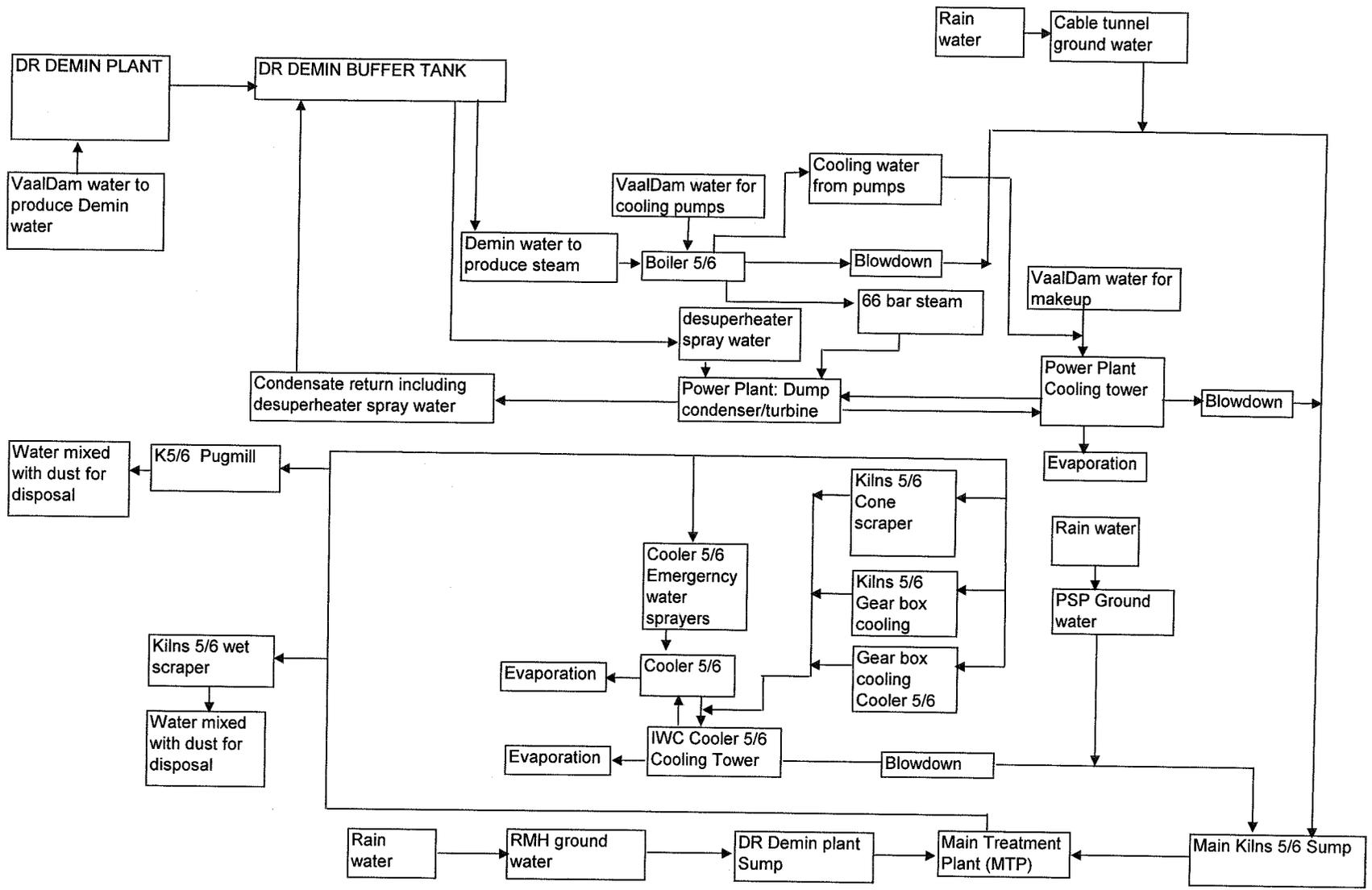
- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014.



Signature of the environmental auditor

18 June 2019

APPENDIX B: WATER FLOW DIAGRAM



APPENDIX C: MASS CONCENTRATION DATA

Environmental Compliance Report

Vanderbijlpark

Per Hour

From:

To:

Request:

Page:

Compliance Type:

BusinessUnit / Plant	SubPlant	Type	Units	Actual Avg

Iron Making

Direct Reduction

<u>Kiln 3</u>	CO	ppm	641.02
<u>Kiln 3</u>	SO2	ppm	20.46
<u>Kiln 4</u>	CO	ppm	61.71
<u>Kiln 4</u>	SO2	ppm	13.73
<u>Kiln 5</u>	CO	ppm	139.18
<u>Kiln 5</u>	SO2	ppm	307.39
<u>Kiln 6</u>	CO	ppm	90.66
<u>Kiln 6</u>	SO2	ppm	65.09

APPENDIX D: EMISSIONS HISTORY FOR KILN 5 & 6

Enviromental Monthly Overview Report

Vanderbijlpark

2019-06-10 11:18

Page 1 of 1

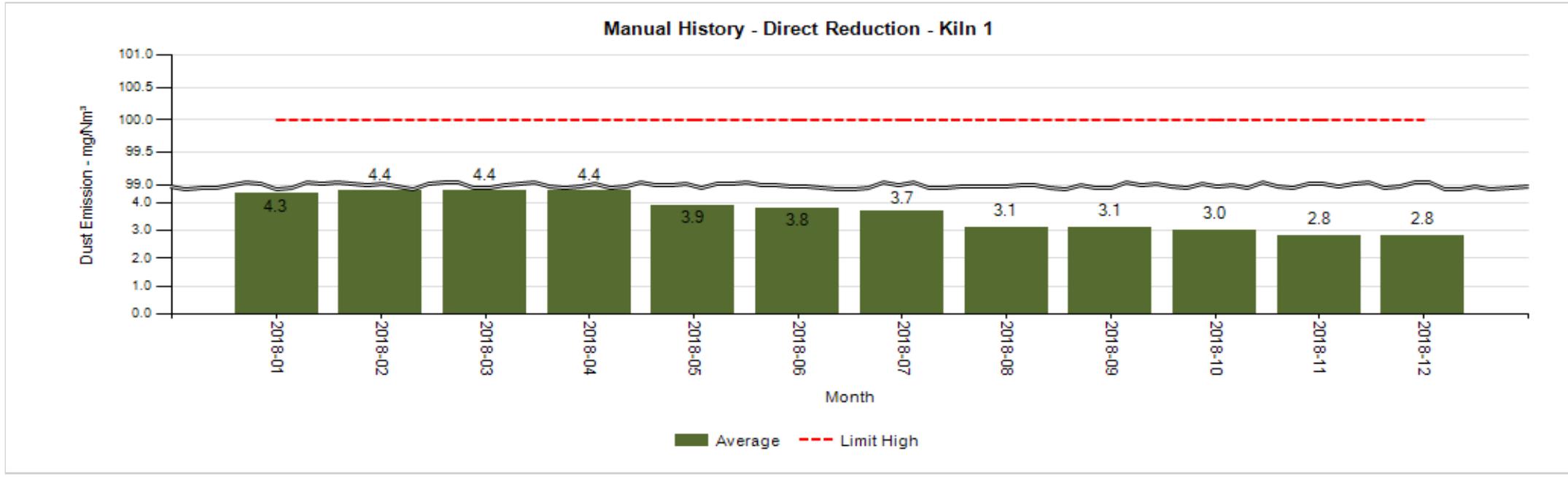
From: 2018-01

To: 2018-12

Compliance Type: AEL 2018

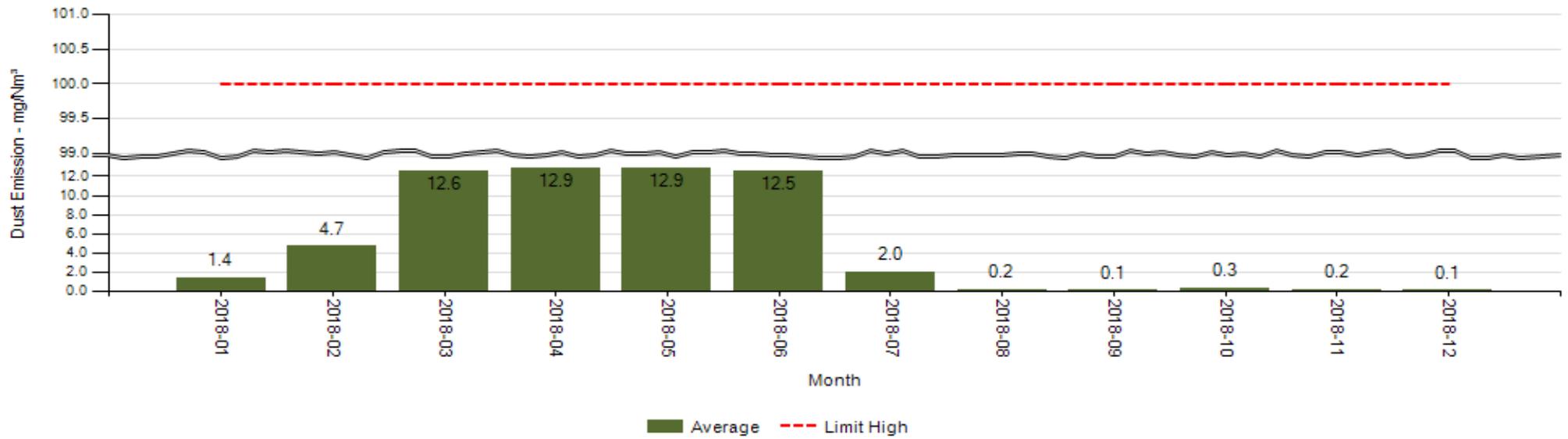


Iron Making | Direct Reduction | Kiln 1 | Dust | mg/Nm³



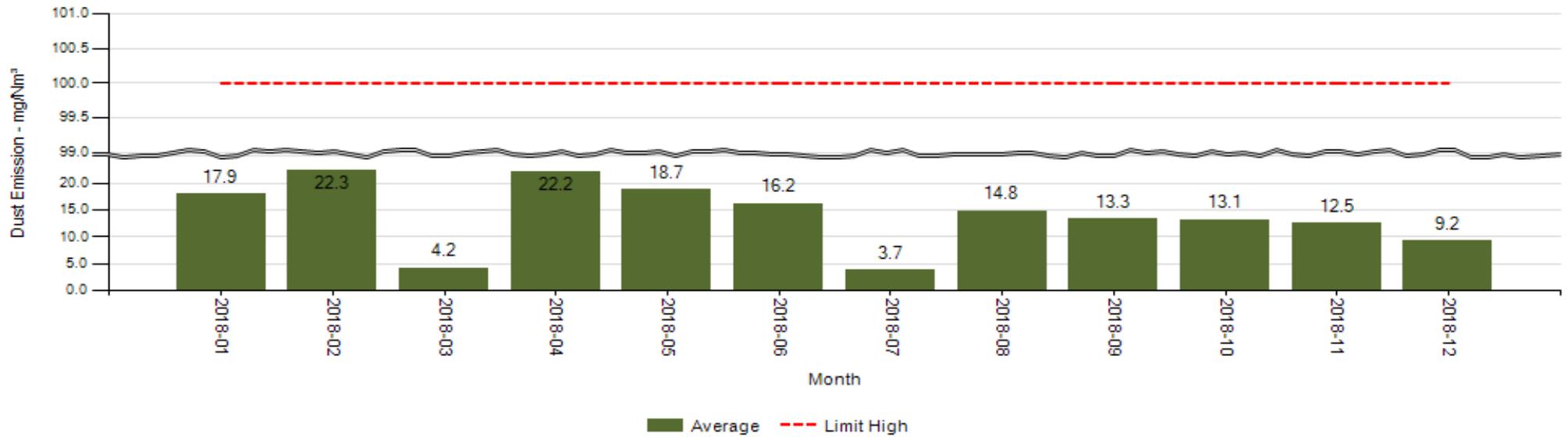
Iron Making | Direct Reduction | Kiln 2 | Dust | mg/Nm³

Manual History - Direct Reduction - Kiln 2



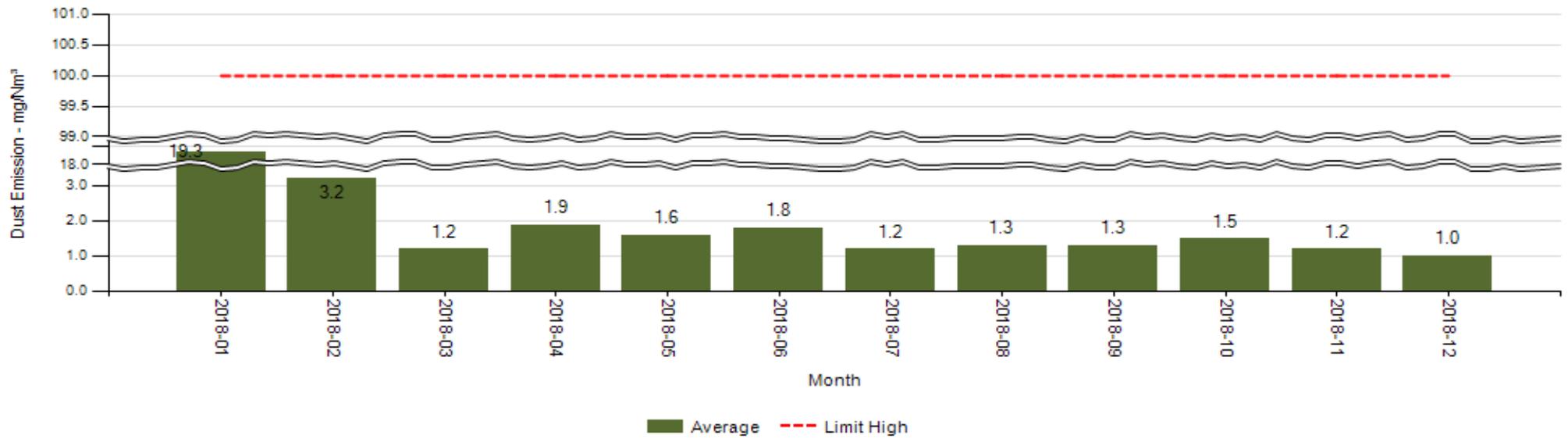
Iron Making Direct Reduction Kiln 3 Dust mg/Nm³

Manual History - Direct Reduction - Kiln 3



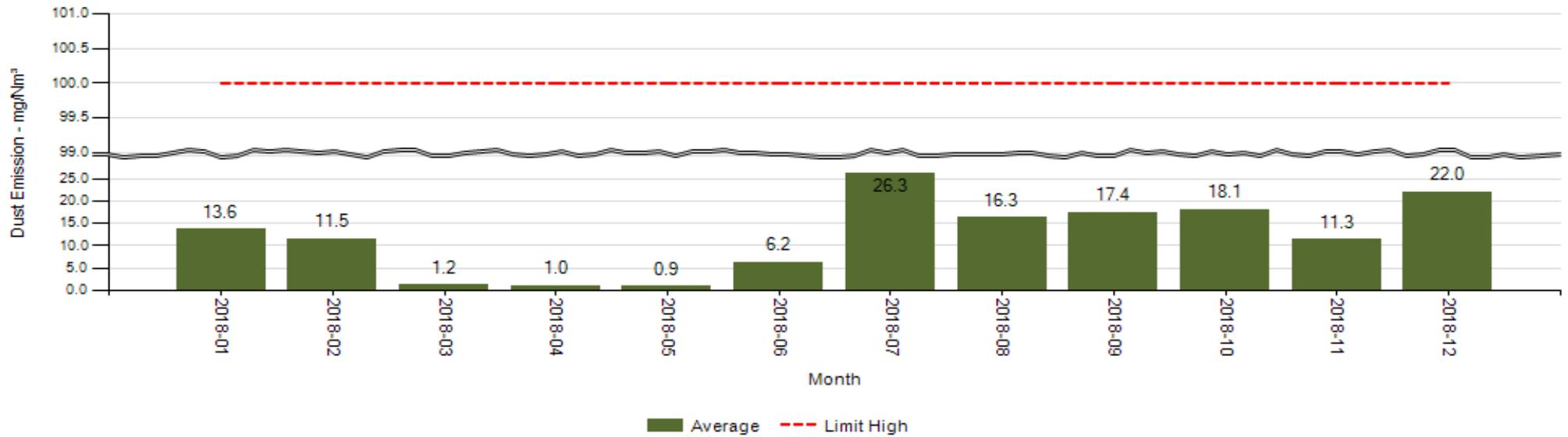
Iron Making Direct Reduction Kiln 4 Dust mg/Nm³

Manual History - Direct Reduction - Kiln 4



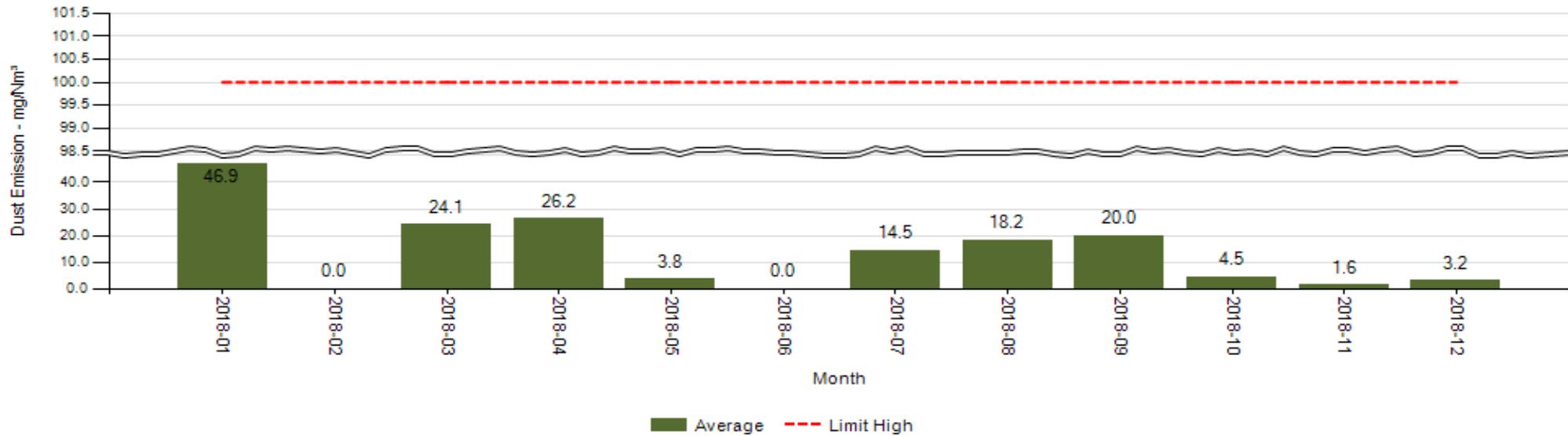
Iron Making Direct Reduction Kiln 5 Dust mg/Nm³

Manual History - Direct Reduction - Kiln 5



Iron Making Direct Reduction Kiln 6 Dust mg/Nm³

Manual History - Direct Reduction - Kiln 6



APPENDIX E: WASTE LOG

Kiln Dusts					Taaibos					Product Dust				Wet scraper					DOLOCHAR				
Produced	Disposed	Re-used	Sold	Storage	Produced	Disposed	Re-used	Sold	Storage	Produced	Disposed	Re-used	Sold	Produced	Disposed	Re-used	Sold	Storage	Produced	Disposed	Re-used	Sold	Storage
17	17	-	-	-	-	-	-	-	-	-	-	-	-	113	113	-	-	-	7	7	-	-	-
105	105	-	-	-	-	-	-	-	-	-	-	-	-	149	149	-	-	-	27	-	-	-	-
6394	6394	0	0	0	413	413	0	0	0	820	820	0	0	135	135	0	0	0	5544	5544	0	0	0
4554	4554	0	0	0	440	440	0	0	0	931	931	0	0	155	155	0	0	0	4845	4776	0	69	0
3539	3539	0	0	0	65	65	0	0	0	750	750	0	0	18	18	0	0	0	3764	3764	0	0	0
4824	4824	0	0	0	289	289	0	0	0	79	79	0	0	64	64	0	0	0	5463	5463	0	0	0
4151	4151	0	0	0	512	512	0	0	0	0	0	0	0	26	26	0	0	0	3764	3764	0	0	0
4968	4968	0	0	0	469	469	0	0	0	138	138	0	0	122	122	0	0	0	4256	4256	0	0	0
4365	4365	0	0	0	659	659	0	0	0	411	411	0	0	188	188	0	0	0	4667	4667	0	0	0
5776	5776	0	0	0	462	462	0	0	0	193	193	0	0	125	125	0	0	0	6959	6959	0	0	0
6023	6023	0	0	0	893	893	0	0	0	191	191	0	0	151	151	0	0	0	5822	5822	0	0	0
5531	5531	0	0	0	513	513	0	0	0	86	86	0	0	157	157	0	0	0	4127	4127	0	0	0
3675	3675	0	0	0	514	514	0	0	0	112	112	0	0	43	43	0	0	0	3624	3624	0	0	0
5103	5103	0	0	0	464	464	0	0	0	269	269	0	0	96	96	0	0	0	4331	4331	0	0	0
4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	-	-	-
909	909	-	-	-	474	474	-	-	-	332	332	-	-	107	107	-	-	-	764	758	-	6	-