

Moonee Parklands Trust
C/- JW Planning Pty Ltd



Preliminary Site Investigation: Lot 1 DP 1097743, Pacific Highway, Moonee Beach, NSW

P1002663JR11V01
July 2018

ENVIRONMENTAL



WATER



WASTEWATER



GEOTECHNICAL



CIVIL



PROJECT
MANAGEMENT



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1 Overview

1.1 Introduction

Martens & Associates Pty Ltd has prepared this preliminary site investigation (PSI) for Moonee Parklands Trust C/- JW Planning Pty Ltd for a proposed residential subdivision at Lot 1 DP 1097743, Pacific Hwy, Moonee Beach, NSW (the 'site').

A PSI was previously completed by MA as part of a proposed subdivision of Lot 6 DP252223 and Lot 1 DP1097743 in 2013 (MA, 2013). Information from the previous document has been amended and updated for the subject site only (i.e. Lot 1 DP1097743).

1.2 Objectives

Investigation objectives included:

- Identification of historic and current potentially contaminating site activities.
- Evaluation of potential areas of environmental concern (AEC) and contaminants of potential concern (COPC).
- Provide comment on suitability of site for future development use and provide recommendations for a detailed site investigation (DSI) including intrusive soil investigations if required.

1.3 Project Scope

Scope of works included:

- Walkover inspection of site to review current land use, potential contaminating activities and neighbouring land uses.
- Review of available Coffs Harbour City Council (CHCC) site development consents and notices.
- Review of 7 historic aerial photographs to assess past site and surrounding land use patterns.
- Review NSW OEH (formerly NSW EPA) notices under the Contaminated Land Management Act (1997).
- Preparation of a PSI report in general accordance with the relevant sections of ASC NEPM (2013), NSW OEH (2011) and NSW EPA (2017).

1.4 Abbreviations

AEC – Area of environmental concern

ASC NEPM – National Environmental Protection (Assessment of Site Contamination) Measure (2013).

BGL – Below ground level

CHCC – Coffs Harbour City Council

COPC – Contaminants of potential concern

DEC – NSW Department of Environment and Conservation

DP – Deposited Plan

DSI – Detailed Site Investigation

EPA – NSW Environmental Protection Authority

LGA – Local government area

MA – Martens & Associates Pty Ltd

mAHD – metres, Australian Height Datum

NSW DPI – NSW Department of Primary Industries

NSW EPA – NSW Environment Protection Authority

NSW OEH – NSW Office of Environment and Heritage

PSI – Preliminary site investigation

2 Site Description

2.1 Location and Setting

Site information is summarised in Table 1. A recent aerial photograph showing site location and general surrounds is provided in Figure 1, Attachment A.

Table 1: Site background information.

Item	Description / Detail
Site address/ area	Lot 1 DP 1097743 - Pacific Highway, Moonee Beach, NSW. Approximately 13 ha.
Local Government Area (LGA)	Coffs Harbour City Council (CHCC)
Current land use	Cleared lot with grass cover and scattered bushland.
Proposed land use	Low density residential (see Section 2.2 for more details)
Site description	The site has grass cover with dirt tracks running east west. Scattered bushland present throughout the site.
Surrounding land uses	The site is bordered by the Pacific Highway to the west, cleared lots with some bushland to the north and south, and Moonee Creek to the east.
Topography	The site is located in an area of gently to moderately undulating hills and flatter low-lying alluvial plains associated with Moonee Creek. Site elevation ranges between approximately 18 mAHD along the western boundary and 1 mAHD along the eastern boundary of the lot with slopes of less than 5%.
Expected geology	<p>The Coffs Harbour Area Coastal Quaternary Geology 1:100,000 Geological Sheet (NSW DPI, 2008) identifies the site as being on the boundary of Coramba Beds comprising mudstone, siltstone and greywacke with minor intervals of volcanic rock, and Quaternary alluvium comprising silt, clay, fluvial sand, marine sand and gravel.</p> <p>The NSW Environment and Heritage eSPADE website identifies the site as having soils identified as Newports Creek consisting of Holocene clayey and silty alluvium (generally < 1m total thickness) overlying Pleistocene mottled grey estuarine clays.</p>
Environmental Receptors	Site drainage typically occurs via overland flow, east towards Moonee Creek.
Sensitive receptors	Future site residents and visitors. Site workers during future subdivision works. Surrounding residential site occupants.

2.2 Proposed Development

The proposed development involves subdivision at the site which will result in the creation of:

- 103 residential lots, each with minimum lot size of 525 m².
- Regrading of the site, using existing site soils (i.e near-balanced cut and filling).
- Internal roads, services and stormwater infrastructure.

A proposed lot layout is provided in Attachment A.

2.3 Hydrogeology

Results of groundwater monitoring are summarised in Table 7 with respect to different areas of the site. Refer to Martens report P1002663JR09V01 (July, 2018) for further groundwater monitoring detail. Borehole locations are shown on the site plan (Attachment A).

Table 2: Summary of water level data observed during borehole drilling.

Groundwater Level	GMB							
	1 ²	2	3	4 ²	6	7 ²	8	13 ²
Minimum	0.697	2.111	2.766	2.456	3.904	0.696	4.116	-1.775 ¹
Mean	1.488	2.443	3.186	3.128	4.265	0.948	4.465	1.097
Maximum	3.380	2.695	3.396	3.668	4.640	1.275	5.011	1.680
Range	2.683	0.584	0.63	1.212	0.736	0.579	0.895	3.455
Minimum Depth to GW	0.202	0.022	-0.023	-0.047	2.268	-0.004	0.681	-0.069
Mean Depth to GW	2.094	0.274	0.187	0.493	2.643	0.323	1.227	0.514
Ground Level	3.582	2.717	3.373	3.621	6.908	1.271	5.692	1.611

Notes:

¹ Level occurred due to GMB being purged dry.

² GMB located on Lot 6 DP 252223 immediately to the south of the site.

3 Site History Investigation

3.1 Historical Site Records Review

The development application and building plan summary of records kept by CHCC are summarised in Table 3.

Table 3: Site history information.

Year	Record No.	Description	Decision
2006	937	25 lot subdivision	Current / no decision
2005	1858	108 lot subdivision	Withdrawn
2005	1349	2 lot subdivision ¹	Approved
2004	1334	Dual occupancy addition - detached	No decision / void
1999	1780	Dwelling entitlement	-
1990	58	160 units	Past deferred.

Notes:

¹ Creation of 2 lots being Lot 1 and Lot 2 DP 1097743 being previously Lot 7 DP252223

3.2 NSW EPA Records

No notices for the site or nearby surrounding areas were identified under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985). No site within the suburb of Moonee Beach was listed on the register or identified on the NSW EPA contaminated sites notification list.

3.3 Aerial Photograph Review

A review of historical aerial photography is summarised in Table 4 and aerial images are provided in Attachment B.

Table 4: Summary of aerial photography.

Year	Site	Surrounding Lands
1954	The site is entirely forested. No structures or intensive land use are seen on the site	Grazing land with scattered trees. Dam, rural dwelling and sheds on property to the southwest.
1964	Little to no change from previous	Little to no change from previous except for possible realignment of Pacific Highway.

Year	Site	Surrounding Lands
1974	The western portion of the site has been partially cleared.	Properties to the north, south and west have been extensively cleared. The current alignment of the highway has been constructed.
1989	Little change from previous image, with the exception of an access track through the centre of the site.	Little change from previous.
2000	Significant clearing of bushland across the majority of the site.	Little change from previous.
2008	Additional clearing of bush and construction of access track to the dwelling adjacent to the northeast of the site.	Residential dwelling constructed on the neighbouring property to the northeast.
2018	Little change from previous other than burnt areas in the north of the site.	Additional development on residential properties to the west.

3.4 Walkover Site Inspection

Past site inspection completed 28 July, 2010 noted several stockpiles of soil created from minor site earthworks such as formation of unsealed access tracks. No other evidence of potential contamination such as soil staining, unnatural odours or plant stress was observed on-site.

4 Conclusions and Recommendations

The results of the PSI indicate that the site has been primarily cleared (likely grazing) rural land since sometime before 2000. No development has taken place on the site. As the site walkover inspection was completed in 2010, it is recommended that an additional site walkover inspection is completed prior to construction. Subject to site inspection findings, the site is unlikely to pose a significant risk to future human and/or environmental receptors, and further site assessment (sampling and laboratory testing) is not considered necessary.

If excavated material is to be removed from the site as part of subdivision works, a formal waste classification assessment in accordance with NSW EPA Waste Classification Guidelines (2014) is required.

5 Limitation Statement

The PSI was undertaken in line with current industry standards. No site soil sampling has been undertaken and site walkover findings may be out of date.

It is important, however, to note that no PSI can be considered to be a complete and exhaustive characterisation of a site nor can it be guaranteed that any assessment shall identify and characterise all areas of potential contamination or all past potentially contaminating land-uses. Therefore, this report should not be read as a guarantee that no contamination shall be found on the site. Should material be exposed in future which appears to be contaminated, additional testing may be required to determine the implications for the site.

Martens & Associates Pty Ltd has undertaken this assessment for the purposes of the current development proposal. No reliance on this report should be made for any other investigation or proposal. Martens & Associates accepts no responsibility, and provides no guarantee regarding the characteristics of areas of the site not specifically studied in this investigation.

6 References

- NEPC (1999, amended 2013) *National Environmental Protection (Assessment of Site Contamination) Measure*. Referred to as ASC NEPM (2013).
- Martens and Associates (2013) *Stage 1 (Desktop Study) Land Contamination Assessment: Lot 1 DP 1097743 and Lot 6 DP 252223 Pacific Hwy, Moonee Beach, NSW*. Ref. P1002663JR01V03.
- Martens and Associates (2018) *Geotechnical and Acid Sulfate Soils Assessment: Lot 1 DP 1097743, Pacific Highway, Moonee Beach, NSW*. Ref. P1002663JR09V01.
- Nearmap (2018), Aerial photograph.
- NSW DPI (2008), *Coffs Harbour Area Coastal Quaternary Geology, 1:100,000 Geological Sheet*.
- NSW EPA (1995) *Sampling Design Guidelines*.
- NSW EPA (2017) 3rd Ed. *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*.
- NSW LPI, Map sales: Aerial photographs (1954, 1964, 1974, 1989, 2000).
- NSW OEH (2011) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.
- NSW OEH, (eSPADE, NSW soil and land information).
<http://www.environment.nsw.gov.au>
- NSW SIX – *Spatial Information Exchange – Land & Property Information*
<https://six.nsw.gov.au/wps/portal/>.

7 Attachment A – Site Plans



Martens & Associates Pty Ltd ABN 85 070 240 890		Environment Water Wastewater Geotechnical Civil Management	
Drawn:	RM	Site location Lot 1 DP 1097743 Pacific Hwy, Moonee Beach, NSW Source: Sixmaps	Drawing No:
Approved:	GT		FIGURE 1
Date:	13.07.2018		
Scale:	Not to Scale		Job No: P1002663JR11V01

8 Attachment B – Historical Aerials



SITE BOUNDARIES ARE INDICATIVE ONLY




CLIENT/ PROJECT MOONEE PARKLANDS TRUST C/- JW PLANNING PTY LTD	TITLE 1964 AERIAL PHOTO: LOT 1 DP 1097743, PACIFIC HWY, MOONEE BEACH		DESIGNED:	DATUM:	SHEET 2 OF 6 SHEETS	REV.	DESCRIPTION	DATE	ISSUED
			MT	AHD		1.0	STAGE ONE CONTAMINATION ASSESSMENT	16.08.2010	MT
			DRAWN:	HORIZONTAL RATIO:		2.0	STAGE ONE CONTAMINATION ASSESSMENT	20.11.2012	GT
			MT	1:3000 @A3 1:1500 @A1		3.0	STAGE ONE CONTAMINATION ASSESSMENT	09.07.2018	GT
THIS PLAN MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED BY PRINCIPAL CERTIFYING AUTHORITY <small>All measurements in m unless otherwise specified.</small>	PROJECT MANAGER:	DRAWING NUMBER:	REVIEWED:	VERTICAL RATIO:	PAPER SIZE:				
	MR GRAY TAYLOR	P1002663JD03V03	GT	1:3000 @A3 1:1500 @A1	A1 / A3				

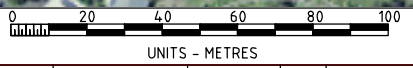
(C) Copyright Martens & Associates Pty. Ltd. 2012



SITE BOUNDARIES ARE INDICATIVE ONLY

 <div>MARTENS & ASSOCIATES PTY LTD Sustainable Solutions Environmental - Geotechnical - Civil Hydraulic - Wastewater Engineers</div>	CLIENT/ PROJECT MOONEE PARKLANDS TRUST C/- JW PLANNING PTY LTD	TITLE 1989 AERIAL PHOTO: LOT 1 DP 1097743, PACIFIC HWY, MOONEE BEACH	DESIGNED: MT	DATUM: AHD	SHEET 4 OF 6 SHEETS	REV.	DESCRIPTION	DATE	ISSUED
			DRAWN: MT	HORIZONTAL RATIO: 1:3000 @A3 1:1500 @A1		1.0	STAGE ONE CONTAMINATION ASSESSMENT	16.08.2010	MT
						2.0	STAGE ONE CONTAMINATION ASSESSMENT	20.11.2012	GT
						3.0	STAGE ONE CONTAMINATION ASSESSMENT	09.07.2018	GT
	THIS PLAN MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED BY PRINCIPAL CERTIFYING AUTHORITY <small>All measurements in m unless otherwise specified.</small>	PROJECT MANAGER: MR GRAY TAYLOR	DRAWING NUMBER: P1002663.D03V03	REVIEWED: GT	VERTICAL RATIO: 1:3000 @A3 1:1500 @A1	PAPER SIZE:			
						A1 / A3			





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SIGNED AS APPROVED BY PRINCIPAL CERTIFYING AUTHORITY
All measurements in m unless otherwise specified.

TITLE
2008 AERIAL PHOTO: LOT 1 DP 1097743, PACIFIC HWY, MOONEE BEACH

PROJECT MANAGER:
MR GRAY TAYLOR

DRAWING NUMBER:
P1002663.D03V03

DESIGNED:	DATUM:	SHEET 6 OF 6 SHEETS	REV.	DESCRIPTION	DATE	ISSUED
MT	AHD		1.0	STAGE ONE CONTAMINATION ASSESSMENT	16.08.2010	MT
DRAWN:	HORIZONTAL RATIO:		2.0	STAGE ONE CONTAMINATION ASSESSMENT	20.11.2012	GT
MT	1:3000 @A3 1:1500 @A1		3.0	STAGE ONE CONTAMINATION ASSESSMENT	09.07.2018	GT
REVIEWED:	VERTICAL RATIO:	PAPER SIZE:				
GT	1:3000 @A3 1:1500 @A1	A1 / A3				



REV		DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	<div>SCALE</div> <div><div><div>0102030405060708090100</div><div>A1 (A3)1:1,000 (1:2,000)</div></div><div>METRES</div></div>	GRID	DATUM	PROJECT MANAGER	CLIENT	<div><div><div><div></div></div><div><div>martens</div><div>& Associates Pty Ltd</div></div></div><div>Consulting Engineers</div><div>Environment Water Geotechnical Civil</div></div> <div>Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au</div>	DRAWING TITLE											
A	PRELIMINARY SITE INVESTIGATION	05/07/2018	PB	RM	GT	GT	MGA		MAHD	GT	JW PLANNING PTY LTD.														
													2018 AERIAL PHOTOGRAPH NEARMAP												
									DISCLAIMER & COPYRIGHT			PROJECT NAME/PLANSET TITLE		PROJECT NO.				PLANSET NO.		RELEASE NO.		DRAWING NO.		REVISION	
								This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd. (C) Copyright Martens & Associates Pty Ltd																	
									LOT 1, DP1097743 PACIFIC HIGHWAY, MONEE BEACH, NSW					P1002663		PS01		R02		PS01-AZ00		A			
A1 / A3 LANDSCAPE [A1L_C_v02.0.01]									DRAWING ID: P1002663-PS01-R02-AZ00				<div><div>0102030405060708090100</div><div>METRES</div></div>												