

**EXTERNAL AUDIT REPORT IN FULFILMENT
OF THE ENVIRONMENTAL AUTHORISATION
FOR THE
METALLURGICAL WASTE DISPOSAL SITE
AT
ARCELORMITTAL SOUTH AFRICA
VANDERBIJLPARK WORKS**



Report Nr: 677-ZANAMSA- 2017

Audit date: 23 March 2017

Report date: 26 May 2017

General Information

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|---------------------------------------|---|
| Report Name: | External Audit Report for the old Metallurgical Waste Disposal Site in terms of the Environmental Authorisation (ROD). |
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| Date: | 23 March 2017 |
| Report Date: | 26 May 2017 |
| Status: | Final |
| Environmental Authorisation Nr | GAUT 002/04-05/1126 |

EXECUTIVE SUMMARY

Zantow Environmental Consulting Services CC was contracted by ArcelorMittal as an independent consultant to conduct an external compliance audit on its Environmental Authorisation (RoD) (GAUT 002/04-05/1126) for the old Metallurgical Waste Disposal Site and which addresses the closure of the waste disposal site and the development of the New Waste Disposal facilities.

The methodology followed for conducting the compliance assessment audit included;

- Compilation of audit checklist/questionnaire for site visit;
- Site Visit (Conducted on the 23rd March 2017);
- Documentation Audit and
- Compilation of compliance audit report.

The assessment was conducted in terms of condition 3.2.25 in terms of the RoD, GAUT 002/04-05/1126 dated 22nd February 2007 for the Metallurgical Waste Disposal Site at ArcelorMittal Vanderbijlpark Works.

From Table 1, it can be concluded that ArcelorMittal is generally compliant to the conditions of the ROD. A historical partial compliance related to the construction of the H:H Salt cell which was completed during the previous audit period, however, notices were not submitted to GDARD but only to DEA. Another partial compliance is related to the significant dust fallout peaks were noted at DB9 due to the unpaved road. Minor observations were made during the site visit, and have been recorded in the waste management assessment.

Where non-compliances were recorded, the non-compliance was contextualised in terms of the intensity. This equates to an objective view of the seriousness of the non-compliance and also then leads to recommendations where moderate to major non-compliances have been observed.

The following recommendations are made to improve compliance to the ROD;

- The contaminated run off at the tip station is not diverted to the H:H Leachate collection dam via a pipe or lined canal and this should be rectified. (**WMCO, As soon as possible**).
- Additional dust control measures to be implemented at the road, and the material handling areas (especially at DB 9). (**ArcelorMittal, 2017**).

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1. INTRODUCTION

Zantow Environmental Consulting Services CC was contracted by ArcelorMittal as an independent consultant to conduct an external compliance audit on its Environmental Authorisation (RoD) (GAUT 002/04-05/1126) for the Metallurgical Waste Disposal Site which addresses the closure of the old waste disposal site and the development of the New Waste Disposal facilities.

The methodology followed for conducting the compliance assessment audit included;

1. Compilation of audit checklist/questionnaire for site visit;
2. Site Visit (Conducted on the 23rd March 2017);
3. Documentation Audit and
4. Compilation of compliance audit report.

The new Metallurgical Site and associated facilities were constructed in 2010 and commissioned on the 1st January 2011 which was in line with the requirements set out in the Water Use License of the facility. The site has therefore been in operation for about six years now.

The assessment was conducted in terms of condition 3.2.25 of the RoD dated 22nd February 2007 for the Metallurgical Waste Disposal Site at ArcelorMittal Vanderbijlpark Works.

2. BACKGROUND AND PROJECT STATUS

ArcelorMittal Vanderbijlpark Works is located at Delfos Boulevard, Vanderbijlpark, on the remaining extent of Portion 1 of the Farm Vanderbijlpark 550 IQ. The site falls within the jurisdiction of the Emfuleni Local Municipality, Gauteng Province.

In February 2007, ArcelorMittal Vanderbijlpark Works was issued with a positive Record of Decision (ROD) by the Gauteng Department of Agriculture and Rural Development (GDARD) for the construction of a new Metallurgical Waste Disposal Site facilities and the closure of the old site.

Vanderbijlpark Works also held an Environmental Conservation Act (ECA) Section 20 exemption permit dated 2004, and a Water Use License, issued by the Department of Water Affairs (DWA) for the construction and operation of the new waste site facilities. Subsequent to the waste management function moving to the Department of Environmental Affairs (DEA), ArcelorMittal submitted an application for a waste management license (WML) in light of cooperation with the new competent authority despite all the required authorisations held.

Construction therefore legally commenced under the various authorisations (ROD, ECA Section 20 exemption and the WUL) in 2010. In anticipation of the waste management license to be issued, ArcelorMittal kept the Department of Environmental Affairs (DEA) informed of the process and the plans to commence with construction. The site was operational by the 1st January 2011 as was required by the Works Water Use license.

The RoD condition 3.2.25 requires that an annual External Audit be undertaken by an independent external auditor and the audit report submitted to the Department within 30 days of completing the audit.

PART 1: Audit Information

2.1. Date of Audit

| | |
|----------------------|-------------------------------|
| External Audit date: | - 23 rd March 2017 |
| Site audit | - 23 rd March 2017 |
| Report date | - 26 th May 2017 |

2.2. Audit Criteria / Scope of Work

The scope of work entailed conducting a compliance audit to verify compliance to the RoD as per condition 3.2.25. The annual environmental performance audit must be conducted by and independent, experienced auditor and must be submitted to the department within 30 days of the finalisation of the audit report.

The following documents and or information were considered against which compliance to the conditions of the RoD was audited:

- Environmental Authorisation (RoD) and its amendments
- External and Internal audit reports
- Various database monitoring results made available / presented during the audit
- Minutes and reports to the external Multi-stakeholder Liaison Committee
- Monitoring reports / data
- Procedures and the electronic Environmental Management System (EMS)
- Relevant communications between ArcelorMittal, Authorities and I & APs
- Applicable South African Environmental Legislation.

2.3. Audit Methodology

In order to clarify terms and definitions with reference to the international standard ISO 19011:2002(E) Guidelines for quality and/or environmental management systems auditing - Audit "FINDINGS" are defined as "results of the evaluation of the collected audit evidence against audit criteria". The definition has a note stating "audit findings can indicate either conformity or nonconformity with audit criteria or opportunities for improvement". General or specific findings are presented as observations or opportunities for improvement. To clarify reporting - the findings will be called and presented as non-compliance, potential non-compliance and observations. These are defined as follows:

Compliance

Full compliance achieved with documented or audited proof of compliance available. No further actions are required.

Non-compliance

Non-compliance is the most severe type of finding. A non-compliance will indicate legal non-compliance to the relevant legislation, license and/or records of decisions conditions. Where appropriate the audit report could contain recommendations regarding non-compliance and specified/agreed target dates for the implementation.

Potential or partial non-compliance

A potential or partial non-compliance refers to a deviation from a legal requirement, a standard specification, or a planned arrangement which does not constitute a non-compliance, but which does not represent Best Practice. Recommendations could be stated for potential non-compliances. It can also refer

to conflicting of nonsensical conditions in a license that cannot be complied with, but still needs to be resolved.

Observation

An observation refers to a deviation from best practice and includes observations of opportunities for improvement. Recommendations could be stated for observations but will not have specified target dates. This has been included for the benefit of management and while not being of immediate priority, can be included in the self-improvement cycle of environmental management.

During the inspection it was however found that some conditions are generic, impractical and / or contradictory. There was therefore a need to rank the identified non-compliance or partial compliance findings in terms of the following criteria:

Critical Issues

- 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 finding due to failure to meet regulatory requirements;
- Could result in immediate injury or serious injury or environmental harm;
- Could result in prolonged business outage; and/or
- Could result in serious damage to the project's reputation.
- Critical issues must be addressed immediately and all activities resulting in negative critical findings must cease until such time as the issue has been rectified.

Moderate Issues

- There is a substantial failure to meet the environmental requirements for the project or license condition,
- 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.

Minor Issues

- Isolated observations demonstrating that full compliance to the environmental requirements on site have not been, or will not be, fully achieved.
- No physical environmental harm

Historic Issues

- No physical environmental harm – administrative in nature
- Historic non-compliance, out the company currently in control of compliance control
- No administrative or other remedy available to rectify the situation
- No further action required

2.4. Objectives

To carry out an independent compliance audit including:

- Inspection of operations and confirm compliance to the RoD.
- Verify the effectiveness of impact management and mitigation.
- Assess allocations of responsibilities and actions.
- Report observations for further investigation and action.
- Specifically state whether conditions are adhered to.

- Make recommendations where appropriate.
- Prepare an audit report for submission to the relevant authorities.

As part of the conditions of the RoD issued for the closure of the existing waste site, annual environmental performance audits are required to be conducted by an independent, experienced auditor. The objective of these audits are to provide a status quo report on the closure of the existing waste site and the establishment of the new waste disposal site, which requires the following monitoring and reporting:

- Results of water quality testing, i.e. monthly monitoring results from upstream and downstream boreholes;
- Monitoring of relevant boreholes with respect to detecting any pollution from all facets of the operation from closure and rehabilitation of the old waste site to establishment of a new waste disposal site;
- Quality and quantity, as well as management of leachate generated (if any);
- A review of the stability / integrity of the capping material and/or layers;
- Reporting on progress regarding investigations to reduce the waste streams;
- Reporting on progress of rehabilitation;
- Success of vegetation establishment;
- Environmental incidents and complaints pertaining to the closure and rehabilitation of the old waste site and establishment of a new waste disposal facility;
- Compliance with provisions of the approved EMP;
- Compliance with all conditions of the RoD;
- Compliance with the ecological management plan;

The approach followed during the audit was as follows;

- Interviews with selected ArcelorMittal employees and the Waste Management Control Officer appointed in terms of the RoD;
- Site visit and inspection;
- Review of documentation and records;
- Submission of the final audit report.

All reporting on the assessment findings is presented in this report in a comprehensive and written form. The report is clear, concentrating on factual and objective investigations, evaluations and observations and is presented as such to ArcelorMittal.

2.5. Independent Assessor

The role of the Independent Environmental Assessor is to provide independent, objective and professional advice on the environmental compliance of the Metallurgical Waste Disposal Site facility, with specific reference to the respective RoD conditions. Specific duties of the auditor include the following:

- Review and assess in an independent, objective and professional manner all aspects related to the RoD conditions;
- Conduct a site inspection

2.6. Comments from previous audit reports

| Finding and mitigation measure as per 2016 audit report | Status in 2017 |
|--|-------------------------------------|
| The contaminated run off at the tip station is not diverted to the H:H Leachate collection dam via a pipe or lined canal and this should be rectified immediately (WMCO, June 2016). | Unresolved. Work in progress |

2.7. Assumptions and limitations

The observations and findings made during the audit were during a specific time frame and on-site conditions may vary throughout the year. Therefore, changing circumstances throughout the year may differ and deliver different results. The results pertain only to on-site conditions and information supplied by the client to the time of the audit.

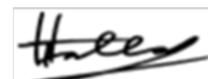
2.8. Declaration

We, **Trevor Hallatt and Boitumelo Tlhapi**, as independent consultants compiled this audit report and declare that it correctly reflects the findings made at the time of the audit. We further declare that we,

- Act as an independent consultant;
- Do not have any financial interest in the undertaking of the activity, other than remuneration for the work performed in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the National Environmental Management Waste Act;
- Undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the National Environmental Management Act, 1998 (Act 107 of 1998);
- Based on information provided to me by the project proponent, and in addition to information obtained during the course of this study, will present the results and conclusion within the associated document to the best of my professional judgement.

Boitumelo Tlhapi

Boitumelo Tlhapi
Environmental Consultant



Trevor Hallatt
Environmental Specialist
SACNASP Reg Nr: 300123/15

3. PART 2: Audit Findings

3.1. Positive observations/findings

The site is generally well managed and it is evident that ArcelorMittal's environmental management efforts have been conducted to solve problems and mitigate the historical environmental impacts. ArcelorMittal has proactively engaged with the authorities to resolve issues relating to compliance to the authorisation.

The closure of the old waste disposal site is commendable and the completed phases have been successful. The facility is currently in the final stage of phase 3 and the progress is significant. The storm water run-off quality has improved, as well as the reduction of dust emissions made a large positive contribution towards the environmental improvement drive.

3.2. Compliance with the License conditions

Zantow Environmental Consulting Services CC was contracted by ArcelorMittal Vanderbijlpark Works as an independent consultant to conduct an external compliance audit in terms of condition 3.2.25 of the ROD for the old Metallurgical Waste Disposal Site (Nr GAUT 002/04-05/1126) dated October 2011. The ROD addresses the closure of the old waste disposal site and the construction and operation of the new Metallurgical Waste Disposal Site.

The table below addresses compliance to each relevant condition in the license.

4. Record of Decision (ROD)

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|---|-------------------|-----------------------------|
| 3.1 | Description and Extent of the Activity | | | |
| 3.1 | The authorisation applies in respect of the operation towards closure of the existing waste disposal site and the establishment of a new waste disposal site. | | | |
| 3.1.1 | <p>The closure of an existing waste site will entail:</p> <ul style="list-style-type: none"> Reshaping the Waste disposal site; Establishing a series of canals; Capping the site slopes and top of the waste disposal site; Using top soil material sourced from a borrow pit; and Using fertilizers and seeding to encourage the establishment of vegetation which will allow the waste dump to visually blend into the surrounding topography. <p>The solid waste disposal site covers an area of approximately 161 ha with a total volume disposed to date of approximately 27 million m³ and a height of 40m.</p> | <p>ArcelorMittal notes the condition.</p> <p>The set remediation phases (1 to 3) are/were carried out according to the prescribed requirement.</p> <p>Phase 1 was completed in December 2010 and phase 2 was completed in 2012. First portion of Phase 3 was completed in March 2015 and this was evident during the inspection.</p> | Compliant | |
| 3.1.2 | <p>The new waste disposal site is part of the CRMF and will cover an area of 47 ha to be constructed in three phases comprising of 13 cells of approximately 4 ha each.</p> <p>Salt cell to cater for an interim 4 year period of salt deposition and will have capacity of 16 000 tons/</p> | <p>Construction of the first cell was completed in February 2014 and the salt accumulated in the salt cell was disposed in June and July 2014 into the dry salt cell. The salt cell was then capped and closed within a short period of time to ensure no leachate is generated and the waste is dry therefore minimising the potential impact on the environment. The salt cell will not be used as an interim measure unless in future the salts can be reclaimed for re-</p> | Compliant | Observation |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|---|-------------------|-----------------------------|
| | annum | use. The facility therefore complies currently with the ROD condition but the intention is to operate the salt cell permanently. | | |
| | Sludge dam consisting of one cell with six (6) separate compartments and will have a capacity of 72 000 m ³ | ArcelorMittal did not construct the proposed sludge dams, as process changes were implemented to avoid the generation of sludge. | Not applicable | |
| | General waste site within footprint of 5.5 ha in extent and capacity of 24 000 tons/annum | The total general waste disposed of at the site was volumes 2 161 tons for 2016. | Not applicable | |
| | Blast Furnace slag storage and processing facility covering an area of 45 000m ² while processing waste amounting to 80 000 tons/ annum; and | ArcelorMittal did not construct the proposed blast furnace slag storage area yet. | Compliant | |
| | Waste Transfer station covering an area of 3.8 ha and a total disposal of 930 250 tons/ annum. | There is no waste being disposed of at the waste transfer station | Compliant | |
| | Leachable control dam consisting of an H:H Lagoon of 1 ha in extent and 6m deep with a capacity of 54 m ³ | The leachate control dam was constructed according to the required specifications and has been operational since 2011. | Compliant | |
| 3.2 | Specific conditions | | | |
| | General | | | |
| 3.2.1 | MSVS will be held liable for any damage to the environment and associated costs, resulting from the proposed activity as provided for in the applicable legislation. | ArcelorMittal notes this condition. | Compliant | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|---|-------------------|-----------------------------|
| 3.2.2 | <p>A summary of all recommendations in the Environmental Impact Report (EIR) and specialist studies regarding both</p> <p>a. The closure of the existing waste disposal facility and</p> <p>b. Construction and operation of the new waste disposal facility must be included in an amended Environmental Management Plan (EMP).</p> <p>The amended EMP must also include various items (refer to ROD)</p> | <p>The EMP was amended and submitted to the Department for approval. GDARD approved the EMP in 2009.</p> <p>The EMP has since been updated again and the current EMP in place is dated April 2013 Revision 6. The EMP contains all the required elements as mentioned in this condition. Records of the upgrade are available on request.</p> | Compliant | |
| 3.2.3 | An independent suitably qualified and competent person must verify that all aspects requiring inclusion have been included in the EMP. | The EMP was verified in 2008 by GCS. The updated EMP dated April 2013 was updated and reviewed by Zantow Environmental in 2013. No further amendments have been conducted. | Compliant | |
| 3.2.4 | The amended EMP must be submitted to GDARD within 3 months after date of authorisation. Written approval on the EMP must be obtained from the Department before project can commence. | ArcelorMittal complies with this condition. Written approval on the amended EMP was obtained from the Department. No further amendments have been made. | Compliant | |
| 3.2.5 | Once the Department has approved the EMP it must be adhered to throughout the life cycle of the project. The EMP is considered an extension of the Record of Decision (ROD) and a non-compliance with any provision of the EMP will amount to non-compliance with this ROD. | <p>ArcelorMittal notes this condition.</p> <p>Regular EMP audits are undertaken by the designated WMCO to ensure compliance with the EMP requirements.</p> | Compliant | |
| 3.2.6 | All mitigation measures identified during further studies, monitoring, auditing or other activities (including for the borrow pit), as the case may be must be included in the EMP on an on-going basis. The | <p>The EMP was updated in 2013 and submitted to GDARD on the 5th July 2013.</p> <p>GDARD indicated in a letter dated the 10th July 2013 that the EMP</p> | Compliant | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|---|---|--------------------|-----------------------------|
| | amendments must be communicated to the Department within two (2) month of inclusion. | <p>must in future be reviewed and approved by DEA.</p> <p>The EMP was submitted to DEA on the 11th July 2013 and re-submitted a signed copy on the 15th April 2014.</p> <p>This condition does not require the amended EMP to be approved but only communicated and ArcelorMittal is therefore considered in compliance</p> | | |
| 3.2.7 | The contents of the EMP and its objectives must be made known to all contractors, subcontractors, agents working on the site. The applicant and its successors will be held accountable for any breach or deviation from the EMP and conditions of this authorisation. | Contractors working on the site have been taken through an induction and training process on the EMP. Signed registers are available on site as proof of this undertaking. | Compliant | |
| 3.2.8 | The approved amended EMP must be kept on-site. | An approved EMP is available on site and kept at the weighbridge and at the Environmental Management building. | Compliant | |
| 3.2.9 | Different mitigation measures for dust suppression must be investigated in order to reduce ambient inhalable particulate and dust fallout levels from the MSVS waste disposal site. The preferred measures that will be implemented with timeframes for implementation must be submitted to the Department within 3 (3) months of the date of this authorisation and prior to commencement of both closure activities and construction activities. Reduction of nuisance dust must be achieved through mitigation of the source of dust emissions through speed and traffic reduction, source improvement (e.g. tarring, graveling) and surface treatment (watering or chemical stabilisation) to reduce dust from roads. | <p>Dust suppression measures have been implemented on site by means of a large water tanker ("the bell") on the unpaved roads. Dust monitoring buckets were observed on site during the audit,</p> <p>Dust fallout was noted to have decreased, however it was noted to be high at DB9 on the main road access and from the waste site. The water spraying frequency could also be increased, especially during dry and windy conditions.</p> | Partial compliance | Moderate |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--|--|---|-------------------|-----------------------------|
| 3.2.10 | An updated project schedule with timeframes must be submitted to the Department 30 calendar days prior to the commencement of both closure activities and construction activities of a new waste disposal facility. The schedule must clearly indicate the different phases of operation and rehabilitation as well as environmental performance measurements. | No construction activities were conducted during the audit period. | Not applicable | |
| 3.2.11 | The results of the third phase of the groundwater modelling must be submitted within one (1) month after it has been finalised. Depending on the results, the Department may amend the ROD or impose additional conditions on MSVS as provided for in the applicable legislation. | The GWMP was submitted to the Department of Water Affairs (DWA) for approval and not to GDARD or DEA. ArcelorMittal is of the opinion that the competent authority (DWA) must first approve the proposed GWMP before implementation. Upon approval of the GWMP, ArcelorMittal will submit the GWMP to DEA and GDARD. | Compliant | |
| 3.2.12 | An Environmental Control Officer (ECO) must be appointed to audit environmental performance against the requirements of the approved EMP (both the existing waste disposal site and the new waste disposal site). Internal environmental audit reports must be submitted to the Department for review every 2 months from the date of commencement of the project. The reports must include a compliance checklist and incorporate any deviations and remedial actions undertaken in case of non-compliance. | Mr P Mkemezulu is the appointed ECO for the site. | Compliant | |
| Construction of New Waste Disposal Facility | | | | |
| 3.2.13 | The Department must be informed of the date on which construction will commence and of the date on which construction has been completed. Such notification must reach the Department 7 calendar days prior to and 7 calendar days after these | Department was informed accordingly. | Compliant | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|--|-------------------|-----------------------------|
| | respective events. | | | |
| 3.2.14 | The establishment and operation of a landfill requires S20 (1) Waste disposal site Permit, hence AMSA must obtain relevant approvals from the Department of Environmental Affairs and Tourism (DEAT). | At the time of construction ArcelorMittal was issued with a Section 20 Exemption permit and had a Water Use License in place for the waste site facilities. Application was submitted to ECA S20 permit (2004) in May 2007 in fulfilment of this condition, additionally to the Exemption permit and a waste management license was issued in 2011. | Compliant | |
| 3.2.15 | The sludge dam, leachate collection dam, new waste disposal site phase 1-3, leachate collection system, general waste and new waste disposal site must be constructed in line with Minimum Requirements for disposal by landfill (DWAF 1998) or amended/ updated version thereof, as well as according to DEAT S20 (1) Waste disposal site Permit. Copies of final drawings issued under S20 (1) must be forwarded to the Department as soon as they have been issued. | Copies of the WML and design drawings were distributed at the waste site Monitoring Committee Meeting held on the 2012.01.26. | Compliant | |
| 3.2.16 | A buffer zone of 25m from the new waste disposal site must be implemented around all hydrological features with the exception of the reticulation pond, as recommended on page 31 of the Ecological and Aquatic sensitivity Assessment. | The new waste site is located some 800 meters from the fence line and there are no hydrological features within this area. | Compliant | |
| 3.2.17 | An ecological management plan for all systems must be compiled by a suitably qualified specialist and form part of the amended EMP. This Ecological Management Plan must be implemented and compliance to the plan must be discussed in the annual environmental report referred to in 3.2.25. | Ecological management plan developed by GCS November 2010 and incorporated into the EMP. An updated assessment was done by Golder in 2013. The facility undertakes manual cutting and removal of invader plants as well as fire controls. No herbicides are used. The facility is re-vegetated, and the disposal site is remediated | Compliant | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|---|--|---|-------------------|-----------------------------|
| | | with indigenous grasses and the vegetation seems to be successful. The open areas are vegetated with indigenous species in a phased approach and the area surrounding the waste site has been significantly improved since the previous inspection. | | |
| Operations | | | | |
| 3.2.18 | The operation of the existing waste disposal facility, new waste disposal facility, waste transfer station, BF slag crushing plant and storage area, leachate control dam, sludge dam, salt cells and general waste disposal site must be carried out as indicated in the Operational Response Monitoring and Closure (ORMC) plan and in accordance with the Minimum Requirements for Disposal by landfill (DWAF 1998) or amended/updated version thereof. | The operational Management plan has been incorporated into the EMP, and currently being implemented. | Compliant | |
| 3.2.19 | The Residue stabilisation and utilisation of the resulting product must be guided by the guiding principles and results summary in the background and progress report undertaken at the end of June 2005, and submitted as part of the EIR: App H. | The stabilisation studies were completed and although technically feasible, the operational requirement were found to be a challenge and the cost of the project made it economically unfeasible | Compliant | |
| Closure and Rehabilitation of the Site | | | | |
| 3.2.20 | Closure and rehab of the existing waste disposal facility and other waste disposal facility that form part of the CRMF must be carried out as indicated in the closure, rehab and end-use plan submitted as part of the EIR: Appendix G. | Refer to the specialist recommendation assessment table | Compliant | |
| Monitoring committee | | | | |
| 3.2.21 | A multi stakeholder monitoring committee as required by the DWAF's minimum requirements must be | A Monitoring committee was established. The last meeting was held on the 8 th of March 2017. The committee did not report any | Compliant | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|--|-------------------|-----------------------------|
| | <p>established to monitor the short term operation with a view to closure, remediation and opening of a new waste disposal facility. This committee must be established and meet before the proposed activity commences and quarterly thereafter. Significant environmental issues identified in the monitoring committee meetings as well as plans for their resolution must be forwarded to this Department within 7 (seven) calendar days from the date of the meeting.</p> | <p>significant environmental issues in the reporting period.</p> <p>From the review of the December 2014 minutes it seems as if the committee is functioning well and requests for information and access to site has been granted. The attendance of the meeting and involvement of all stakeholders is however limited at times.</p> | | |
| | Monitoring | | | |
| 3.2.22 | <p>Monitoring and reporting for the existing waste disposal site, new waste disposal site, waste transfer station, BF slag crushing plant and storage area, leachate control dam, sludge dam, salt cell and general waste disposal site must be undertaken as indicated in the monitoring plan submitted as part of EIR: App G.</p> | <p>Waste record keeping and monitoring is done in terms of the approved EMP which is in line with Appendix G of the EIR. Waste records were available during the audit.</p> | Compliant | |
| 3.2.23 | <p>Ground water monitoring must be undertaken as indicated in the Groundwater Monitoring Procedure submitted as part of EIR: Appendix 6.</p> | <p>Groundwater monitoring is done in terms of the approved EMP which is in line with Appendix 6 of the EIR. Groundwater quality monitoring records were available for review.</p> | Compliant | |
| 3.2.24 | <p>Surface water monitoring must be undertaken as indicated in the monitoring plan submitted as EIR: Appendix 5.</p> | <p>Surface water monitoring is done in terms of the approved EMP which is in line with Appendix 5 of the EIR. Surface quality monitoring records were available for review.</p> | Compliant | |
| | Reporting requirements | | | |
| 3.2.25 | <p>An annual environmental performance audit conducted by an independent, certified auditor must be submitted to the Department, the first being due 12 months after</p> | <p>This audit report has been set up to address all items raised in the ROD and the License conditions.</p> <p>The previous audit was conducted by GCS Water and</p> | Compliant | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|--|-------------------|-----------------------------|
| | the signature of the authorisation for the operation towards closure of the landfill site, rehabilitation and establishment of a new waste disposal facility and annually thereafter. The annual audit must include <i>various items as listed</i> | Environmental Consultants and finalised in September 2016. | | |
| 3.2.26 | Detailed and up to date records must be kept of all incidents and complaints pertaining to the operation towards the closure, rehabilitation and establishment of a new waste disposal facility, how they were managed, and the recurrence thereof prevented. These records must be made available to the Department within 14 calendar days upon written request by the Department. | Complaints register and system in place. The facility has an external complaints register which was reviewed during the audit. One of the external complaints related to a neighbour that complained about a tar like smell at the waste site. The complainant alleged that the tar products are handled and dumped at the waste site which causes the nuisance. The complainant was invited for a site visit and answered in written format. | Compliant | |
| 3.3 | General conditions | | | |
| 3.3.1 | Any changes to, or deviations from the project description as set out in the ROD must be approved in writing by the Department before such changes or deviations may be effected. 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. | There were no deviations noted from the project description during the audit period. | Compliant | |
| 3.3.2 | The Department may review the conditions contained in this letter (ROD) and may, by notice in writing to the applicant, amend, add or remove a condition. | The review process took place in November 2016. AMSA is waiting for the Department to finalise the process. | Compliant | Observation |
| 3.3.3 | The applicant must notify the Department in writing at least 10 days prior to the change of ownership, project | No changes of this nature have occurred during the audit period. | Compliant | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|--|-------------------|-----------------------------|
| | <p>developer for the alienation of any similar rights for the activity described in this letter (ROD). The applicant must furnish a copy of this document (ROD) to the new owner, developer or person to whom the rights accrue that the conditions herein are binding on them.</p> | | | |
| 3.3.4 | <p>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 these new details become known to the applicant.</p> | <p>No changes were reported during this period.</p> | <p>Compliant</p> | |
| 3.3.5 | <p>Authorisation of this activity is granted in terms of Environmental Conservation Act, 1989 (Act 73 of 1989) only and does not exempt the holder from compliance with any other relevant legislation.</p> | <p>ArcelorMittal notes this condition. ArcelorMittal also has a Water Use License and Waste Licence in place</p> | <p>Compliant</p> | |
| 3.3.6 | <p>The applicant shall be responsible for ensuring compliance with the conditions contained in this letter (ROD) by any person acting on his behalf, including but not limited to, an agent, servant or employee or any other person rendering a service to the applicant in respect to the activity, including but not limited to, contractors and consultants.</p> | <p>ArcelorMittal notes this condition.</p> | <p>Compliant</p> | |
| 3.3.7 | <p>Department 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.</p> | <p>No departmental inspections relating to the waste site for 2016.</p> | <p>Compliant</p> | |

| Condition Nr | Condition in ROD | Observation / Comments | Compliance status | Intensity of non-compliance |
|--------------|--|---|-------------------|-----------------------------|
| 3.3.8 | The applicant must notify the Department within 24 hours if any condition of this authorisation cannot be or is not adhered to. The notification must be supplemented with reasons for non-compliance. | No new findings made in the reporting period. | Compliant | |

5. MONITORING DATA ASSESSMENT

5.1. GROUNDWATER DATA

ArcelorMittal Vanderbijlpark Works has an extensive ground water monitoring network as can be seen from the aerial photograph below.

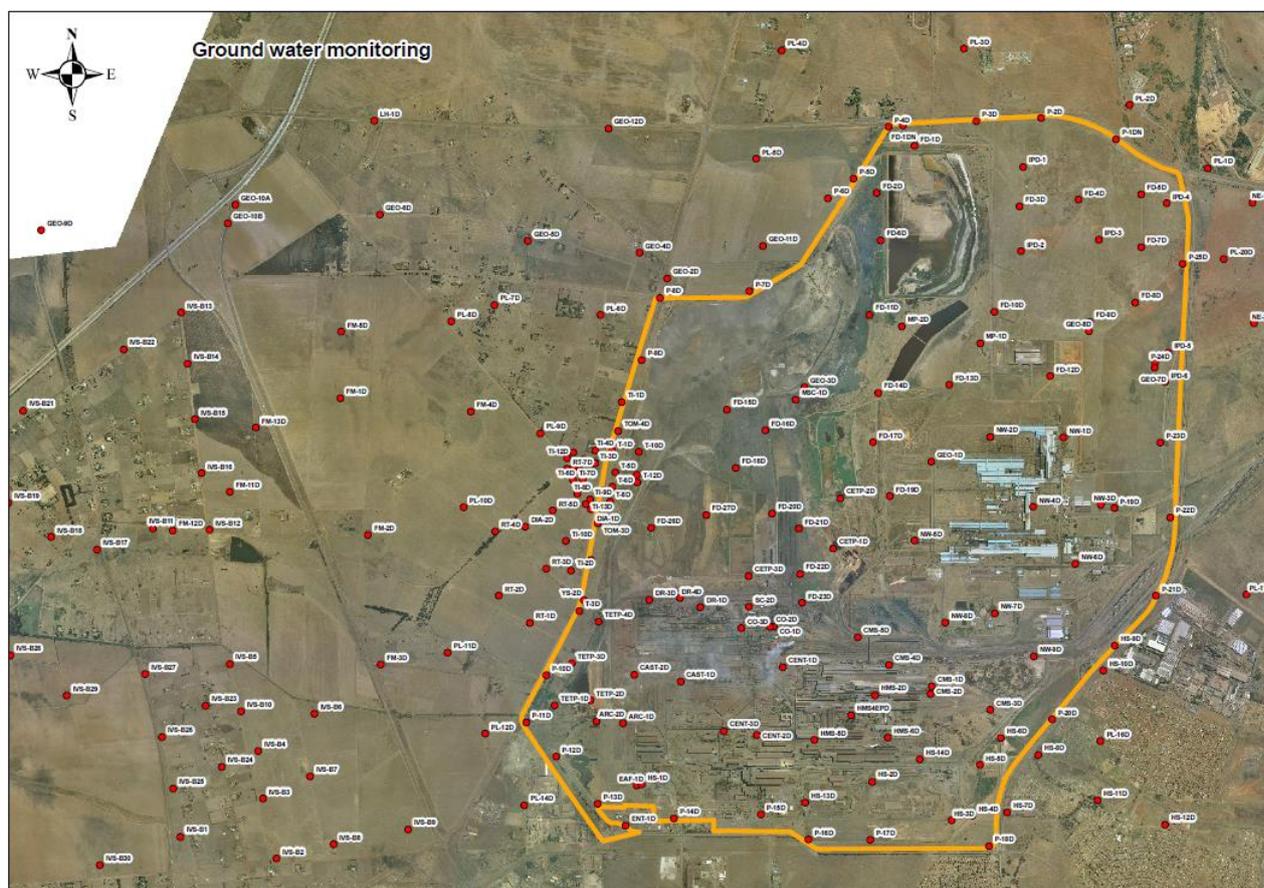


Figure 1: Locations of all existing boreholes

Monitoring data is available from the year 2000 to date. The longer term trends indicate an overall improvement in the ground water conditions in terms of inorganics and a stable organic source. According to the external specialist studies conducted, there are currently no external groundwater users that are impacted by the ground water quality. ArcelorMittal completed a holistic Ground Water Management Plan (GWMP) through the appointment of Golder Associates in 2012 and had the plan externally peer reviewed in 2013.

To assess the ground water quality boreholes relating to the waste disposal site facilities will not make sense without the understanding of the bigger picture. The new Dry Metallurgical waste site is lined and the new lined domestic waste site overlaps onto the old domestic and metallurgical waste site that was established in the early 1960's without a liner system. The ground water monitoring results downstream from the new site is therefore not indicative of the impact of the new site but rather from the previous unlined waste disposal sites that was operated. During the Environmental Impact Assessment phase the impact from the new lined facilities were modelled by means of a numerical ground water model for the site taking into account the closure of the old unlined facilities. The expected outcome would be positive but the improved conditions in the ground water aquifer would take many years to manifest.

When considering the ground water monitoring results upstream of the waste disposal site facilities, borehole PL-3D are the correct borehole to use, considering that there is a ground water divide between the eastern and western section of the site. The Electric Conductivity is used as an indicator tool to determine if a flag should be raised. When the EC exceeds 150 mS/m, the element is considered elevated from background levels or exceeding Drinking Water standards Class 1. It does not mean that the ground water then has an unacceptable impact as there is no ground water users at the specific location, but must only be used as an indicator tool or screening level 1.

The remaining boreholes listed can all be considered as downstream boreholes from the overall waste management activities on site. The location of the boreholes is indicated in the aerial photograph in relation to the different waste management facilities.

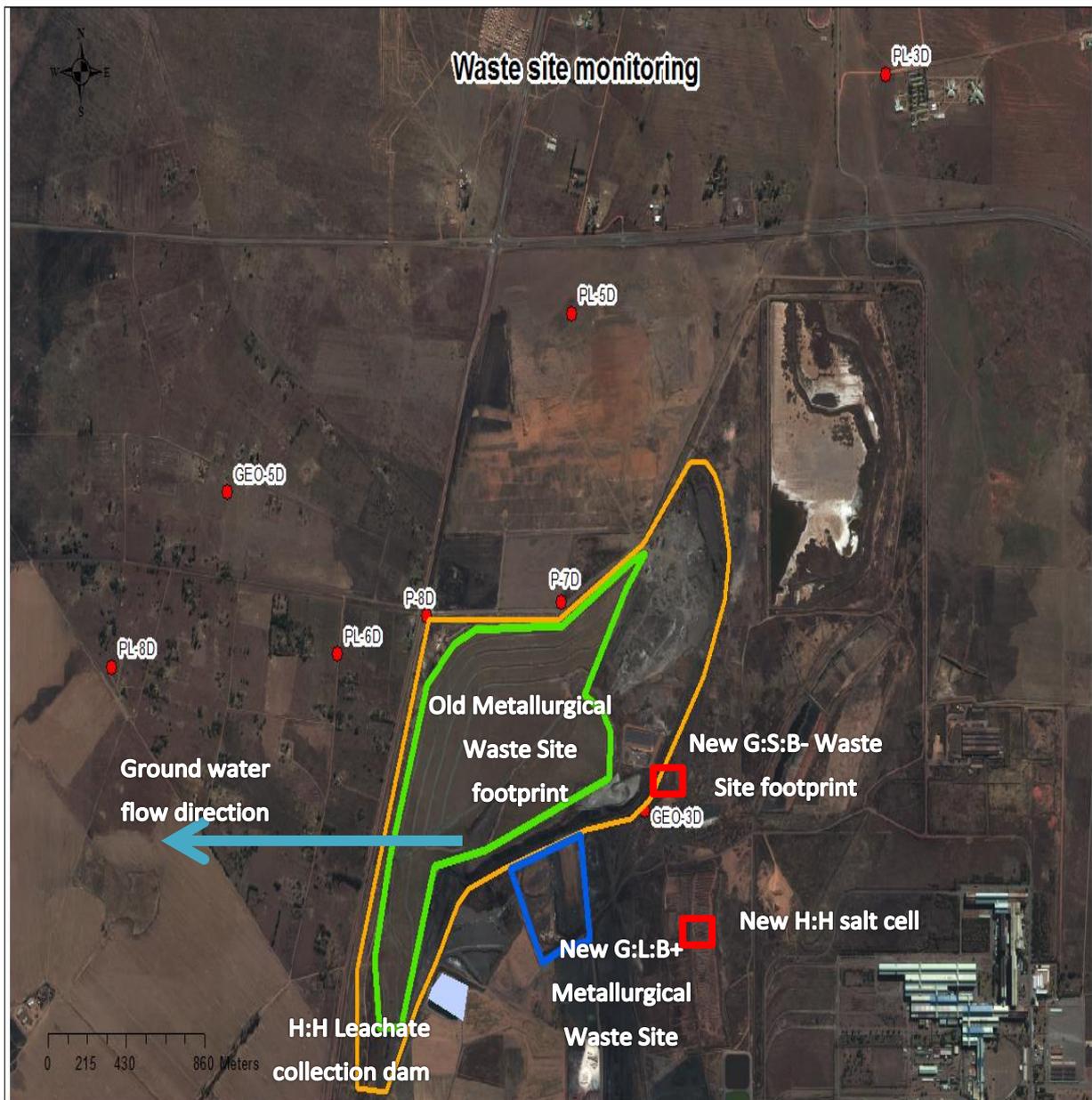


Figure 2: Boreholes chosen for monitoring waste impacts

Borehole PL-5D is not within the ground water flow path of the waste site impacts, but is included in the trended results to be used as a back ground indication. The borehole is however located in its own stream

of other activities. The impact on the ground water in this region has previously been noticeable but acceptable, and that the contaminant plume has indicated an improved ground water quality. The figured below indicate the EC trend measured in the borehole since the construction and operation of the new waste site facilities.

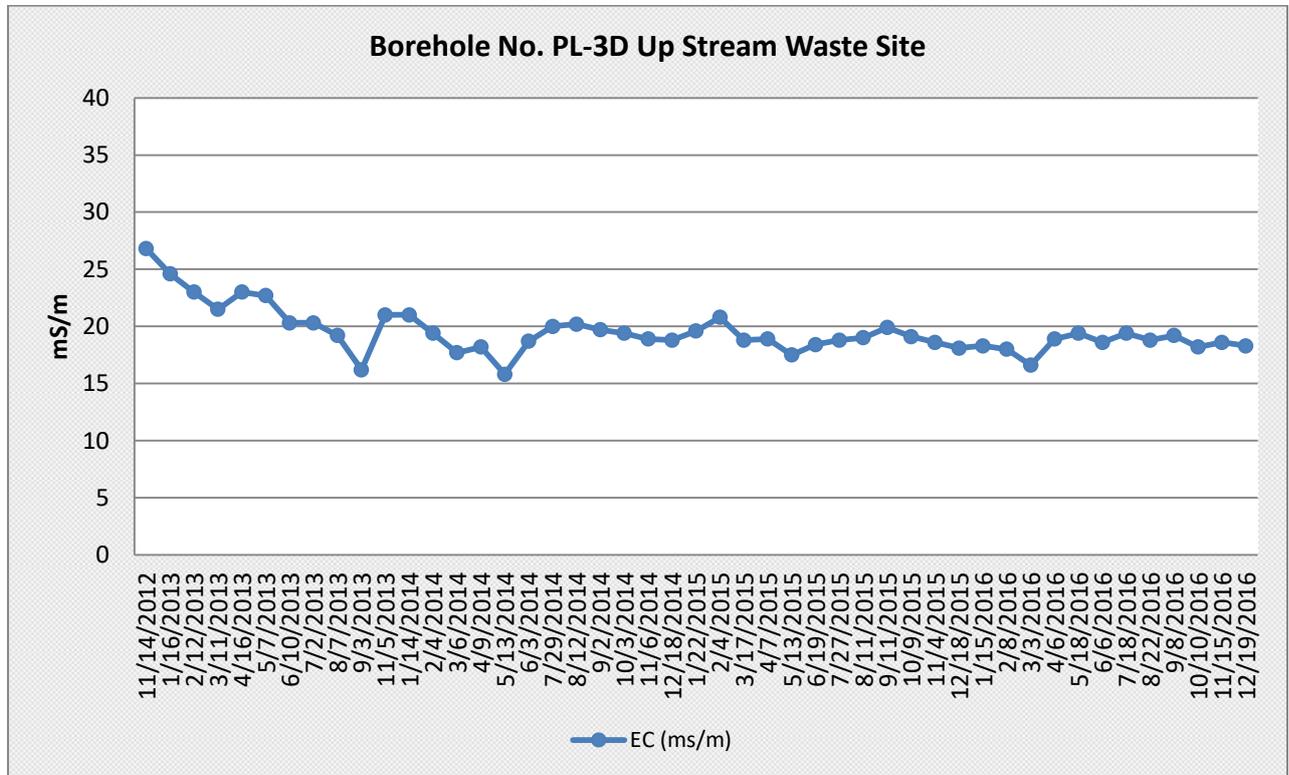


Figure 3: PL-3D upstream

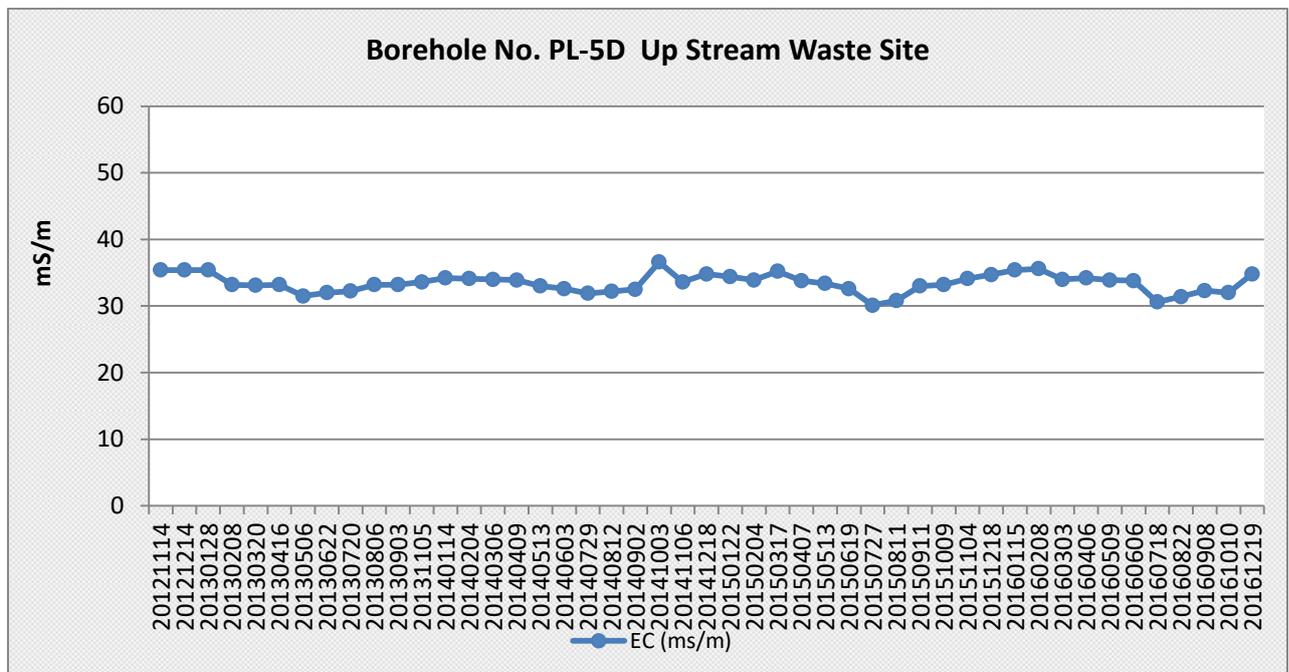


Figure 4: PL-5D Electric Conductivity

P7D, P8D and P9D (Figure 5, 6 and 7 below) are on the edge of the western boundary of the old Metallurgical waste site. The impact therefore of the previous site (the Metallurgical) is demonstrated by

these boreholes. The elements that are elevated in this area are mostly Calcium, Magnesium, Chlorides and Sulphates.

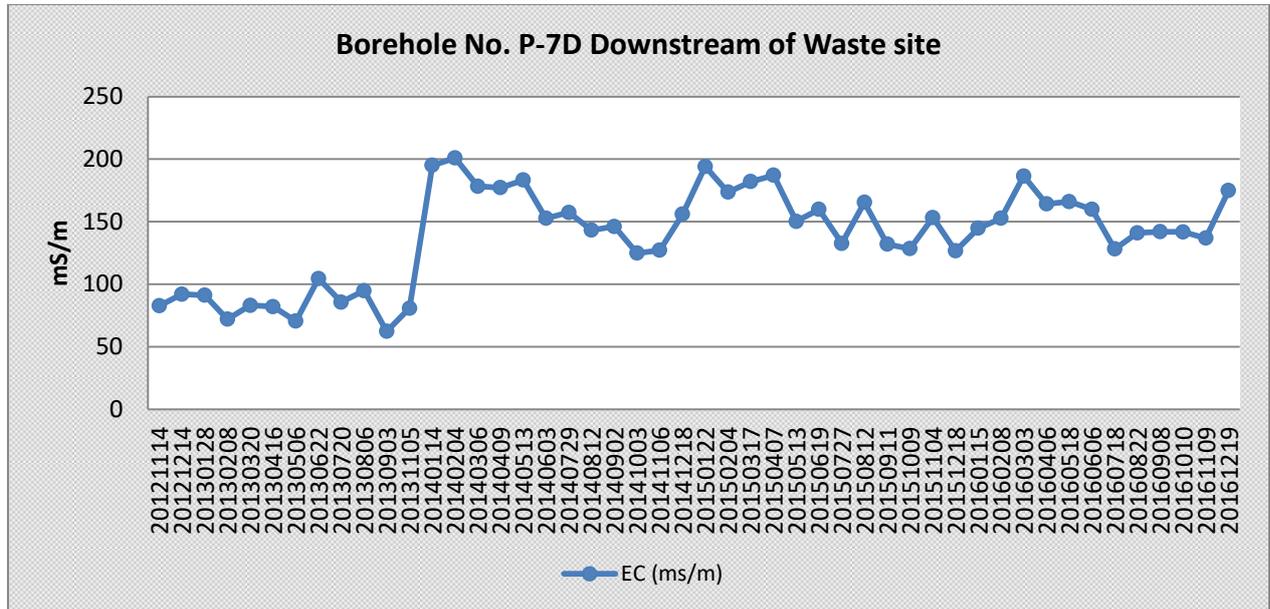


Figure 5: P7-D Electric Conductivity

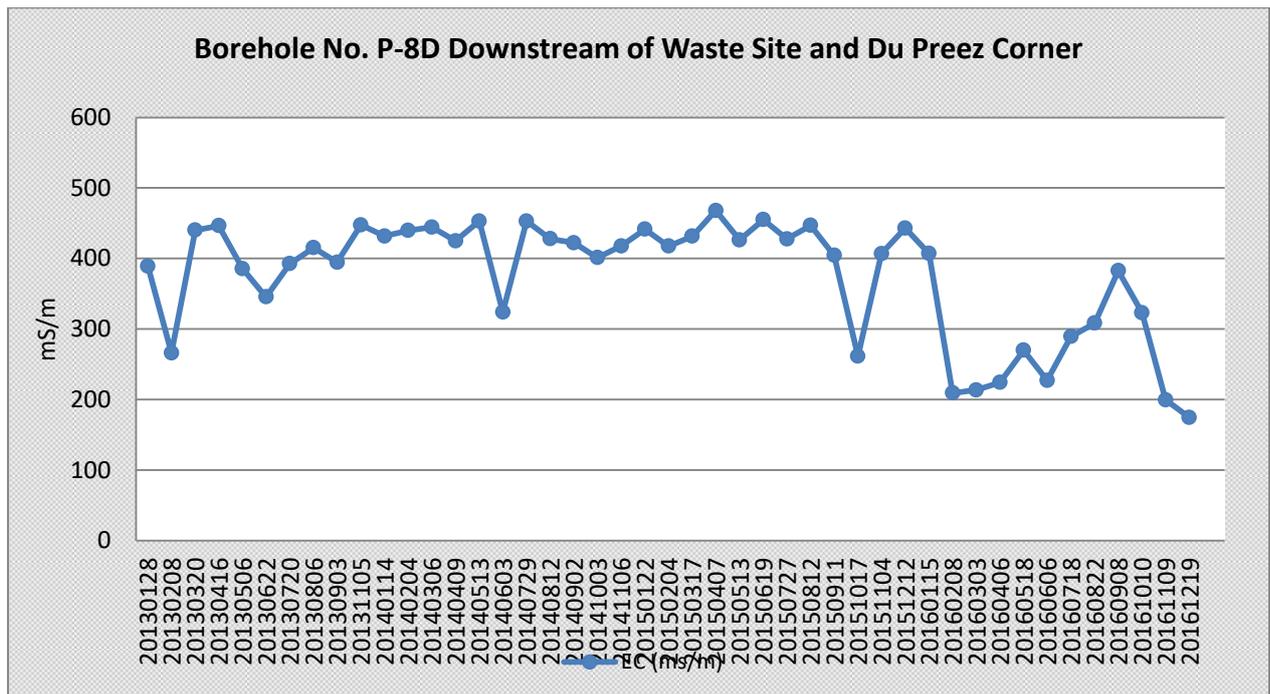


Figure 6: P8-D Electric Conductivity

Monitoring boreholes PL 6, GEO-5D, PL-8D (figure 7 and 8) indicates the impact about 500 meters from the old waste site boundary.

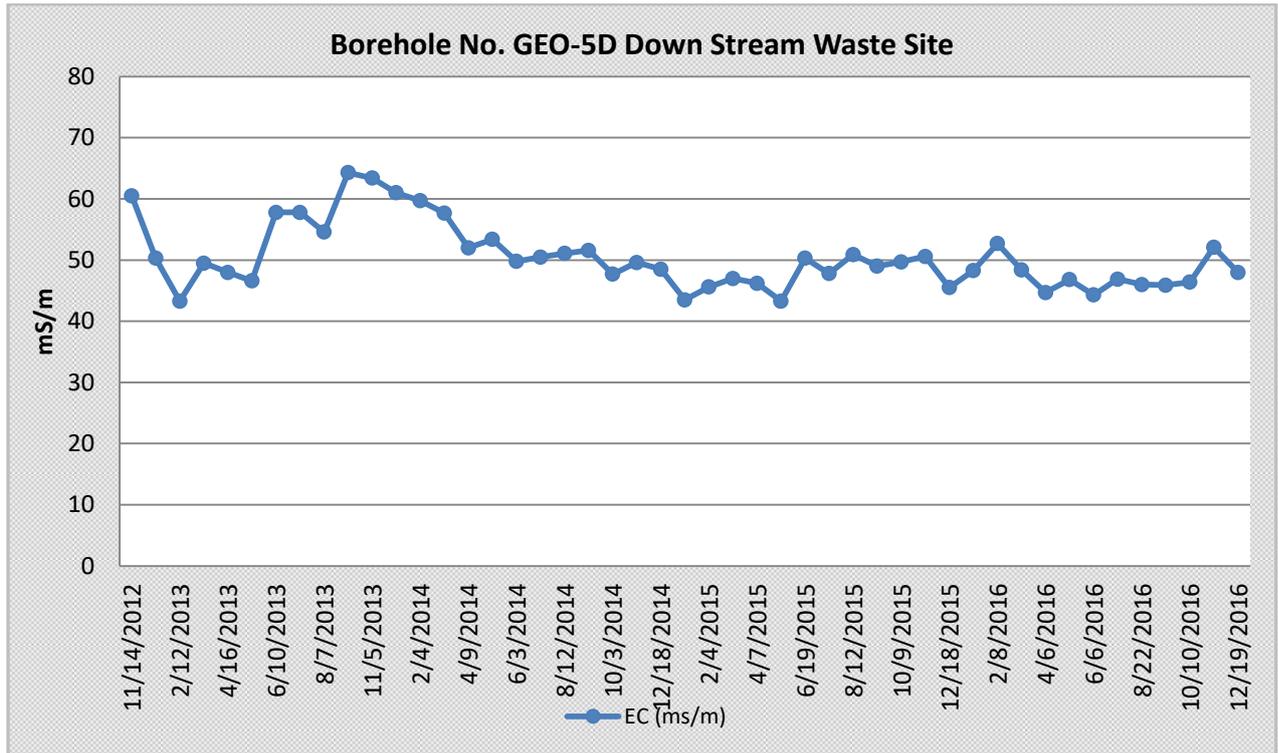


Figure 7: GEO 5D Electric Conductivity

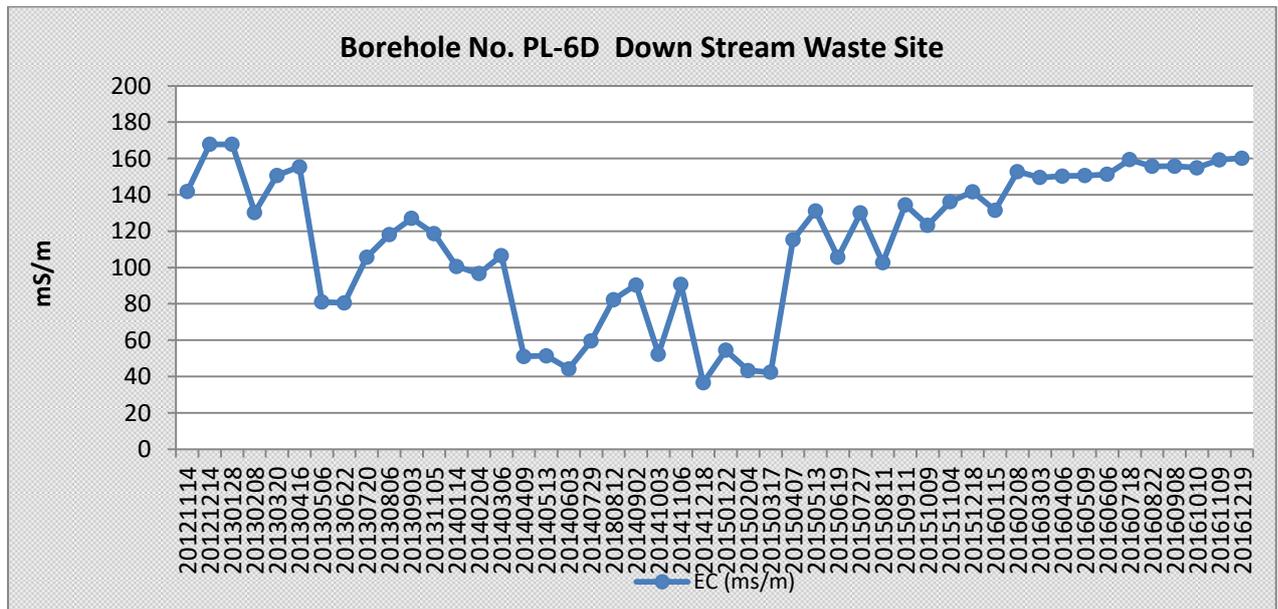


Figure 8: PL-6D EC long term trend

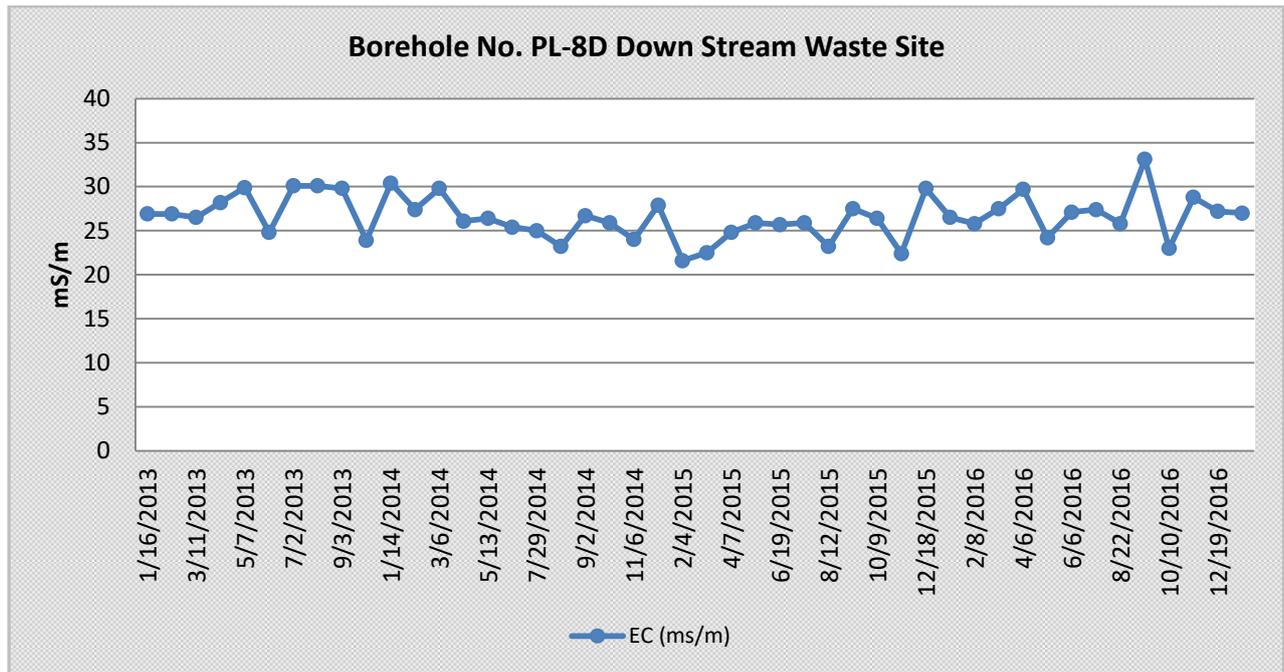


Figure 9: PL-8D EC long term trend

5.2. STORM WATER FROM OLD SITE AND LEACHATE FROM NEW SITE

ArcelorMittal conduct storm water quality monitoring at the down chute of the old waste site and the leachate dam. The down chute was constructed so that it channels all the runoff water quality from the remediated areas to the storm water discharge point. The run off water quality is measured on an ad hoc basis after a rain event at the down chute, and is of a good quality and complies in all aspects to a Class 0 (Ideal range) drinking water standard before it combines with other storm water canals for discharge.



Photo 1 and 2 Storm water run off canal

The site is sloped and shaped during remediation in order for the run off water to all collect at the down chute and then flow via the canal on the western boundary of the works until it joins the storm water network for the works before discharge.

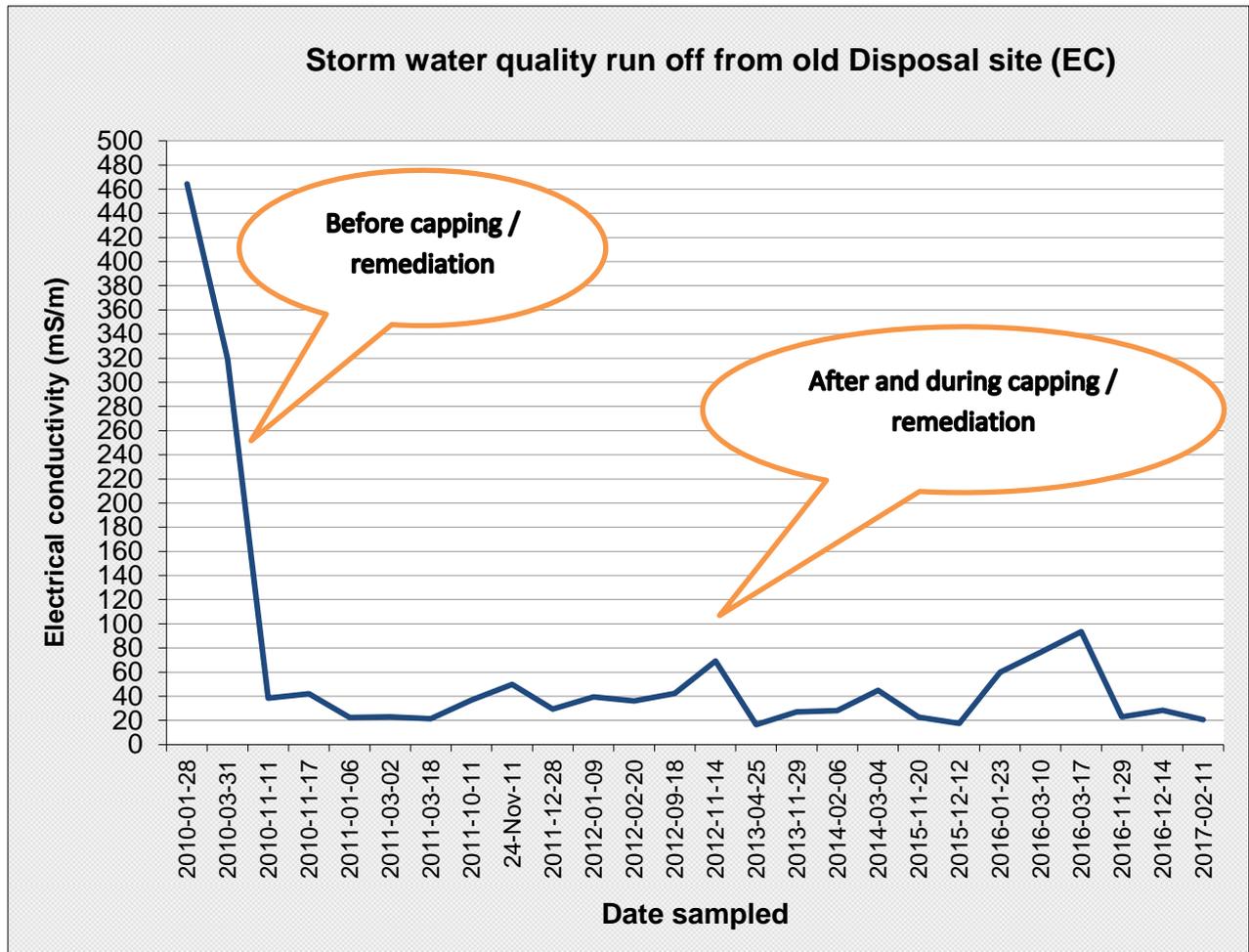


Figure 9: Storm water quality at the old waste site prior to and after remediation

The remediation of the old Metallurgical waste site has therefore had a very positive impact on the run off quality from the site.

The new Dry Metallurgical waste disposal site has been constructed with a paddock system to capture all contaminated run off which is captured and diverted into the leachate collection system. The leachate collection system is gravity fed into the H:H Leachate dam.

Leachate water from various waste related activities is diverted to the leachate collection dam but the metallurgical waste sites contribution would be the most. The volume and quality of the leachate is measured. The facility has the infrastructure to pump and treat the leachate captured at Main Treatment Plant (MTP) but to date the levels of the leachate control dam did not necessitate this. The evaporation rate exceeds the inflow of leachate into the dam.



Photo 3, 4 & 5 Paddocks at Metallurgical Site

Photo 6: H:H Leachate Dam

(Contaminated runoff collection)

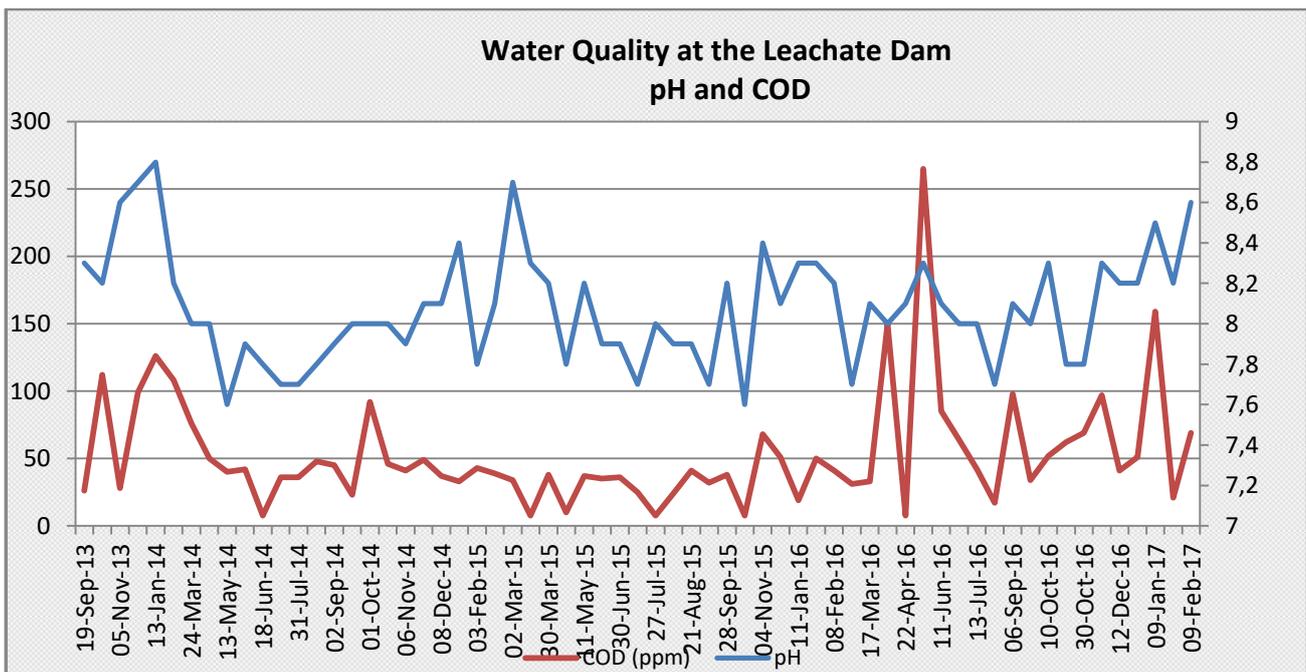


Figure 10: Leachate dam pH and the Chemical Oxygen Demand (COD) levels

During the site visit the leachate dam volumes indicated therefore that the capacity remains below 55% of the maximum and therefore does not pose a risk to overflow. The quality of the leachate water fluctuates as expected as more and more water is evaporated and the salt concentration builds up.

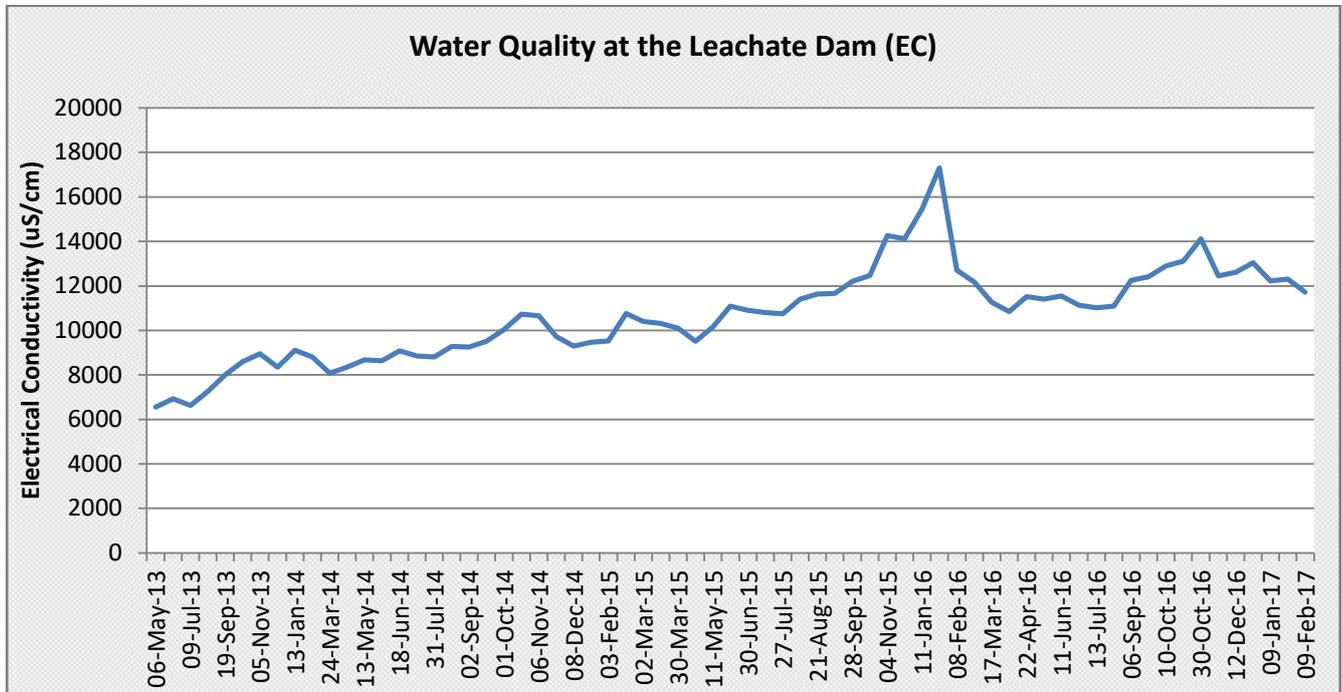


Figure 11: Leachate Dam EC Water Quality

5.5. AIR QUALITY

Vanderbijlpark Works currently monitors the ambient air quality (PM10) at the Works through air quality monitoring stations and dust fallout buckets. The ambient air quality monitoring stations for the site are located at the positions indicated in figure 14. Ambient air quality is well within the national standard of 75 µg/m³ for PM10. The average data for the north station for 2016 is calculated to be 45.31µg/m³, with the west station averaging 61.22 µg/m³.



Figure 14: Ambient air quality (PM10) monitoring stations for the waste site

The amount of exceedences was assessed as there was enough data available to make such observations. The data availability of the stations is more than 80% and the facility has improved their monitoring system. As part of the air quality monitoring network, the facility also monitors the dust fall out levels around the waste disposal site facilities at the locations as indicated below.



Figure 15: Position of Waste Site Dust Fall out Buckets

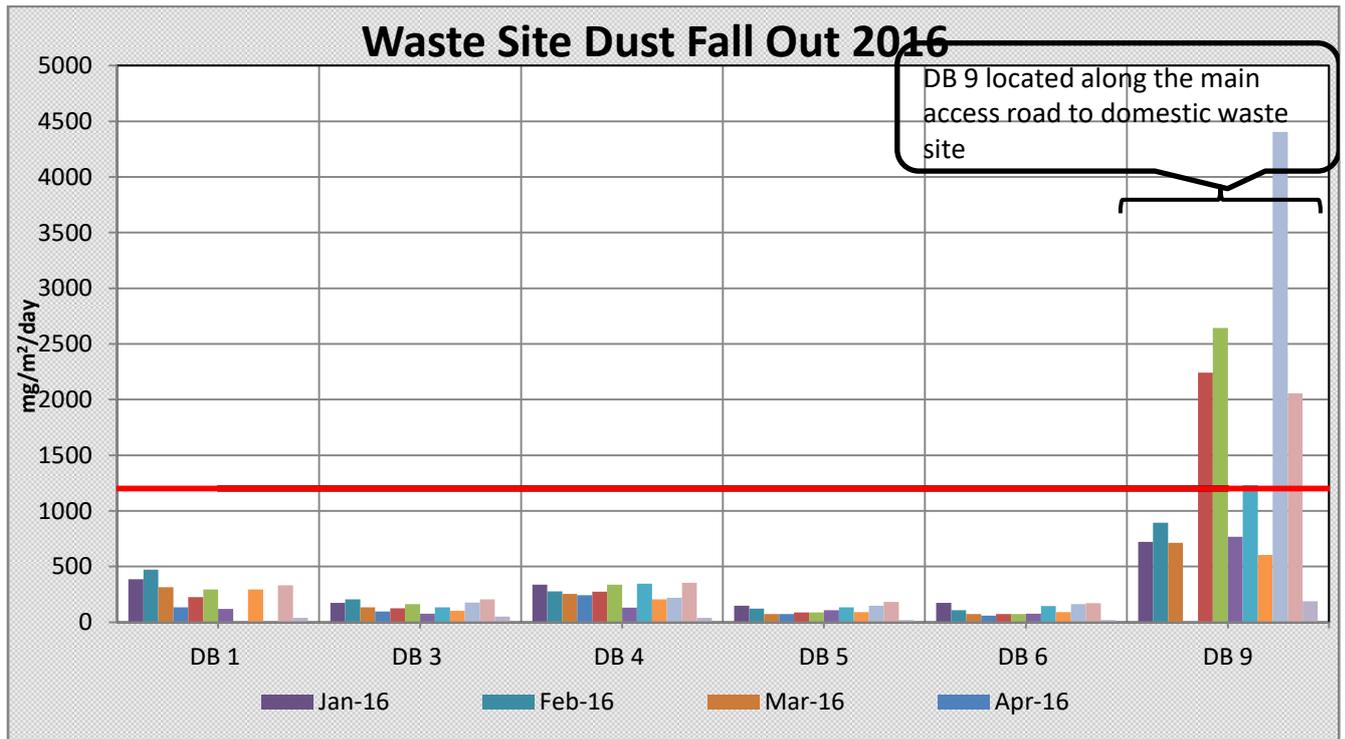


Figure 16: Dust fall out monitoring results

The data indicates that the fence line dust fall out levels is acceptable but the internal area located near the main access road to the waste site facilities exceeds the dust fall levels significantly. The major sources in the area are the roads, the new waste site, the coal storage site and other raw material storage areas and the Sinter Mixing bed.

ArcelorMittal must implement additional dust suppression measures in the CRMF area in general (not only limited to the waste site) in order to reduce the dust fall out levels in the area. The facility reported that the contract with a mobile sweeper has been re-instated and that various trials are being considered for treating the unpaved roads.

5.4. REMEDIATION PROGRESS

The remediation of the old Metallurgical waste site has been completed. The site was being remediated in phases of which Phase 1 and 2 have been completed.

Phase 1 of the remediation of the old waste disposal facility has been successfully completed in 2010. Sufficient vegetation has been established in 2011 and no significant issues detected to date. The vegetation in general seems to have established well with sparse invader grass being present, which is not of great concern. No evidence of erosion was observed during the site visit and the storm water collection and down Shute systems are functioning effectively.



Photo 6, 7, 8 & 9 Remediation Phase 1, 2 & 3

Phase 2 of the remediation of the old waste disposal facility commenced in 2011 and was completed in March 2012. Sufficient vegetation has been established in 2011 and no significant issues detected to date. The vegetation in general seems to have established well with sparse invader grasses present which is not of great concern. No major erosion has been observed and the area around the tip station creates a good impression from an aesthetics perspective.

First portion of Phase 3 was completed in March 2015 and a letter of approval was presented to the auditor from the Department of Environmental Affairs granting ArcelorMittal permission to use historical Basic Oxygen Furnace (BOF) slag as fill material on phase 3. In order to tie in with the down chute and storm water system established in Phase 1 and Phase 2, the area of Phase 3 needed to be filled and shaped in order to allow free drainage of rain water.

The progress observed during the site inspection was commendable.

5.5. COMPLAINTS AND INCIDENTS

No environmental incidents were recorded or reported to the authorities during this reporting period. The incident reporting procedures is in line with this requirement.

The facility has an external complaints register which was reviewed during the audit. One of the external complaints related to a neighbour that complained about a tar like smell. The complainant alleged that the

tar products are handled and dumped at the waste site which causes the nuisance. The complainant was invited for a site visit and answered in writing.

6. CONCLUSION AND RECOMMENDATIONS

Zantow Environmental Consulting was contracted by ArcelorMittal as an independent consultant to conduct an annual external environmental compliance audit on its Environmental Authorisation (RoD) (GAUT 002/04-05/1126) for the Metallurgical Waste Disposal Site. The ROD addresses the closure of the old waste disposal site and the development of the New Waste Disposal facilities.

From Table 1, it can be concluded that ArcelorMittal is generally compliant to the conditions of the ROD. A historical partial compliance related to the construction of the H:H Salt cell which was completed during the previous audit period, however, notices were not submitted to GDARD but only to DEA. Another partial compliance is related to the significant dust fallout peaks were noted at DB9 due to the unpaved road. Minor observations were made during the site visit, and have been recorded in the waste management assessment.

Where non-compliances were recorded, the non-compliance was contextualised in terms of the intensity. This equates to an objective view of the seriousness of the non-compliance and also then leads to recommendations where moderate to major non-compliances have been observed.

The following recommendations are made to improve compliance to the ROD;

- The contaminated run off at the tip station is not diverted to the H:H Leachate collection dam via a pipe or lined canal and this should be rectified. (**WMCO, As soon as possible**).
- Additional dust control measures to be implemented at the road, and the material handling areas (especially at DB 9). (**ArcelorMittal, 2017**).

---End---