



25 June 2020

Reference: E29775PLlet

Macquarie University Property
Building Y6A
MACQUARIE UNIVERSITY NSW 2109

Attention: Cameron Kline
Email: cameron.kline@mq.edu.au

**ADDENDUM TO STAGE 2 ENVIRONMENTAL SITE ASSESSMENT REPORT
PROPOSED NEW DEVELOPMENT
8-12 UNIVERSITY AVENUE, MACQUARIE UNIVERSITY, NSW**

JK Environments (JKE) were engaged by Macquarie University Property to prepare an addendum letter to the report issued previously by Environmental Investigation Services (EIS). EIS re-branded to JKE in mid-2019. This addendum is to be read in conjunction with the following reports:

- *'Report to Cadence Australia on Stage 2 Environmental Site Assessment for Proposed New Development at 8-12 University Avenue, Macquarie University, NSW'* (Ref: E29775Krpt-Final-rev3, dated 2 June 2017) (referred to herein as the Stage 2 ESA); and
- *'Report to Macquarie University Property on Remediation Action Plan (RAP) for Proposed New Development at 8-12 University Avenue, Macquarie University, NSW'* (Ref: E29775PLrpt-RAP DRAFT, dated 28 January 2020) (referred to herein as the Draft RAP).

Since preparation of the Stage 2 ESA, it is understood that a State Significant Development Application (SSDA) has been lodged and is currently under assessment. The Stage 2 ESA and Draft RAP have been reviewed by Melissa Porter of Senversa Pty Ltd in her capacity as a NSW EPA accredited site auditor. The purpose of this addendum letter is to document a response to the comments made by the site auditor in the letter *'Re: Proposed Site Remediation, Interim Audit Advice No.1 – 8-12 University Avenue, Macquarie Park, NSW'* (Ref: S17719_001_IAA_Rev0, dated 23 April 2020).

JKE note that, as requested by the Auditor, the audit comments for the Draft RAP will be addressed following the completion of the supplementary intrusive investigation via an updated RAP which will incorporate the findings of the supplementary investigation and be provided to the Auditor for review and further comment.

The audit comments for the Stage 2 ESA and responses are provided in the following table:

No.	Auditor Comment	JKE Response
1.	Section 2.4. Detail the site condition in the western portion of the site.	JKE have not inspected the site since 2016, therefore we are not aware of the current site conditions. At the time of the site inspection in 2016, the western portion of the site consisted of an open grassed lawn with concrete



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		footpaths along the western boundary and the asphaltic concrete car park to the south of the security building.
2.	Discuss the potential offsite impacts (if any) from surface water runoff to the nearest surface water receptor.	Site contamination that would be expected to pose a risk via runoff to nearby surface water receptors was not identified during the Stage 2 ESA. Surface runoff was assumed to have been mostly captured via stormwater drainage pits and culverts located across the site and along University Avenue along the southern boundary. The nearest surface water receptor was identified as University Creek approximately 50m south-east of the site. The potential for surface runoff to reach the creek without being captured in local stormwater infrastructure is considered to be low.
3.	Section 5.1. Table 5-1. Former buildings on the site listed here not mentioned in site history section, please update in Section 4.	The former buildings and structures have been mentioned in Table 4-1 (Summary of Historical Aerial Photographs) and further mentioned in Table 4-2 (Summary of Historical Land Uses). No update deemed necessary.
4.	Section 6.2. Table 6-2. Site area is noted here as 11,000m ² however in Section 2.1 Table 2-2 it is 20,000m ² , please clarify.	The site area was updated following several revisions of the initial report, as requested by the project manager, Cadence Australia. The original site area did not include the eastern-most portion of the car park and therefore this area has not been sampled. This was identified as a data gap and is to be addressed as part of the data gap assessment/supplementary investigation, following the demolition of the existing buildings and car park structures.
5.	Section 6.3. Table 6-3. Please confirm if new gloves were used for groundwater sampling.	JKE (formerly EIS) can confirm that disposable nitrile gloves were changed between sampling event for each groundwater well, in accordance with the Standard Sampling Procedure (SSP).
6.	Attach calibration records if available.	The calibration records for the PID are recorded in a log book and calibration certificates are not produced. For reference, a scanned copy of the log book for the PID calibration on the days of soil sampling are attached in Appendix A to this letter.
7.	Section 8.1. Table 8-1. Discuss groundwater flow direction.	Accurate surveying of the wells to confirm the groundwater flow direction was not undertaken during the Stage 2 ESA. However, from the RL's of the groundwater wells (BH2, BH3 and BH6) and the overall topography of the site, it is estimated the groundwater flows towards the south-east.
8.	VOCs were listed as a contaminant of concern however were not analysed, please close out.	The potential for VOCs was included as part of the presence of a French Polisher being listed as a land owner prior to 1965. However, following further review of the historical aerial photographs, we now note there was no indication that this land use occurred on the site (i.e. the



No.	Auditor Comment	JKE Response
		aerial photographs from this period indicated the site was a market garden/orchard), and was more likely just the proprietor's listed profession. This information and justification is outlined in Table 4-2 of the Stage ESA report. Therefore, the inclusion of VOCs as a contaminant of concern in the CSM is considered to be an oversight during reporting and has not been considered during laboratory analysis.
9.	Well construction details have not been included on the logs, please update.	The well constructions details are located at the bottom of the 'remarks/description' column on the right-hand side of borehole logs BH2, BH3 and BH6.
10.	Please confirm within the Stage 2 ESA that the activities listed in Appendix B of the NEMP 2018 have not been undertaken at the site.	From the NEMP 2.0 (January 2020), agricultural use and an electricity substation use occurred/occurs on site and these are listed as activities potentially associated with PFAS contamination. Further discussion on each of these activities is provided below: 1) <u>Agricultural Use (fertilizers and pesticides)</u> Research has been conducted to suggest that the use of PFAS in agriculture is generally associated with accumulation of PFAS in biosolids used as fertilizer (resource ref: '<i>Biosolids in Australian Horticulture – an Untapped Resource?</i>', Acta Horticulture, January 2014). This publication can be found at: https://www.researchgate.net/publication/284707790 The use of biosolids in agriculture more widely occurs in the cropping, cattle grazing and fodder industries, and currently has very limited uses in horticulture and food production. The site history indicated the site has historically been used for food production associated with orchards and market gardens, as shown in the presence of planting/ploughing furrows and visible rows of orchard-type planting on the historical aerial photographs. PFAS can also be associated with pesticide use (PFAS compounds were sometimes added to pesticide mixtures as an adjuvant). Although the breakdown of pesticides would generally occur faster than PFAS, pesticide concentrations in soil at the site were low and were not of concern at the site. Therefore, it is considered unlikely that the site would be a point source of PFAS contamination based solely on the historical agricultural land use and the possible use of pesticides. 2) <u>Electricity, Electrical Substation (oil-containing equipment such as transformers)</u> PFAS associated with the substation area will be considered in further detail as part of the supplementary



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		investigation proposed in the draft RAP. We envision that potential impacts from oils will be initially evaluated via the TRH analysis and PFAS would only be considered further in the event that oil leaks or spills are evident.

In light of the requirements of Schedule B2 of the NEPM (2013) and the recent updates to the NSW EPA Consultants Reporting on Contaminated Land, Contaminated Land Guidelines (2020), a detailed Sampling, Analysis and Quality Plan (SAQP) is to be provided prior to the commencement of the Supplementary Intrusive Investigation as specified in Section 4 of the Draft RAP. The SAQP is to be provided to the Auditor for review and comment prior to commencement of the supplementary investigation.

The responses presented in this letter are based on site conditions that existed at the time of the assessment. The conclusions are based on the investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances. JKE have had no further involvement in the project since delivery of the draft RAP and have not inspected the site since delivering the Stage 2 ESA report.

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Please contact the undersigned if you have any questions.

Kind Regards

Harry Leonard
Senior Environmental Scientist

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Appendix A: PID Calibration Log

Date	Who	PID Unit	Value
30/9/16	KRT	①	100
4/10/16	JOC	Green	100
6/10/16	MO	①	100
7/10/16	JOC	Green	102
10/10/16	HL	①	99.5
13/12/16	JOC	Green	105
18/10/16	HL	①	99-100
19/10/16	KT	①	100
21/10/16	SOC	Green	99
25/10/16	KT ①	①	100
26/10/16	KT	①	100
31/10/16	KT	①	101
2/11/2016	SOC	Green	101
8/11/2016	JOC	1	99
11/11/16	TH	Green	100
14/11/16	JOC	Green	100
15/11/16	HL	①	99-100
22/11/16	KT	①	100
5/12/2016	JOC	Green	101
9/12/2016	HL	①	100
15/12/2016	HL	①	100
20/12/16	MO	Green	100
21/12/16	KT	Green	100
22/12/16	TH	Green	100
23/12/16	BP	①	101
3/1/17	TH	Green	100.1
5/1/17	KT	①	100
10/1/17	PB	Green	100.1