



Iron Environmental Management System PROCEDURE

IEMS Water Monitoring Procedure – Acid Rock Drainage

RIO TINTO

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1. Introduction

1.1 Purpose

To document the procedures relating to surface water monitoring for Acid Rock Drainage (ARD) at the Rio Tinto mine sites in line with best practice guidelines and relevant standards.

1.2 OH&S

It is the responsibility of personnel carrying out activities in accordance with this procedure to ensure that they are aware of and comply with all IronSafe, Environmental and regulatory requirements, in particular:

- Take care when walking on wet and uneven surfaces;
- Wear appropriate PPE at all times (eg. hard hat in pit areas);
- Current site pit permit will be required for access;
- Be aware of alterations that may have occurred to an area;
- Be aware of the presence of spiders and snakes;
- Maintain water intake to avoid dehydration.

1.3 Equipment

- PPE
- Procedures, maps
- Field sheets, pen and folder
- TPS WP-81 water meter & sample vessel
- Sample bottles, waterproof marker
- Esky(s), ice blocks/packs, crushed ice

2. Sample Point Location and Frequency

There are currently designated surface water sampling points around the mine sites with ARD related issues.

The sample frequency should ideally be quarterly, but in reality is event based as flow at these locations is dependant upon a fairly significant rainfall event.



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3. ARD Surface Water Monitoring

3.1 Collecting Field Chemistry Data (pH, EC, Temp)

- ◆ Ensure you have all necessary equipment for the task and that the TPS meter is calibrated ready for use.
- ◆ Refer to document RTIO-HSE-0010730 – IEMS Water Monitoring Procedure - QA / QC for appropriate QA/QC procedures to follow.
- ◆ Follow steps 3 – 5 of Section 5.1 of document RTIO-HSE-0010745 – IEMS Water Monitoring Procedure - Surface Waters to collect sample and analysis for pH, EC and Temperature in the field.

3.2 Collecting Samples for Laboratory Analysis

- ◆ Ensure you have all necessary equipment for the task (eg. sample bottles).
- ◆ Refer to document IEMS- RTIO-HSE-0010730 – IEMS Water Monitoring Procedure - QA / QC for appropriate QA/QC procedures to follow.
- ◆ Follow steps 3-6 of Section 4.2 of document IEMS- RTIO-HSE-0010745 – IEMS Water Monitoring Procedure - Surface Waters to label bottles, collect samples and preserve in storage for analysis.

4. References

- ◆ RTIO-HSE-0010724 – IEMS Water Monitoring Procedure - Planning & Preparation
- ◆ RTIO-HSE-0010726 – IEMS Water Monitoring Procedure - Groundwater Monitoring
- ◆ RTIO-HSE-0010745 – IEMS Water Monitoring Procedure - Surface Waters
- ◆ RTIO-HSE-0010729 – IEMS Water Monitoring Procedure - Storage & Dispatch
- ◆ RTIO-HSE-0010730 – IEMS Water Monitoring Procedure - QA / QC
- ◆ TPS WP-81 meter Operating Manual (located in WP-81 meter container)