



MRL CRG Cleanaway Update

30 May 2018

Hydrogeological Assessment, December 2017



Hydrogeological Assessment



Landfill Operations Pty Ltd

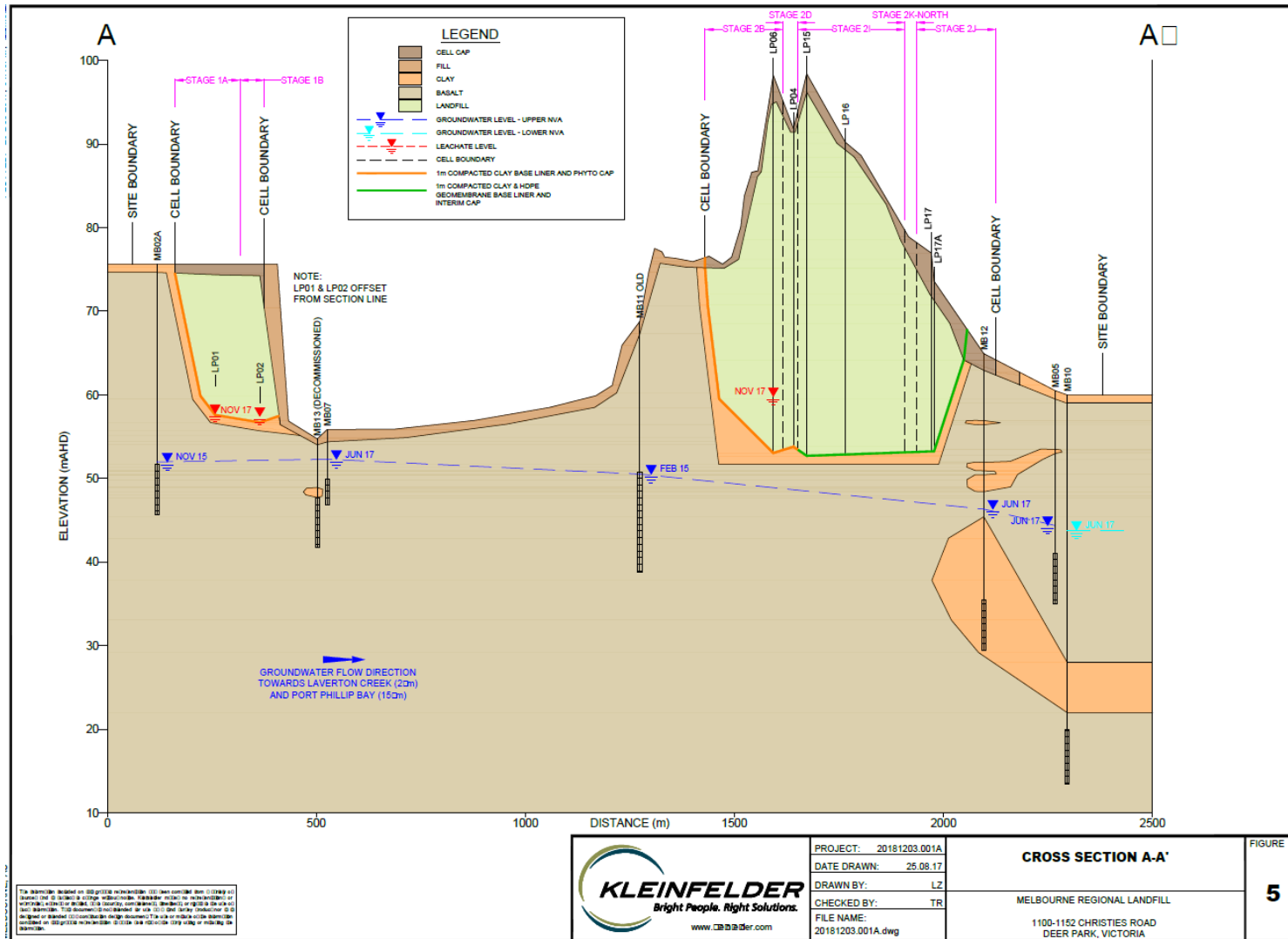
Melbourne Regional Landfill
1100-1152 Christies Road
Deer Park, Victoria

Project No. 20181203.001A

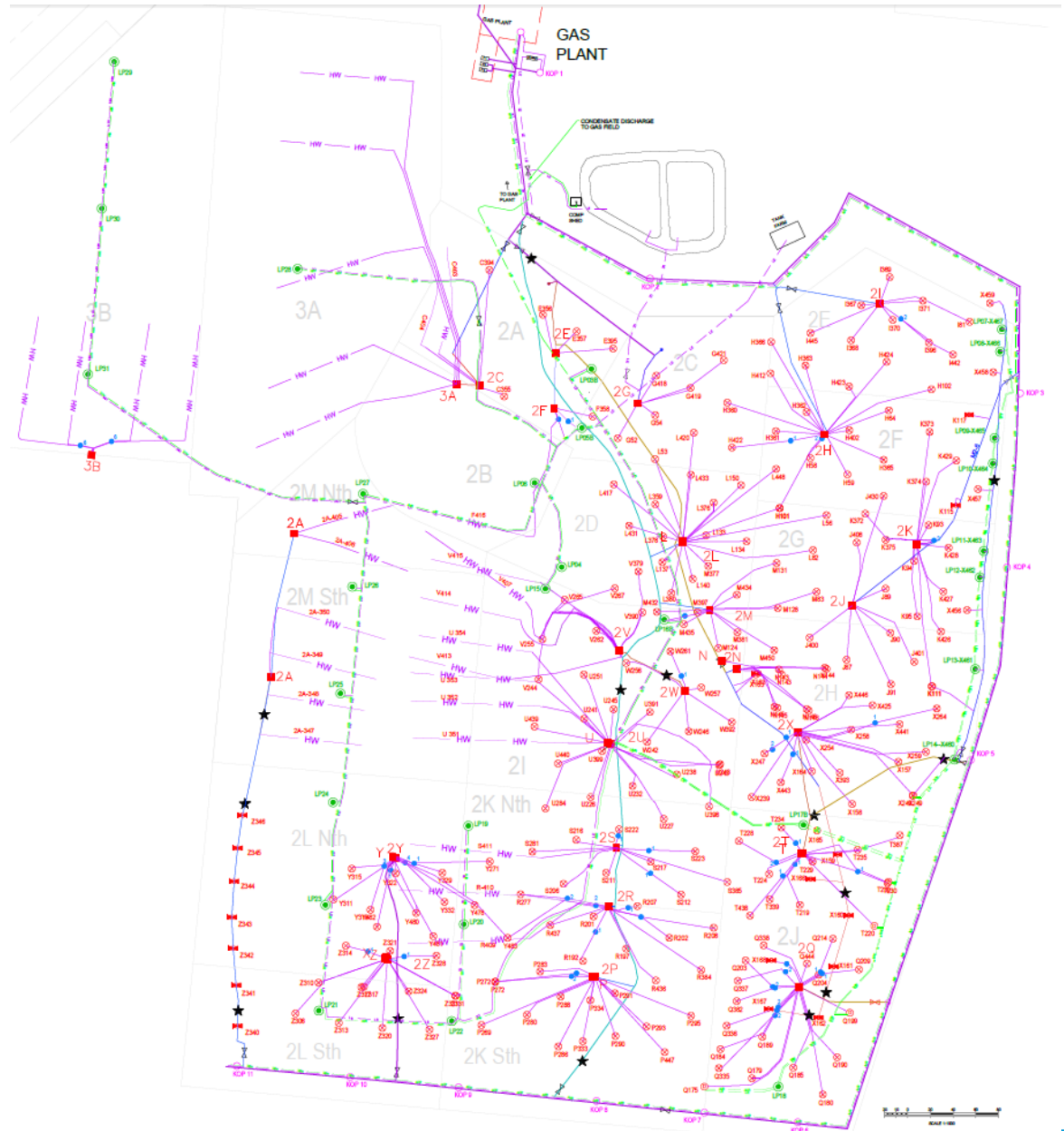
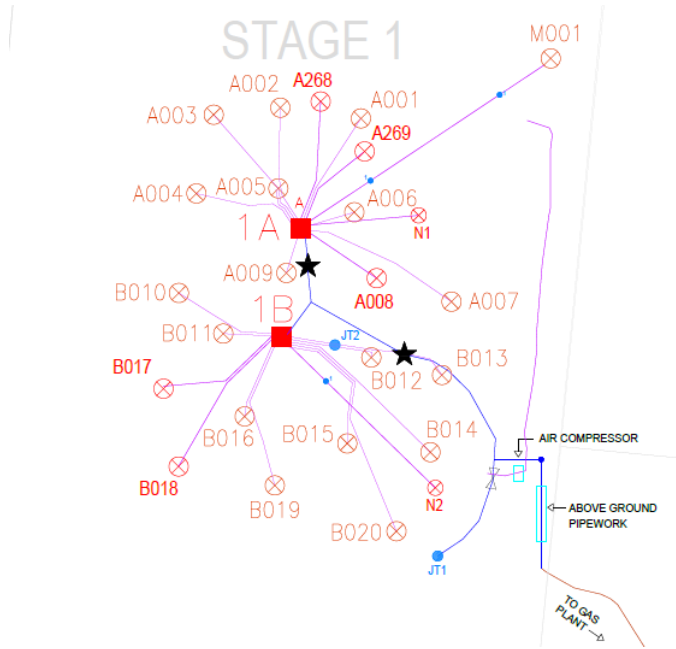
Report Date: 15 November 2017
Revision 1 Date: 4 December 2017

- Landfill is not impacting on offsite groundwater beneficial uses and hence complies with BPEM and the site licence.
- Leachate management is required to reduce leachate levels down to compliance level. These works have gone out to tender.
- With the removal of leachate and exposure of the well perforations, it is anticipated that landfill gas production will increase marginally.
- The most recent groundwater chemistry results indicate leachate is not impacting on groundwater.

Hydrogeological Assessment – Conceptual Site Model

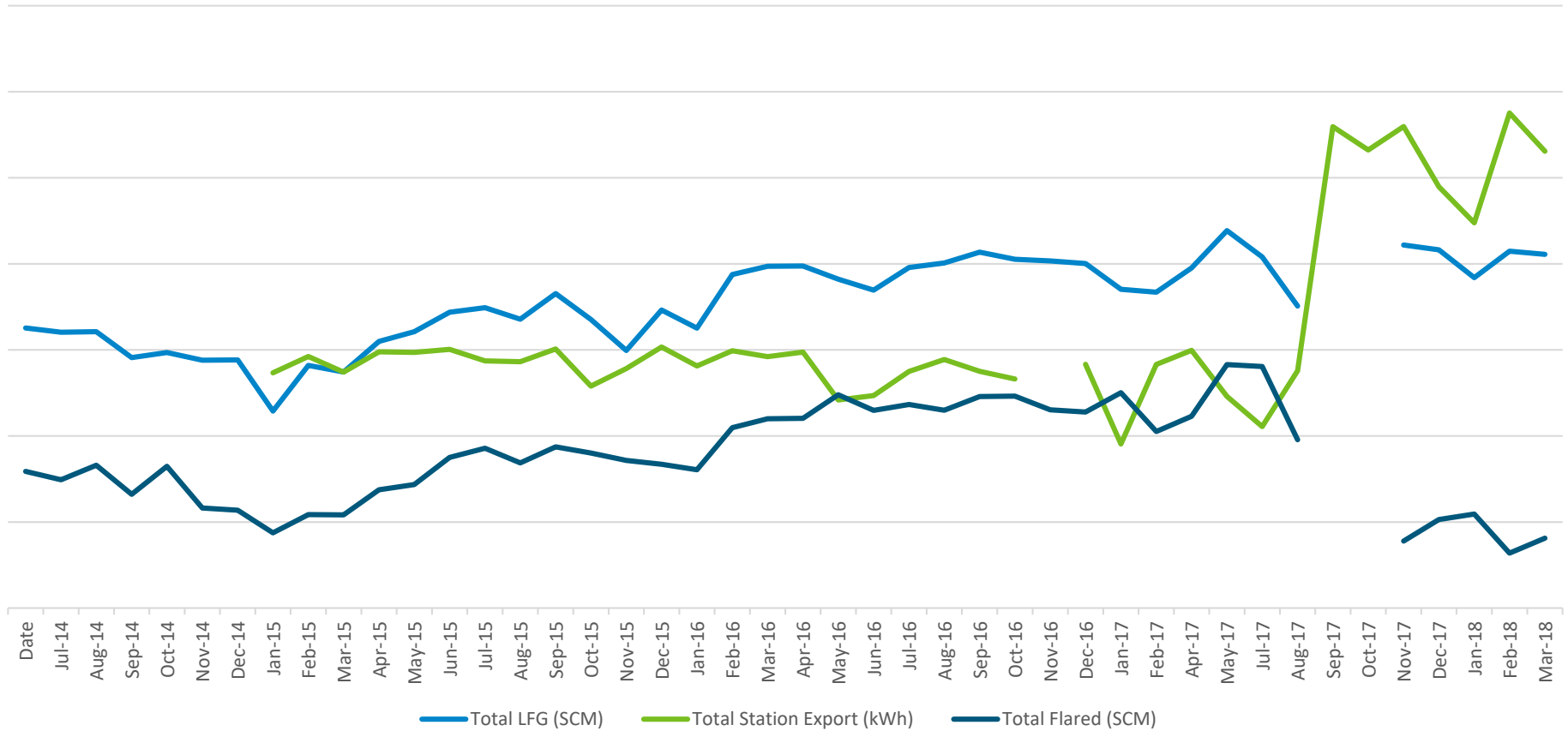


Gas Collection System



Gas Collection System

Biogas Plant Data



Cell 4A

Construction Update (Photo: 21 April 2018)



Licence Amendment – Acid Sulfate Soils



INFORMATION BULLETIN

ACID SULFATE SOIL AND ROCK

Publication 655.1* July 2009

INTRODUCTION

This bulletin provides guidance to landowners, developers, consultants and other people involved in the disturbance of soil, sediment, rock and/or groundwater about identifying, classifying and managing acid sulfate soils and rock.

Waste acid sulfate soils and rock must be managed in accordance with the requirements of the *Industrial Waste Management Policy (Waste Acid Sulfate Soils)* 1999 referred to as 'the Policy'.

What are acid sulfate soils?

The Policy defines 'acid sulfate soil' as:

...any soil, sediment, unconsolidated geological material or disturbed consolidated rock mass containing metal sulfides which exceeds criteria for acid sulfate soils specified in Publication 655 entitled 'Acid Sulfate Soil and Rock' published by the Authority in 1999 as amended from time to time or republished by the Authority'.

The metal sulfides are principally pyrite – FeS_2 – and exposure of them to oxygen and water can generate sulfuric acid. This may result in acidification of soil, sediment, rock, surface water and groundwater. Run-off and leachate from acid sulfate soils can adversely impact aquatic communities, agricultural and fisheries practices and engineering works. Acidic leachate can also dissolve aluminium, iron and other metals from soil and sediment, potentially impacting on the beneficial uses of the environment (established in State environment protection policies (SEPPs)).

IDENTIFICATION, MANAGEMENT AND REUSE

The Policy sets out the requirements for managing the disposal and reuse of waste acid sulfate soils, and specifies the responsibilities of those involved. This bulletin applies once acid sulfate soil is disturbed on a site and becomes a waste intended for reuse on that site or reuse/disposal offsite.

The *Environment Protection Act 1970* defines 'waste' as:

...any discarded, rejected, unwanted surplus or abandoned matter.'

* This replaces publication 655, issued August 1999.

Where the identification and management of acid sulfate soil and rock is required for the purposes of planning and/or land development (including according to the *Environmental Effects Act (2006)* or the State planning policy framework), the *Victorian Coastal Acid Sulfate Soil Strategy* and *Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils* should also be consulted.

Acid sulfate soils and sediments may occur in different environments to those where rocks with elevated levels of metal sulfides are found. Due to differences in chemical and physical properties, they have distinct identification and assessment requirements. For this reason, parts of this publication distinguish between soils (including sediments) and rocks. However, for the purposes of the Policy, acid sulfate soils, sediments and rocks are all identified by the term 'acid sulfate soil'.

OVERVIEW

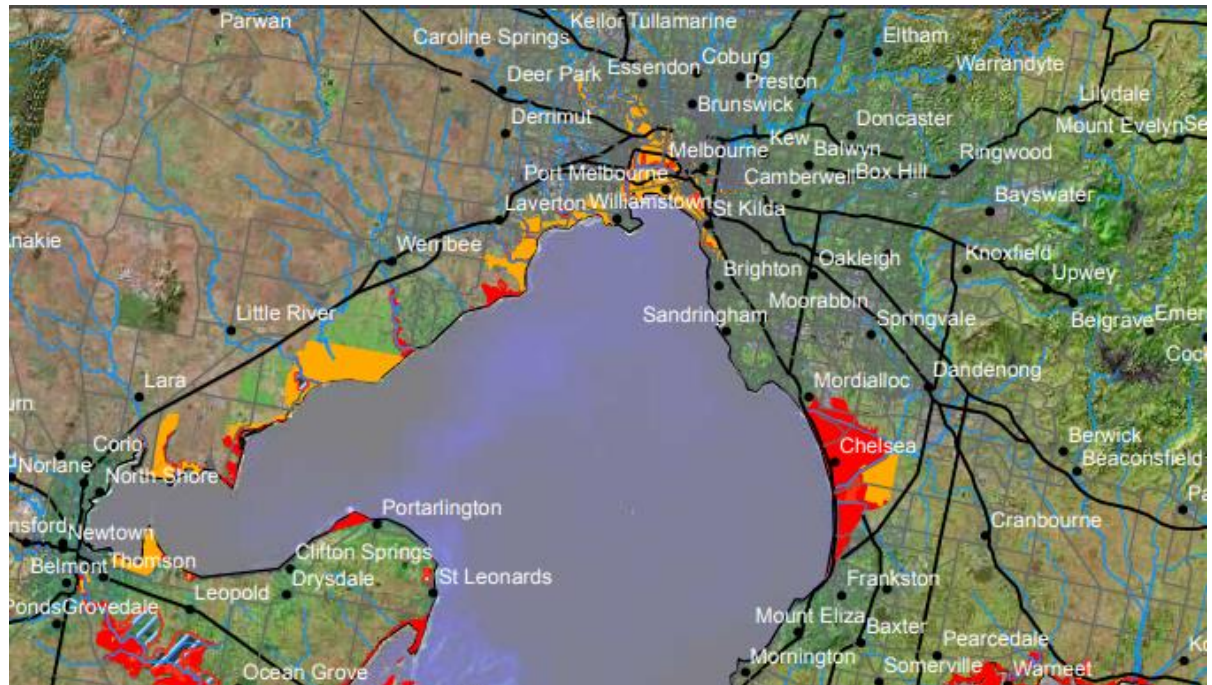
Acid sulfate soils and rocks can affect land use and development. Their classification and management needs to be considered during the planning stage – before land is cleared, drained or construction works begin.

Disturbance of acid sulfate soils and rock can adversely impact land, water and ecosystems in the following ways:

- Environmental quality – affecting soil quality, surface and groundwater quality, and aquatic habitats.
- Agricultural practices – loss of rural productivity, loss of commercial and recreational fisheries, the cost of additional lime and fertilizer requirements and degradation of drainage systems.
- Engineering and landscaping works – the corrosion of concrete and steel and the design of transport structures (i.e. road or rail), buildings, embankments and drainage systems to avoid impacted areas.
- Human health – skin and eye irritation, contamination of drinking water and occupational health and safety risks.

The potential environmental impact of acid sulfate soils depends on a number of factors, including the following:

- Acid sulfate soils permitted to be disposed in the active cells.
- Several infrastructure projects in Melbourne that may require the disposal of actual and potential acid sulfate soils .



Alternate Daily Cover Trial – Tarpomatic

