

CONTAMINATION ASSESSMENT PROPOSED WOOLWORTHS DEVELOPMENT WARNERVALE TOWN CENTRE

Woolworths Ltd

ENAUWARA04231AA-L01
28 November 2011



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Woolworths Ltd
PO Box 8000
BAULKHAM HILLS NSW 2153

Attention: Patrick Hall

Dear Patrick

**RE: CONTAMINATION ASSESSMENT
PROPOSED WOOLWORTHS DEVELOPMENT
WARNERVALE TOWN CENTRE**

1 INTRODUCTION

Coffey Environments Australia Pty Ltd (Coffey) undertook a contamination assessment for the proposed Woolworths Development as part of the Warnervale Town Centre Project. The Warnervale Town Centre is bordered by Sparks Road, Hakone Road and Nikko Road, Woongarah NSW.

The assessment was commissioned by Woolworths Ltd (Woolworths), in response to a Coffey fee proposal submitted by email dated 22 November 2011. The Woolworths development is proposed to be constructed on Lot 521 DP 594725 – a former nursery (the site). The proposed development is understood to consist of basement parking, retail mall, civic square and associated roads and infrastructure.

Woolworths Ltd (Woolworths) submitted a Development Application to the NSW Department of Planning (DoP) for the proposed development. Upon review of the development application, the NSW DoP requested confirmation that the site is suitable for the proposed development given the findings of Coffey's Stage 2 Environmental Site Assessment (ESA) (Reference GEOTKARI02021AA-AI dated 31 March 2008) and the current site conditions.

2 OBJECTIVES

The objectives of this assessment were to:

- Carry out a site visit to assess the current status of the site in comparison to the site conditions observed during the Stage 2 ESA; and
- Provide an assessment of the suitability of the site for the proposed development, based on the Stage 2 ESA findings and the current site condition.

3 SCOPE OF WORKS

In order to meet the above objectives, the following works were undertaken:

- A review of Coffey's Stage 2 ESA report;
- A site visit to assess current site conditions (including a visual assessment of asbestos fragments around the former building areas); and
- Preparation of a Contamination Assessment Report.

4 REVIEW OF COFFEY'S STAGE 2 ESA REPORT

Coffey undertook the Stage 2 ESA for the Warnervale Town Centre Project in 2007 (Report reference *GEOTKARI02021AA-AL, Stage 2 Environmental Site Assessment* dated 31 March 2008); with the results reported in 2008. The main areas of the site which correlated to former landuses included:

- A disturbed, benched and irregular, and mainly cleared terrain on the ridgeline associated with the previous quarry and landfill;
- A disturbed and terraced terrain with little vegetation on the western slope of the ridgeline associated with the former nursery;
- Partly forested former paddocks north of the former nursery in the north-western portion of the Site;
- Relatively undisturbed bushland in the northern, north-eastern, eastern, and south-western portions of the Site along the former quarry margins; and
- A partly disturbed and cleared area in the south-eastern portion associated with the former dwellings.

The former nursery was investigated through the excavation of 44 test pits, 10 soil composite samples, three gully sediment samples, one stockpile sample and four dam water samples. Low concentrations of some heavy metals and pesticides were recorded in some locations, though typically below adopted commercial/industrial soil investigation levels. A Total Petroleum Hydrocarbon (TPH) concentration of 1,775µg/L was recorded in one dam sample (Dam 2). Fragments of Asbestos Containing Materials (ACM) were also identified on the site surface around the framework of former buildings.

Based on the results of the Stage 2 ESA, Coffey recommended the following:

- *“Additional analyses for asbestos are undertaken across the surface of the former nursery and adjacent to buildings once demolished.”*
- *Additional water sampling be undertaken to confirm TPH concentrations in Dam 2 (former nursery), and soil/sediment analyses undertaken to assess concentrations of TPH in upslope or spillway soils.”*

5 SITE OBSERVATIONS

A site visit was undertaken on 24 November 2011 by Damien Hendrickx, an experienced Coffey Environmental Scientist who is familiar with the site and undertook the fieldwork component of the Stage 2 ESA in 2007. The site visit included observation of current site features, photographs and comparisons with the site observations made in the Stage 2 ESA.

The majority of the site appeared to be in a similar condition to 2007. No new potential Areas of Environmental Concern (AECs) were observed. A number of areas had since become overrun with weeds and long grass – it was evident that little or no maintenance works had recently been undertaken. Fragments of potential Asbestos Containing Materials (ACM) of approximately 10cm were still evident around the former building areas.

The main differences observed on the site since 2007 are noted below:

- The framework of former nursery buildings, that were still present in 2007, have been removed;
- Vehicular access to the site has been blocked from Hakone Road by emplacement of large timber poles across the site entrance, minimising the potential for illegal dumping of waste;
- The access tracks constructed for the Stage 2 ESA are mainly overgrown with long grass. The majority of the site now appears inaccessible by vehicles; and
- Part of the southern embankment of Dam 3 has failed. This has resulted in the majority of water from Dam 3 spilling out of the dam to the south downslope. The water was observed to be flowing towards the adjacent southern property and accumulating in a low-lying area in the northern section of that property.

6 CONCLUSIONS AND RECOMMENDATIONS

Based on the review of the Stage 2 ESA report and the observations made during the site visit, Coffey considers that there have been no significant changes to the site since 2007 that may have resulted in a potentially contaminating activity.

The embankment failure at Dam 3 was noted as a major difference from 2007; however as the surface water results from this dam in 2007 indicated low levels of contaminants, it is considered that there is unlikely to be a negative impact downslope of the dam.

Based on the findings of this assessment, Coffey considers that the site is suitable for the proposed commercial development, provided the following additional works are undertaken prior to development:

- The ACM observed around the former building area is removed by “emu-picking”. An AS1 or AS2 licensed removal contractor (licensed with NSW WorkCover) will be required to undertake this work. The work will need to be carried out in accordance with an asbestos removal plan (ARP); and
- The water and upslope/spillway soils in Dam 2 are sampled and analysed to confirm the presence of Total Petroleum Hydrocarbons (TPH), as recommended in the Stage 2 ESA report. Should TPH contamination be confirmed, the water would require treatment for disposal prior to development.

Coffey notes that the section of the southern wall of this dam which has eroded away should be re-stabilised to lessen the impact downgradient.


This letter must be read in accordance with the attached sheet entitled *“Important Information about your Coffey Environmental Report”*.

We trust that this letter meets with your requirements at this time. If you have any questions regarding this, please do not hesitate to contact the undersigned on (02) 4016 2300.

For and on behalf of Coffey Environments Australia Pty Ltd



Damien Hendrickx
Environmental Scientist



Laurie Fox
Principal Environmental Geologist

Attachments:

Important Information about your Coffey Report

Important information about Coffey Environmental Report

Uncertainties as to what lies below the ground on potentially contaminated sites can lead to remediation costs blow outs, reduction in the value of the land and to delays in the redevelopment of land. These uncertainties are an inherent part of dealing with land contamination. The following notes have been prepared by Coffey to help you interpret and understand the limitations of your report.

Your report has been written for a specific purpose

Your report has been developed on the basis of a specific purpose as understood by Coffey and applies only to the site or area investigated. For example, the purpose of your report may be:

- To assess the environmental effects of an on-going operation.
- To provide due diligence on behalf of a property vendor.
- To provide due diligence on behalf of a property purchaser.
- To provide information related to redevelopment of the site due to a proposed change in use, for example, industrial use to a residential use.
- To assess the existing baseline environmental, and sometimes geological and hydrological conditions or constraints of a site prior to an activity which may alter the sites environmental, geological or hydrological condition.

For each purpose, a specific approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible, quantify risks that both recognised and unrecognised contamination pose to the proposed activity. Such risks may be both financial (for example, clean up costs or limitations to the site use) and physical (for example, potential health risks to users of the site or the general public).

Scope of Investigations

The work was conducted, and the report has been prepared, in response to specific instructions from the client to whom this report is addressed, within practical time and budgetary constraints, and in reliance on certain data and information made available to Coffey. The analyses, evaluations, opinions and conclusions presented in this report are based on those instructions, requirements, data or information, and they could change if such instructions etc. are in fact inaccurate or incomplete.

Subsurface conditions can change Interpretation of factual data

Subsurface conditions are created by natural processes and the activity of man and may change with time. For example, groundwater levels can vary with time, fill may be placed on a site and pollutants may migrate with time. Because a report is based on conditions which existed at the time of the subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. Consult Coffey to be advised how time may have impacted on the project and/or on the property.

Interpretation of factual data

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Data derived from indirect field measurements and sometimes other reports on the site are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of Coffey through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other problems encountered on site.

Your report will only give preliminary recommendations

Your report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore your report recommendations can only be regarded as preliminary. Only Coffey, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes should be considered with redevelopment or on-going use of the site. If another party undertakes the implementation of the recommendations of this report there is a risk that the report will be misinterpreted and Coffey cannot be held responsible for such misinterpretation.

Your report is prepared for specific purposes and persons

To avoid misuse of the information contained in your report it is recommended that you confer with Coffey before passing your report on to another party who may not be familiar with the background and the purpose of the report. In particular, a due diligence report for a property vendor may not be suitable for satisfying the needs of a purchaser. Your report should not be applied for any purpose other than that originally specified at the time the report was issued.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, retain Coffey to work with other professionals who are affected by the report. Have Coffey explain the report implications to professionals affected by them and then review plans and specifications produced to see how they have incorporated the report findings.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists, engineers or geologists based on their interpretation of field logs

(assembled by field personnel), field testing and laboratory evaluation of field samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Contact Coffey for additional assistance

Coffey is familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to land development and land use. It is common that not all approaches will be necessarily dealt with in your environmental site assessment report due to concepts proposed at that time. As a project progresses through planning and design toward construction and/or maintenance, speak with Coffey to develop alternative approaches to problems that may be of genuine benefit both in time and cost.

Responsibility

Environmental reporting relies on interpretation of factual information based on judgement and opinion and has a level of uncertainty attached to it, which is far less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. To help prevent this problem, a number of clauses have been developed for use in contracts, reports and other documents. Responsibility clauses do not transfer appropriate liabilities from Coffey to other parties but are included to identify where Coffey's responsibilities begin and end. Their use is intended to help all parties involved to recognise their individual responsibilities. Read all documents from Coffey closely and do not hesitate to ask any questions you may have.