HydroTerra
Environmental Monitoring Specialists

Case Study - Groundwater monitoring Program at Queensland Alumina Refinery -Gladstone

QUICK FACTS

Client: Queensland Alumina Ltd
Location: Gladstone, Queensland
Date: 2015-
Services: Low-flow groundwater sampling
Project management
Sample management
QA/QC Guidelines
Provision of custom Ipad field forms

OUR CLIENT

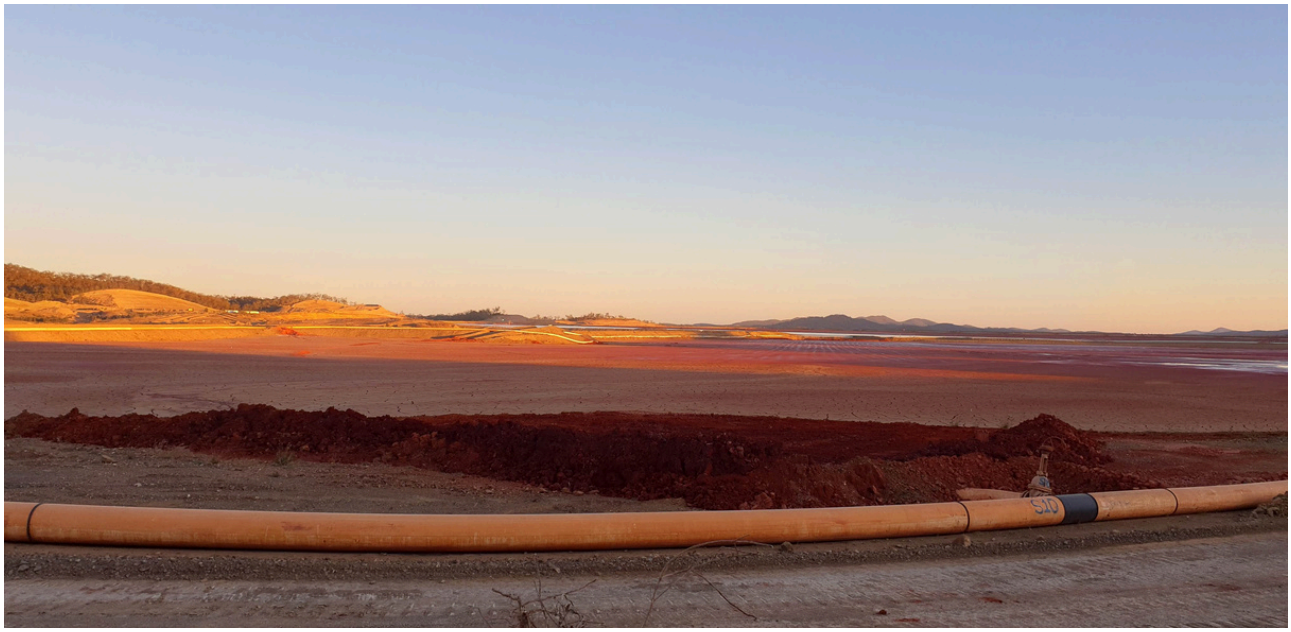
Queensland Alumina Limited (QAL), Gladstone, Queensland, is one of the world's largest alumina refineries by production capacity, producing up to 3.95 million tonnes of alumina annually since operations began in 1967. Over the years, QAL has been operated by various international aluminium consortiums however since April 2005, it has been jointly owned by Rio Tinto Alcan (80%) and Rusal (20%), and in 2017, QAL marked its 50th year of operation.

QUEENSLAND ALUMINA LIMITED

THE ISSUE

The QAL Site had approximately 330 groundwater monitoring bores that were installed between 1993 and 2015 across the refinery. QAL has obligations under its EA and contamination management plan to monitor a number of these bores periodically. The monitoring scope is reviewed annually and may change based on the new information available.

HydroTerra was engaged to conduct quarterly, biannual and annual sampling of over 300 bores in and around the alumina refinery using low flow methodology.



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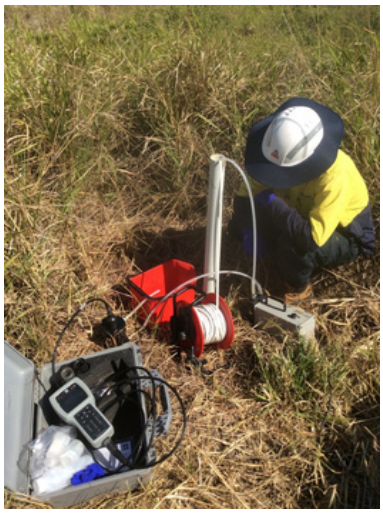
HYDROTERRA SOLUTION:

- Both peristaltic pump and bladder pumps were used to sample the wells at varying water depths. Gauging of water level, water quality parameters and analytical sample suites were taken at most bore locations at site.
- Teams completed stringent OH&S procedures and inductions across the various work zones onsite and followed Australian QA/QC standards for groundwater sampling. This included obtaining work permits for each distinct refinery area and signing in and out of each of these areas when work was conducted.
- For work on the refinery site, staff wore monogoggles and a face shield to protect themselves from potentially caustic liquids.



EQUIPMENT USED:

- Solinst 410 Peristaltic Pump,
- Solinst 122 Interface Meter and 102 Water level Meter.
- YSI Pro plus Water Quality Meter
- QED Bladder pump
- Biobailers

RESULTS

There was a mix of quarterly, biannual, and annual sampling. The annual round was over 300 bores to be sampled. The two quarterly rounds were ~90. The biannual round was ~200. These numbers fluctuated year to year depending on sampling requirements. There was a high safety risk on site which was minimised by constant communication.

At the end of each sampling round HydroTerra produced a Quality Assurance and Quality Control (QA/QC) report based on the field activities and lab results.

ABOUT HYDROTERRA

Australia's leading provider of innovative end-to-end environmental monitoring solutions and products. With 118+ global suppliers and 15,000+ products, our expert team of engineers, applied scientists, instrument technicians and electronic engineers can help find the right solution. HydroTerra aims to provide trusted advice to some of Australia's largest private and public organisations making an impact on our environment.

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