



Background Paper: Trial Remediation Of Former AGL Gasworks Site

INTRODUCTION

Innova Soil Technology Limited, Daracon Group and AGL are proceeding with the trial treatment of 300 cubic metres of contaminated soil from AGL's former gasworks site at Clyde Street in Hamilton North; the soil will be transported to the BHP Closure area in Newcastle where it will be processed through the existing Innova facility.

SITE

AGL'S former Clyde Street gasworks site is located in Hamilton North. The total area of the Clyde Street site is 7.4 hectares and is made up of two parcels of land – Lot 1 in deposited plan 79 057 at 1 Chatham Road and Lot 27 in deposited plan 812 689 at 31 Clyde Street.

The site is surrounded by the Great Northern Railway to the North, Styx Creek Stormwater channel to the east and south, and Chatham Road and Clyde Street to the west.

The gasworks was in operation from 1913 to the early 1980's. As a result of long-term industrial activity, the soil and groundwater on site is contaminated with various coal tar based chemicals.

PURPOSE

The purpose of the trial is:

1. To prove Innova's Thermal Desorption process is an effective and suitable method of cleaning the contaminated soil on this site.
2. To gather information and data during the trial, which would be valuable in planning any possible full-scale remediation of the site in the future. The data would also be used in Environmental Impact Studies that would be required as part of the planning approvals process.

PROJECT

Three-hundred cubic metres of contaminated soil will be excavated from a trench (approximately 60 metres long, 2 metres wide with an average depth of 2.5 metres) on the Clyde Street site. The material will be loaded onto trucks for transport to the Innova facility.

The excavation will be managed to minimise odours generated during the operation.

Once the excavation is complete, the trench will be isolated and securely covered, and the material will be transported to the BHP site in securely covered trucks. Approximately 20 truck movements will be required to move the soil.

The loaded trucks will leave the Clyde Street site, move north across the Rail crossing, right into Chin Chen Street, left into Hubbard Street, left into Maitland Road, right into Ingall Street, right into Industrial Drive and left into the former BHP closure area.

The contaminated soil will be stored in secured and covered stockpiles on the BHP site ready for processing. Once the soil has been treated through the Innova Process and certified clean by an independent consultant, the soil will be loaded onto trucks and returned to the site as clean fill for beneficial re-use.

A major aim of this trial is to investigate all aspects of remediation on a small-scale, including site excavation, odour management, materials handling, as well as treatment through the Innova process. Such experience gained during the trial would be of great benefit in understanding the requirements for full-scale remediation of the site.

THE INNOVA PROCESS

Innova has developed a process to treat hydrocarbon contaminated soil. The innovative technology is known as Direct-heated Fast-quenched Thermal Desorption (DFTD) and it exists as a fully mobile facility.

The DFTD process, shown below, involves gentle heating of the hydrocarbon impacted soil to separate the hydrocarbon contaminants into a gas phase where they are subsequently converted into water and carbon dioxide. The process of hydrocarbon conversion is designed with a long residence times (greater than 4 seconds) to allow complete conversion of the contaminants. Advanced gas treatment and dust collection systems have been developed to prevent the contaminants reforming, resulting in a clean, dust-free gaseous product stream. From a social and environmental perspective, it was essential to develop a process to treat contaminated land while at the same time ensuring no negative impacts on air and water systems.

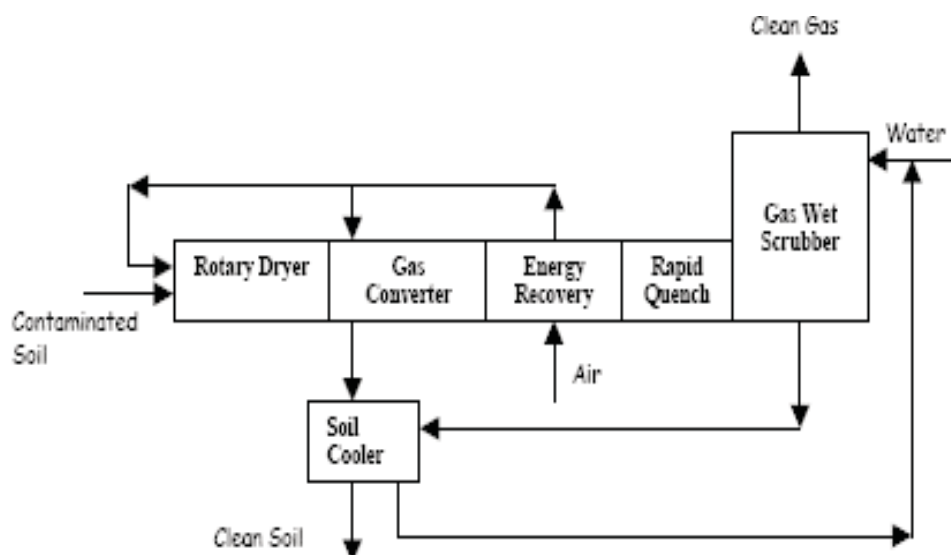


Figure 1. Schematic of the DFTD Process.

The Innova technology has been independently assessed and proven in trials at the former BHP site.

While a mobile facility has significant advantages, the cost of relocation and establishment on a new site is large, particularly in a case where the work involves the processing of small quantities of contaminated soil. In the case of this trial treatment, relocation of the Innova facility is not warranted due to the small amount (20 truck loads) of soil being treated in the trial. Full-scale remediation of the site, however, would warrant movement of the Innova facility.

Significant measures have been taken to ensure efficient and reliable operation of the proposed works and, in particular, Innova's DFTD system in terms of performance, safety and emissions monitoring and control.

TIME FRAME

The trial operation, including excavation, transport and soil treatment, will take 14 days to complete - (1 week excavations and exploratory site observations; 1 week treatment program and return of clean soil).

PLANNING CONTROLS

The trial constitutes a category 2 remediation under Newcastle City Council's DCP 43 and SEPP 55. Notification of Council is required and has been undertaken.

COMMUNITY CONSULTATION

Innova, AGL and Daracon are committed to reducing the impact of the trial on the local community.

Late last year (2004) information about the trial was provided to local residents and businesses. A series of information sessions was also held to present the trial plan and answer questions.

Information is also be available on Innova's website - www.innovasoil.com.au.

FURTHER INFORMATION

For further information regarding the plant's operations, Innova's treatment process or the trial, please do not hesitate to contact Nick Ebrill, Innova's Operations Manager or Associate Professor John Lucas, Innova's Managing Director on 4968 6773.