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Attention: David Ruston

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Project 85917.01
12 April 2017
85917.01.R.001.Rev0
DW:mm

Dear Sirs

Review of Contamination Reports for
Bringelly Road Business Hub
Bringelly Road, Horningsea Park

1. Introduction

Commercial & Industrial Property Pty Ltd (CIP) commissioned Douglas Partners Pty Ltd (DP) to undertake a review of contamination reports associated with the proposed Bringelly Road Business Hub, Horningsea Park for due diligence purposes. This letter summarises the findings of the review and presents any recommendations from the review. It is understood that the site to be acquired by CIP is that shown by the thick dashed line on the attached Concept Masterplan drawing.

The following reports were provided for review:

- Coffey Environments Australia Pty ltd, *Western Sydney Parklands Trust, Bringelly Business Hub, Phase 1 Environmental Site Assessment Report*, 15 September 2014 (reference GEOTLCOV25068AA – AF) [Coffey, 2014]; and
- Zoic Environmental Pty Ltd, *Phase 2 Environmental Site Assessment, Bringelly Park Business Hub, Leppington NSW 2179*, May 2016 (reference 16004) [Zoic, 2016].

A review of geotechnical information is reported separately (Project 85917.01).

2. Coffey, 2014

It is noted that the site investigated by Coffey includes the subject acquisition site but also includes adjacent land extending (up to approximately 35 m) to the south. Coffey, 2014 included the findings of a desktop review of site history, geology and hydrogeology; a site walkover; a limited survey of potential hazardous materials on external structures, waste stockpiles and on exposed soil; and sampling and analysis of groundwater from two groundwater monitoring wells.

The site walkover (on 26 May 2014) of the mostly vacant land revealed four residential buildings; a large rectangular corrugated metal shed (possibly horse stables); an underground septic tank; four

small dams (within the subject acquisition site); stressed vegetation at the west; and surface waste materials (e.g. PVC piping, metal piping, household waste, gas bottles, etc.).

The limited hazardous materials survey revealed the presence of asbestos materials and lead paint on existing buildings. Fibre cement (asbestos) sheeting fragments were observed in an area external to the house at 90 Bringelly Road. The full extent of the fragments was not known due to long grass.

The site history study by Coffey included a review of selected historical aerial photographs; historical land titles; contaminated land records and environmental protection licence information held by NSW EPA. It was summarised that the site had been used for farming purposes before 1959 to 2000, while parts of the surrounding area land use changed from farmland to residential and light industrial generally after 1994. Some buildings on site had been demolished in the 1990's and fill materials of unknown origin may have been placed on the site, particularly in areas where development had occurred. Small volumes of chemicals may have been present (although not observed) in workshops. DP notes that the 1961 and 1970 aerial photograph indicates that parts of the site were used for market gardens although this was not specially stated by Coffey.

The potential contaminating activities listed by Coffey were pest and weed control (possible use of pesticides and herbicides), uncontrolled fill (from unknown origin), dumped surface waste materials, hazardous building materials (weathered materials or from uncontrolled demolition), and chemical usage in workshop areas. DP considers this to be a reasonable assessment of potential sources of contamination (when considering that pesticides and herbicides are the primary contaminants of concern associated with previous market gardens).

Groundwater samples were collected from two of four wells which were installed as part of geotechnical investigations (reported in Coffey, *Western Sydney Parklands Trust, Bringelly Road Business Hub, Geotechnical Investigation Report*, 10 September 2014, reference GEOTLCOV25068AA – AE). Concentrations of total recoverable hydrocarbons (TRH); benzene, toluene, ethylbezene and xylenes (BTEX); and polycyclic aromatic hydrocarbons (PAH) were below the laboratory's limit of reporting. Concentrations of metals were below the adopted groundwater investigation levels (GIL) except for cadmium and copper which had concentrations marginally above the GIL and were considered by Coffey to be representative of background concentrations. It is noted by DP that pesticides were not part of the laboratory analytical suite even though pesticides were listed as potential contaminants associated with the previous land use.

It was recommended by Coffey that:

- Confirmatory sampling and analysis of surface soils for pesticide and herbicide chemicals be undertaken in areas around building footprints and pasture areas;
- Characterisation of fill materials (if any) and potential surface soil and groundwater impacts if contaminated fill materials are identified, in areas of current and former site structures (including buildings and roads);
- Removal of debris and waste along the south western boundary and from within the site, following characterisation of these materials;

- Characterisation of surface soils for potential weathered hazardous building materials, particularly in and around former building footprints and current building and structure locations;
- Inspection of workshop or chemical storage areas, with regard to the potential for contamination of these areas through spillage or use of chemicals or fuels; and
- A formal hazardous materials survey to be undertaken and development of a management plan for buildings and structures that are to be demolished and removed from site.

In addition, it is recommended by Coffey that the septic tank should be appropriately decommissioned and dangerous goods, including gas bottles observed in the paddock should be appropriately disposed.

3. Zoic, 2016

It is noted that the site investigated by Zoic includes the subject acquisition site but also includes adjacent land extending (up to approximately 35 m) to the south. Zoic, 2016 included a desktop review of site information; a site walkover; soil sampling from 40 locations; laboratory analysis of soil samples; and an assessment of the laboratory results.

The site walkover (on 23 February 2016) revealed that all structures (houses, septic tank and sheds) had been demolished and removed. The footprints of these structures were identifiable by minor demolition waste and levelling of the soil. A suspect septic tank remained adjacent to Bringelly Road. The western portion of the site had been used for storage and laydown area and truck wash for the Bringelly Road upgrade construction works. Small quantities of dumped rubbish were noted on the western portion of the dam, including a fragment of fibre cement (suspected asbestos) and a car battery. It was noted that the majority of the site had thick vegetation which made detailed visual inspection of the ground surface difficult. Water in the four man-made dams did not contain oily or chemical sheens.

In addition to the potential sources of contamination identified in Coffey, 2014, Zoic listed areas of environmental concern (AEC) as the septic tank, areas of stressed vegetation and the dams (as a possible sink for contaminants).

Sample locations targeted building footprints; in the vicinity of the dams; areas used for storage of materials associated with the Bringelly Road upgrade works; the areas of stressed vegetation identified in Coffey, 2014; and areas of suspected septic tanks. Other sample locations were used to provide site coverage. It was noted by Zoic that the sampling density of 40 locations across 20.9 hectares does not meet the recommended number in NSW EPA, *Sampling Design Guidelines,* 1995; however, Zoic was confident that the sampling regime provided adequate characterisation of soil conditions. DP notes that it is unlikely that sampling targeted all historical structures which are shown in historical aerial photographs provided in Coffey, 2014. Zoic noted that no sampling was undertaken within the Bringelly Road corridor and no sampling was undertaken in the footprints of the four dams (due to thick vegetation and water-logged soils).

No significant filling was identified across the site, although some topsoil was assumed to be redistributed given the historic rural land use. Localised inclusions were noted in topsoil including blue metal, gravel, and small amounts of demolition waste (associated with former building structures). Natural silty clays and/or stiff clays were encountered at all sampling locations. From a review of the test pit forms, DP notes that ash was present in soil at eight sampling locations.

Site assessment criteria for chemical contaminants and asbestos included health based investigation and screening levels as well as management limits for a commercial/industrial land use from *National Environment Protection (Assessment of Site Contamination) Measure* 1999, amended 2013 (NEPM 2013). Ecological assessment criteria were not adopted, presumably because the proposed development comprised large commercial buildings surrounded by paved parking areas and access roads with minimal landscaping (although this was not stated by Zoic). Faecal coliform concentrations were compared to a criterion sourced from NSW EPA, *Environmental Guidelines: Use and Disposal of Biosolid Products,* 2000.

Concentrations of lead, mercury, nickel, arsenic, cadmium, chromium, copper and zinc in the 38 analysed soil samples were within site assessment criteria. Concentrations of BTEX were less than the laboratory's limit of reporting in the one analysed soil sample. Concentrations of TRH were within the site assessment criteria in the ten analysed soil samples. Concentrations of PAH in the nine analysed soil samples were low and within the site assessment criteria, however, it is noted by DP that several soil samples containing ash were not subject to analysis for PAH which is a contaminant of concern associated with ash. Concentrations of organochlorine pesticides (OCP) were within the site assessment criteria in the 27 analysed soil samples. It is noted that one sample had detectable PAH and one sample had detectable OCP (at low concentrations).

Although asbestos was not detected in 16 analysed soil samples, one fragment of fibre cement from near the dam at the eastern part of the site was identified to contain asbestos.

Concentrations of faecal coliforms were within the site assessment criterion for the three analysed soil samples.

It was concluded by Zoic that there was no gross contamination identified and the site is suitable for the proposed business hub development, however, the following recommendations were made:

- Localised dumped debris identified around one of the dams must be removed and appropriately disposed; and
- Due to thick grass, and pasture vegetation covering large areas of the site, there is the potential for localised surficial rubbish or staining to be uncovered during vegetation removal process. It is recommended that an Unexpected Finds Protocol be prepared by a suitably qualified environmental consultant for site preparation and construction works.

4. Comments and Recommendations

The letter from NSW Department of Planning and Environment dated 12 May 2016 (reference 16/06551), notes that, based on a review of Zoic, 2016, Deferred Commencement Conditions (A1 to

A4) of SSD 6324 have been satisfied and that the Development Consent SSD 6324 for the Bringelly Road Business hub is now operational. It was advised that the recommendations provided in Zoic, 2016 shall be complied with in full, including preparation of an Unexpected Finds Protocol during site preparation and construction works, and the removal and disposal of localised dumped debris.

From a review of the Coffey, 2014 and Zoic, 2016, DP notes the following:

- It is unlikely that all areas of previous structures at the site (observed in historical aerial photographs) were subject to sampling by Zoic. It is reasonably likely that the footprint of some of these previous structures has been covered by thick vegetation;
- Sediment in dams has not been subject to sampling and analysis;
- Several soil samples observed to contain ash were not subject to analysis for PAH (a potential contaminant associated with ash). The possible source of the ash was not stated in Zoic, 2016. DP notes that the possible source of the ash could be historical bush/grass fires or from controlled burns by farmers; and
- Ecological assessment criteria were not adopted by Zoic (presumably because the proposed development included minimal landscaping and, therefore, minimal ecological values). DP note that the recorded concentrations of zinc, copper, chromium, nickel, lead, arsenic, DDT and naphthalene, TRH, BTEX and benzo(a)pyrene in soil were at levels which are unlikely to pose an ecological risk for an industrial/commercial site.

Given the non-sensitive nature of the proposed land use and the general absence of contaminants and contaminating sources, it is considered by DP that further investigations for contamination are not warranted. Having noted this, however, the Unexpected Finds Protocol is considered to be of importance as there is a reasonable likelihood that fragments of asbestos containing materials (ACM) are present on the ground surface but are hidden by vegetation in areas of previous structures and/or dumped waste. The Unexpected Finds Protocol should, therefore emphasise the need for inspections to be conducted by an environmental consultant or occupational hygienist in areas where suspected ACM, significant building rubble, or other signs of contamination are uncovered following stripping of vegetation.

With regards to the possible off-site disposal of soils, it is possible that the upper layer of natural soils may have detectable concentrations of OCP (due to previous pesticide usage) or PAH (due to the presence of ash) and, therefore, these soils would not be classified as Virgin Excavated Natural Materials (VENM). Based on the analytical results presented in Zoic, 2016, the extent of any such natural soil with detectable OCP or PAH is likely to be minimal. Concentrations of chemical contaminants indicate filling soils are likely to meet the criteria for General Solid Waste under the NSW EPA, *Waste Classification Guidelines*, 2014.

5. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for the proposed Bringelly Road Business Hub, Horningsea Park, in accordance with DP's email proposal dated 4 April 2017 and acceptance

received from Mr David Ruston of Commercial & Industrial Property Pty Ltd (CIP) dated 4 April 2017. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of CIP for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

DP's advice is based on the information presented by other consultants. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling locations (which were sampled by other consultants).

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk.

Please contact the undersigned if you have any questions on this matter.

Yours faithfully
Douglas Partners Pty Ltd

David Walker
Environmental Engineer / Associate

Reviewed by

Paul Gorman
Principal

Attachments: Concept Master Plan Drawing
Notes About This Report

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REVISIONS

A	PRELIMINARY	13.02.17
B	AMENDED APZ ZONE	13.02.17
C	AMENDED CUL-DE-SAC AND ROAD AREA	14.02.17
D	AMENDED CUL-DE-SAC LOCATION	16.02.17
E	AMENDED AREA INCULSIONS	20.02.17

LOT AREAS

LOT 1	13,467 sqm
INCLUDING FUTURE RIGHT OF CARRIAGE WAY	
LOT 3	51,355 sqm
LOT 4	55,256 sqm
LOT 6	23,154 sqm
LOT 8	27,285 sqm
INCLUDING LOT 8a 25,283 sqm & LOT 8b 2,002 sqm	
TOTAL LOT AREA	170,517 sqm
INTERNAL ROAD AREA	19,280 sqm
SITE AREA	189,797 sqm

DRAINAGE BASIN BEDWELL PARK

LOT 1
1.346 ha

LOT 3
5.135 ha

LOT 4
5.525 ha

LOT 6
2.315 ha

LOT 8a
2.528 ha

LOT 8b
0.2002 ha

FUTURE RIGHT OF CARRIAGE WAY

LANDSCAPE SETBACK 5.0m
BUILDING SETBACK 5.0m

APZ/ASSET PROTECTION ZONE 10.0m

APZ/ASSET PROTECTION ZONE 15.0m

BUILDING SETBACK 10.0m
LANDSCAPE SETBACK 5.0m

600mm WATER MAIN
550mm GAS MAIN

NEW GAS PRESSURE REDUCTION SUBSTATION

EXISTING SKYLINE CRESCENT ALIGNMENT

RW

RL 71.86
RL 67.94
RL 72.93
RL 67.50
RL 61.72
RL 57.95
RL 60.43

71.00
72.00
73.00
74.00
81.00
66.00
67.00
68.00
61.00
57.00

4.22m
4.85m
3.20m
1.60m
3.10m
5.40m
3.70m
1.26m
3.00m

Charter Hall

9am 3pm

SYDNEY

CIP DEVELOPING RELATIONSHIPS BUILDING SUCCESS

PROJECT

BRINGELLY ROAD
BUSINESS HUB,
NSW

DRAWING TITLE
CONCEPT MASTERPLAN

0 25 50 75 100 125m

SCALE: 1 : 2500 @ A3

CREATE DATE : 13.02.2017
LAST SAVED BY: agarrick

PLOT DATE : 13.08.2014

277062- MP04 -002 E

FILE LOCATION: J:\Arch\Estates\NSW\277062 Bringelly Road, Leppington\Masterplan\277062- MP04

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.