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21284 L01 Final Peer Review 1Feb2022

1 February 2022

My Robin Roy
Assistant Project Director
School Infrastructure NSW (SINSW)

Via email: robin.roy@det.edu.au

Dear Robin,

Re: Draft Peer Review of Environmental Reports for Proposed Primary and Secondary School, Lot 30 in DP1237735, Elara Boulevard, Marsden Park

1 Introduction

Geosyntec Consultants Pty Ltd (Geosyntec) was engaged by School Infrastructure New South Wales (SINSW), to conduct a Peer Review of contaminated land reports prepared for the property located at Lot 30 in DP1237735, Elara Boulevard, Marsden Park, NSW (herein referred to as the Site).

The Site is a vacant block of land that occupies 6 hectares (ha). The proposed development includes the new Melonba Primary School (2ha in the southern portion) and the new Marsden Park High School (4ha in the northern portion).

The Site was historically used for cattle grazing and has been recently regraded as part of bulk earthworks for the Elara residential estate using natural soils from the site and immediately adjacent area.

SINSW requires the independent peer review of available documents related to site conditions (related to contamination) including a Site Audit Statement (SAS) (Coffey) issued in 2018. Since the issue of the SAS (Coffey, 2018) additional environmental reports have been prepared, including a Douglas Partners (2021) Preliminary Site Investigation (PSI).

2 Peer Review Objectives and Scope of Work

The objective of the Peer Review is to form an opinion on whether the site characterisation works conducted meet the current NSW EPA guidelines related to contaminated land assessment and remediation, and whether the conclusions drawn in the SAS (Coffey, 2018) remain valid.

Geosyntec's scope of work included:

- Detailed appraisal of available documentation.
- A Site inspection to observe current site condition and surrounding land.
- Preparation of a letter report detailing the findings and any recommendations arising from the Peer Review.

The scope of work does not comprise a Site Audit as defined by CLM Act 1997. No opinion will be formed regarding compliance to any development consent conditions.

3 Documents Reviewed

The following documents were provided for review:

- Draft master plan future Marsden Park High School.
- Coffey Services Australia Pty Limited (Coffey) (20 September 2018) Site Audit Statement (SAS), reference NSW036-0804.
- Coffey (20 September 2018), Site Audit (SAR) of Proposed Education Establishment Site, Elara Boulevard, Marsden Park, reference SYDEN219628-R01. This report included a detailed appraisal of Geotechnique (2012) preliminary investigation, and the DLA (2015) Detailed Site Investigation conducted across the greater Woorong Park which incorporated the current Site.
- Geotechnique Pty Ltd (30 October 2019) Contamination Assessment Report, Newpark Proposed School Site, Lot 30 in DP1237735, Corner Elara Boulevard & Kaluta Avenue, Marsden Park, reference 14513/2-AA.
- Geotechnique Pty Ltd (27 November 2020) Newpark Proposed School Site Lot 30 in DP1237735 - Corner Elara Boulevard & Kaluta Avenue, Marsden Park Contamination Assessment Report Update, reference 14513/3-AA.
- Douglas Partners (16 February 2021) Preliminary Site (Contamination) Investigation Marsden Park Secondary School.

4 Summary of Site Audit Statement and Report (2018)

The Coffey Site Audit (2018) reviewed the DLA Environmental (DLA) Detailed Site Investigation (DSI) prepared for the 'Woorong Park' development area, which covered an area of 472 ha.

DLA concluded that "…Woorong Park, is considered suitable for the intended land use consistent with NEPM 2013 Residential A – Residential with Garden / Accessible soil, with the exception of the three identified areas, these areas of the site can be made suitable through the removal of the fill materials and subsequent asbestos clearance / validation report".

A parcel of land, defined by a survey plan and occupying 6ha, on the eastern side of Woorong Park is proposed for future use as an educational establishment. The purpose of the Site Audit (Coffey 2018) was to provide a Site Audit Statement (SAS) regarding the suitability of the site for future educational use.

The current area of interest (Lot 30 in DP1237735) adjoins the western side of the Stockland Elara development, located within Blacktown City Council area.

The site is zoned R2, low density residential, as indicated on Land Zoning Map LZN_002 for North West Growth Centre in SEPP (Sydney Regional Growth Centres) 2006. Zone R2 allows the following:

- To support the well-being of the community, by enabling educational, recreational, community, religious and other activities where compatible with the amenity of a low density residential environment.

The following summary of the Coffey (2018) Site Audit Report is provided:

4.1 Site Identification

The 6ha Site is located within the Stockland Elara development. The Site was part of former Lot 10 in DP 1178982 and former Lot 7 in DP 1078187, and is now identified as Lot 30 in DP1237735.

4.2 Site History

A review of aerial photographs between 1947 and 2004 indicated that the site (and the greater Woorong Park) was initially bushland which was cleared to create grassland in the early 1950s. Regrowth of trees occurred during the 1970s, but the site was cleared again to create grazing land in the 1980s.

Google Earth imagery confirmed that the Site continued as open grassland between 2004 and 2016 after which earthworks commenced for the current residential estate redevelopment.

Searches of public registers and WorkCover NSW Dangerous Goods records, as reported by Geotechnique (2012), indicated no suspected or potential sources of land contamination or potentially contaminating uses of the land.

4.3 Site Condition and Surrounding Environment

Prior to the commencement of bulk earthworks, the Site and surrounding land (Woorong Park) was open grassland with scattered mature trees.

Geotechnique (2012) identified no potential sources of contamination or potentially contaminating activities other than one confirmed and one suspected fill area, approximately 500m northeast of the Site and on the western side of the neighbouring water course, respectively.

DLA (2015) investigated these areas and confirmed the presence of fill impacted by asbestos containing materials (ACM). DLA (2015) identified no other contamination following a systematic contamination assessment across the 472 ha Woorong Park.

Bulk earthworks occurred across the Site between March and August 2017. In late June 2018 a temporary hardstand compound area, approximately 80m by 60m, was constructed in the north east corner of the Site. The hardstand was created with imported commercially sourced road base gravel. The purpose of this hardstand was for the placement of temporary construction offices and staff amenities to support the surrounding development activities. Reportedly no buried services or storage of fuel / machinery maintenance occurred in this compound.

The Coffey Site Auditor inspected the site on 26 June 2018 after earthworks were completed and shortly after the hardstand area had been constructed.

4.4 Geology and Hydrogeology

The Geological Survey of NSW 1:100,000 Sydney Geological Map (Sheet 9130) shows that the Site is on the tertiary Londonderry clay formation which is likely to be underlain by Rickaby's Creek gravel. The soil landscape at the site is the Berkshire Park alluvium.

DLA (2015) reported that natural soils comprised silty sand and sandy / silty clay. Some gravely sands and large cobbles were present at the surface and within the shallow subsurface soils in the western part of their investigation area.

DLA (2015) reported no registered groundwater bores within 500m of the Site. DLA installed three groundwater monitoring wells within Woorong Park however, none were installed within 100m of the Site.

DLA (2015) reported groundwater inflow during drilling at depths between 6m and 8m below the surface and that standing water levels were between 1.1m and 4.7m below the surface. DLA inferred that the groundwater was present in a confined aquifer because standing water levels rose due to “hydrological pressure”.

DLA (2015) reported that the NSW Natural Resources Atlas indicated no known occurrences of Acid Sulphate Soils in the vicinity of the development area.

DLA (2015) reports an assessment of soil salinity and aggressivity which was related to natural qualities of the soil and not to potential contamination.

4.5 Potential for Migration of Contamination

Existing conditions on and around the Site indicated no potential contamination. Groundwater sampled up-gradient of the Site had no indicators of chemical contamination and was neutral but saline. The Site is on one side of a local topographic high so that the site includes no marshy areas or natural drainage streams. No odours were reported during the DLA (2015) investigation.

Given these conditions, the Coffey Site Auditor (2018) considered that off-site migration of contamination is not a potential issue because of the absence of contamination on the site, and that potential impact on the site from an offsite source of contamination is also not an issue because no contamination was identified.

4.6 Coffey Auditor’s Comment on Adequacy of Consultant’s Work

As the Site was in an area which had no previous development other than clearing of forest to establish grassland, and existing conditions on and around the site indicated no potential contamination, the Auditor considered that DLA’s work to be adequate.

The Auditor considered that potential for unacceptable aesthetic issues on the Site to be negligible, but that moderate salinity of the silty clay subsoil may require selection of landscaping plants with appropriate salt tolerance.

During the bulk earthwork, topsoil at the Site was placed in stockpiles, which were reused to provide a surface layer across the Site to complete the design surface levels. This topsoil was assessed by DLA and found to be suitable for future use consistent with low density residential dwellings with gardens and access to soil.

Given that the site in its condition in July 2018 consisted of an altered landform derived from soil materials from site and within close proximity to the site, the Auditor concluded that bulk earthworks had no adverse material effect on the contamination status of the site.

The establishment of a construction compound in the northeast corner of the site adds a potential aesthetic concern which is considered manageable during future construction on the Site.

The Audit (2018) concluded that:

- None of the areas noted in DLA’s assessment as requiring removal of fill material was located within 100m of the boundary of the proposed school Site.
- Investigation of historical activities and other possible sources of contamination on the Site was considered adequate.
- Environmental quality criteria used for the assessment were appropriate for future educational uses.
- Groundwater contamination was not an issue beneath nor up-gradient of the site.

- Results of the DSI from samples collected within 100m of the site boundary were consistent with natural conditions and indicated an absence of contamination on the Site.
- Bulk earthworks did not adversely affect the suitability of the Site for future use as an educational establishment.
- DGB20 material imported to the northeast corner of the site did not affect the suitability of the site for future use as an educational establishment.

The Site Audit concluded that the Site is suitable for future use as an education establishment, provided that no environment incident, such as fuel, oil or chemical release or application of waste, occurs to adversely affect the environmental quality of the site as observed by the Auditor (Coffey) on 26 June 2018.

5 Review of Information since issue of the Site Audit (Coffey 2018)

Table 1 provides a summary of documents prepared since the issuance of the Coffey (2018) SAS and SAR. Peer review comments are included on the adequacy of information provided to support Peer Review conclusions.

Table 1: Summary of Information Review Post Coffey (2018) SAS/SAR

Document	Summary of Information	Geosyntec Comment
Geotechnique Contamination Assessment Report Newpark Proposed School Site Lot 30 in DP1237735 Ref (14513/2-AA) 30 October 2019	The objectives of the assessment were to identify any areas of potential contamination and to assess if the site potentially presents a risk to human health and the environment under the conditions of the proposed use (future school site). The scope of the assessment included: • site reconnaissance • review of site history information including aerial photographs from 1947 to 2019 • review of geological maps, and NSW EPA records and registers • test pit excavation at eight (8) locations in the former compound area, and seventy three (73) locations across the remainder of the grassed Site. • collection of soil sampling for analytical testing for a selection of heavy metals, OCP, TRH, BTEX, PAH, OCP, PCB and asbestos and phenols in fill. The results of the assessment found: • topsoil 0 – 0.2m • fill 0.2m – 2.7m. the site was identified to contain 6 representative types of 'fill' materials. Types 1, 2, and 6 show indications they may have been imported to site, while 3, 4 and 5 appear to be reworked natural material. • Natural – silty clay materials underlain fill across the site. No fibro-cement pieces were observed. No odour or discolouration of soil samples were identified. Groundwater or perched water was not encountered in test pits excavated to maximum depth of 2.9mbgl. Analytical results for the soil samples were below the adopted assessment criteria, or below the laboratory LOR. The Site was considered unlikely to present a risk to human health and/or environment, and was	The Geotechnique assessment was completed for the entire Lot 30 DP1237735 (being 6ha). At the time of the assessment the site was vacant. A portion of the site (north eastern) was previously used for the works compound. This area was covered with crushed sandstone, with the remainder of the site grassed. The assessment by Geotechnique was completed in accordance with the requirements of the NSW EPA guidelines for contaminated site assessment. Test pitting was completed across the site to confirm the nature of soil / fill material profile following the bulk earthworks completed at the site. The assessment additionally focused on the crushed sandstone platform in the north eastern corner of the site, formerly constructed as a site office / site compound. The conclusions drawn in this assessment are valid, and it is agreed that any material imported to the site must be VENM / ENM, for the site to retain its conclusion as suitable for the proposed educational development. In addition, any material removed from the site should be in accordance with NSW EPA 2014 waste classification guidelines.

Document	Summary of Information	Geosyntec Comment
	considered suitable for the proposed school use including childcare, park, recreational open space or playing field. An Unexpected Finds (UF) Management Protocol (included in the Geotechnique report) should be implemented. In the event the UF is contamination is encountered, detailed assessment, remediation and validation will be necessary. Any material to be excavated and removed from the site, should be classified in accordance with the NSW EPA 2014 waste guidelines. Any materials imported to the site must be assessed by a qualified environmental consultant, prior to importation, and meet VENM or excavated natural material (ENM) classification.	
Geotechnique Contamination Assessment Report Update Newpark Proposed School Site Lot 30 in DP1237735 Ref (14513/3-AA) 27 November 2020	Geotechnique prepared a letter in 2020 to confirm that the recommendations from the 2019 report remained valid, as the site was to be dedicated to the Department of Planning as a future school site (Newpark school site). Since the 2019 assessment, Geotechnique reported that a sewer line had been installed in the south western portion of the site, with soil disturbance from this installation visible in recent aerial imagery (October 2020). It was concluded that the installation of the sewer line does not raise any environmental concern, and that the site remained suitable for the proposed school or other relevant uses, including long day care centre, recreational open space or playing field.	No information on the materials used to construct the sewer line in the south western portion of the site are available. It is understood that this portion of the site falls outside of the proposed secondary school development site, and within the primary school development area. Management of any materials excavated from this area should be completed in accordance with the site Unexpected Finds Protocol. During the site inspection (by Geosyntec) the enire property was fenced, and the area of sewer installation appeared to be outside or adjoining the site boundary. The fencing went around the sewer manholes (see photo). The surface did not indicate contaminated fill.
Douglas Partners Preliminary Site (Contamination) Investigation Marsden Park Secondary School Elara Boulevard, Marsden Park Ref (94617.00) February 2021	Douglas Partners (DP) prepared a PSI for the site which included the review the existing contamination reports by Geotechnique and Site Audit Statement by Coffey, and further assess the potential for contamination at the site based on past and present land uses and comment on the need for further investigation and/or management with regard to the proposed school development. It is understood that the development will comprise several one and two storey buildings with associated pavements, recreational facilities, landscaping and associated earthworks. Based on the review of site history, a site walkover and review of a previous contamination report and SAS, DP considers that there is a low potential for significant contamination given the past site activities and the existing site conditions. The results of the previous contamination assessment indicated that soil samples tested were below the relevant adopted site assessment criteria for health and ecological screening and investigation levels. Based on the above, it is considered that the site is suitable (from a contamination perspective) for the proposed development. However, it is recommended that an unexpected finds protocol be adopted during the redevelopment.	Review of the DP PSI confirms that this assessment was completed in general accordance with the requirements of the NSW EPA guidelines for contaminated site assessment. The conclusions drawn in this assessment are valid, and it is agreed that an Unexpected Finds Protocol should be developed for the site to manage future earthworks during the redevelopment of the site.

Document	Summary of Information	Geosyntec Comment
Douglas Partners Preliminary Geotechnical Investigation Marsden Park Secondary School Elara Boulevard, Marsden Park Ref (94617.00) February 2021	Douglas Partners completed a preliminary geotechnical investigation to assess the subsurface soil and groundwater conditions across the site to provide information for initial planning and design purposes. The investigation included the excavation of test pits, dynamic cone penetrometer (DCP) tests, cone penetration tests (CPT) and laboratory testing of selected samples. The details of the field work are presented in this report, together with comments and recommendations for design and construction. The subsurface conditions encountered underlying the site were summarised as follows: Topsoil: 0.05-0.2m Fill: 0.2–2.0m Natural Soils: 0.8-9.5m Weathered Rock: 7.2-9.5m DP state that it is expected that a maximum of 1m of cut and fill will be required for the development given the existing topography. Minor amount of material is expected to be imported to site.	No comment is made on the adequacy of the geotechnical works completed, as this is outside of the scope of this peer review. DP require that all excavated materials disposed of off-site will need to be classified in accordance with the provisions of the current legislation and guidelines including the Waste Classification Guidelines (EPA, 2014). This includes topsoil, fill and natural materials that may be removed from the site.

6 Geosyntec's Opinion

In 2018, Coffey issued a Site Audit Statement (SAS) concluding that the 6 ha Site, now identified as Lot 30 in DP1237735, was suitable for a future educational establishment. Since the issue of the SAS, additional environment assessments have been completed to confirm current site conditions.

Based on review of the recent assessments (Geotechnique 2019 and 2020, and Douglas Partners 2021), it is considered that the additional site characterisation works generally met the requirements of NSW EPA guidelines related to contaminated land assessment, and the Site remains suitable for the proposed development as an educational establishment.

Rebeka Hall of Geosyntec attended site on 9 December 2021 and observed that site conditions were consistent with those reported in the Geotechnique 2020 and DP 2021 reports. The following features were observed as shown in the attached photos:

- The entire vacant site is fenced, fully secured with security cameras installed. All fencing was of good integrity.
- The site was fully grassed, however following a recent heavy rain event, the ground surface was waterlogged. The Site appeared to be levelled. There was evidence of past test pits (assumed to be those by Geotechnique 2020)
- There was evidence of fly tipped waste onsite, at the main entrance off Galah Street (Photo 1). The material appeared to be inert material, general rubbish.
- There was evidence of household rubbish dumped along Cordrush Street (but not within the fenced Site boundary)
- The installation of the sewer line along Galah Street was observed (Photo 2)
- The former site compound area (in the north eastern corner of site) was fully grassed over, with evidence of crushed sandstone (Photo 3)

Based on the scope of works conducted, Geosyntec concludes the following:

1. The conclusions drawn in the SAS (2018) prepared by Coffey remain relevant, and the site is considered suitable for the proposed redevelopment as an educational establishment. The supplementary investigations conducted between 2019 and 2020 confirm site conditions are suitable for the intended use. This is also supported by Geosyntec's appraisal of current Site conditions.
2. Any material imported to the Site should meet VENM / ENM classification.
3. Any material removed from the Site must be classified in accordance with the NSW EPA 2014 waste classification guidelines.
4. An Unexpected Finds Protocol should be prepared and implemented during redevelopment works in the unlikely event contamination is identified.
5. The site must continue to be secured to prevent fly tipping.

Should you have any queries or wish to discuss any points, please do not hesitate to contact the undersigned.

Yours sincerely,

Rebeka Hall
Senior Principal
Geosyntec Consultants
CEnvP - SC40913

Diana Turner
Senior Environment Scientist
Geosyntec Consultants

Attachment - Photolog

Photo Number: 1	Date: 9 Dec 21	
Description: Fly tipped waste onsite, at the main entrance off Galah Street		

Photo Number: 2	Date: 9 Dec 21	
Description: Newly constructed sewer line along Galah Street		

Photo Number: 3	Date: 9 Dec 21	
Description: Former site compound area was fully grassed over (north eastern corner of Site, corner Elara Blvd and Kaluta Ave		