

# MARINE POLLUTION RESEARCH PTY LTD

Marine, Estuarine and Freshwater Ecology, Sediment and Water Quality Dynamics

A.B.N. 64 003 796 576

25 RICHARD ROAD SCOTLAND ISLAND NSW 2105

PO BOX 279 CHURCH POINT NSW 2105

TELEPHONE (02) 9997 6541 E-MAIL panink@bigpond.com

Mr C Forrester

Principle, Planning

Ethos Urban

27 Aug 2020

## GLADESVILLE BRIDGE MARINA REFURBISHMENT PROJECT -

## MARINE SEDIMENT ENVIRONMENTAL MANAGEMENT PLAN

### 1 INTRODUCTION

As part of its preliminary assessment of the Gladesville Bridge Marina Refurbishment EIS, NSW EPA requested an independent assessment by a NSW EPA accredited Site Auditor of the GBM EIS Contaminated Lands and Sediment assessments. ENARES Pty Ltd engaged Ramboll Australia Pty Ltd (Rambol) to undertake this assessment. Mr Tom Onus (NSW Auditor 1505) of Rambol has provided an *Interim Audit Advice No 1 dated 8 may 2020* (Ramboll 2020) in relation to the Gladesville Marina Refurbishment Project, and the Auditor's opinion includes the following:

*Based on the data reviewed and the nature of the proposed development (which involves retaining the concrete slipway in situ) and associated exposure scenarios, I agree that active remediation of the site and associated sediments is not required in association with the proposed redevelopment.*

*The sediments on the lower slipway would be subject to passive management indefinitely, and therefore the Gladesville Bridge Marina should be consulted as to the feasibility and desirability of this outcome. They would also be responsible for managing the site and ensuring compliance with the requirements of an ongoing passive environmental management plan (EMP).*

*Sediments are to be managed during construction as per the various plans submitted with the development application. Subject to agreement to the approach by Gladesville Bridge Marina, an EMP should be prepared to manage potential risks to human health and the*

*environment during any potential disturbance of contaminated sediments in the future. Implementation of the EMP should be included as a condition of the development consent to ensure enforceability.*

Marine Pollution Research Pty Ltd (MPR) was requested by GBM to prepare a Passive Sediment Environmental Management Plan (EMP) for the management of potential risks to human health and the environment during any potential disturbance of contaminated sediments in the future, as per the recommendations of the Ramboll (2020) Interim Audit Report.

## **1.1 Risk Pathways**

Apart from direct ingestion risk which is considered highly unlikely, the only other risk pathway for human health arises from water ingestion. The risk of a person tripping (or falling from a craft) and ingesting water is low but real. However, for ingested water to contain sufficient sediment-derived pollutants to constitute a health risk requires the sedimental pollutants to be agitated and in the water column. Further, sediments would need to be disturbed or agitated to such a degree that there is sufficient time for (a) pollutants to be released to the water column and (b) sufficient agitation to keep the pollutants in the water column for these to be ingested by humans. That is, the risk to human health by water ingestion requires concerted and persistent sediment agitation of the sediments to bring and keep pollutants in the water column.

Whilst this combination is considered a low risk scenario, residual risk can be mitigated by eliminating the factors that could lead to persistent agitation of the bottom sediments. Given the wind and wave protection of the existing GBM slipway due to the surrounding marina structures and the limited area for maneuvering vessels, there is negligible risk of near-shore sediment agitation via waves, wash or tidal currents and accordingly, the only potential source of persistent agitation of bottom sediments would be use of propeller driven outboard motors on vessels that are small enough to be deployed in near-shore shallow waters. This potential risk can be eliminated by preventing access to the inshore waters at the slipway by motorised vessels and preventing launching of motorised vessels from the slipway.

Risks to the environment is also linked to persistent agitation of the sediments and that would also be minimised to an acceptable low risk level by employing the same prohibitions suggested above.

## **2 PROPOSED USE OF THE SLIPWAY AND MANAGEMENT REQUIREMENTS**

The GBM refurbishment plan includes cessation of slipway vessel repair and maintenance procedures and removal of the slipway rails. It is also proposed that the concrete slipway will be made available for public use for launching small dinghies and other recreational paddling craft.

In terms of managing risks to human health and the environment there are two areas of risk to be managed; (a) physical slip and trip risks from launching from and returning to an intertidal concrete slipway and (b) health risk associated with potential disturbance of near-shore shallow water contaminated sediments. It is also noted that the two risk categories are related in that persons slipping at the lower end of the ramp could or would slip into the near-shore sediments at the base of the ramp.

The aim of the Passive Management Plan then is to lower the slip and trip risk to an acceptable level and thereby lower the potential for disturbance of the near-shore sediments.

### **3 PROPOSED PASSIVE ENVIRONMENTAL MANAGEMENT PLAN**

The following numbered recommendations are made to minimise health risk for humans and risk to the environment arising from use of the slipway facilities area at GBM.

#### **3.1 Slipway Usage**

1. The slipway is only to be used for the launching of non-motorised recreational craft.
2. Motorised craft are not to use the inshore shallow waters at the front of the slipway.

#### **3.2 Slip and trip prevention**

Whilst the ramp is not polished concrete and currently has good frictional stability for users of the ramp, the main risk factor associated with slip and trip risk on the sloping concrete ramp is accumulation of silt or algae films on the ramp that make the ramp slippery. Accordingly, slip and trip risk and access to the sediments at the end of the concrete slipway is to be lowered by limiting public use of the intertidal portions of the ramp for vessel launching and retrieval, limiting public access to the inshore sediments, limiting buildup of silts and algae on the slipway and providing signage explaining risks plus preventative measures:

3. Limiting actual slipway usage will be achieved by incorporating a 2m wide linked pontoon launching ramp onto the north-west side of the slipway (against the existing fixed marina deck) that projects 2m north-east beyond the end of slipway over deeper water (see **Figure 1**).
4. The pontoon system to be used will be a low freeboard (kayak pontoon) system to lower the distance that persons need to launch and retrieve passive water craft from the pontoons and to better facilitate climbing out of (or off) passive water craft onto the pontoons.
5. The remainder of the slipway is to be inspected at a suitable low tide at least weekly - or as necessary seasonally - for accrued algae films and/or silt/sediment films that make the

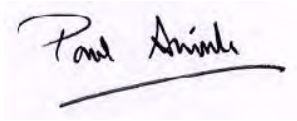
ramp slippery and the intertidal slipway surface is to be cleaned at a sufficient frequency to minimise slipping risk.

### **3.3 Signage for Slipway Usage and about Sediment Contamination**

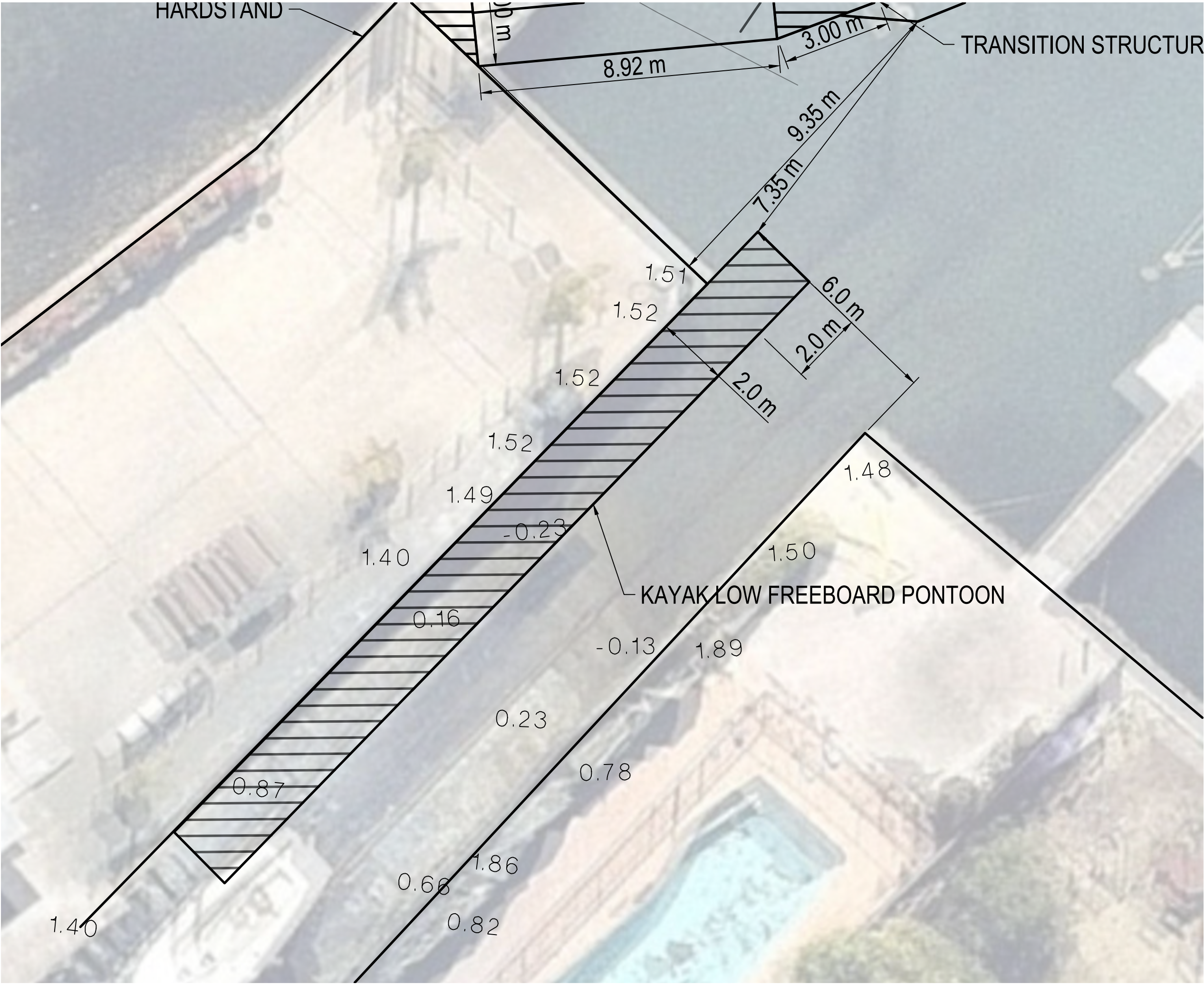
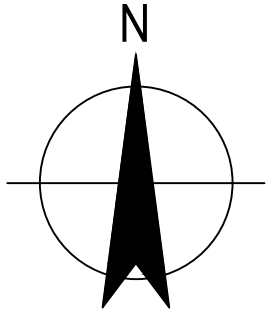
Appropriately placed signage is to alert persons of the following risks and prohibitions:

6. The signage is to alert persons of the contaminated status of the near-shore sediments and the need to minimise disturbance.
7. The signage is to alert persons of slip-risk when using the facilities.
8. The signage should say that access to the waterway or the seabed from the slipway is not safe and is prohibited.
9. The signage should say that access to the waterway is limited to use of the pontoon system.
10. The signage should say that only persons wearing appropriate footwear and appropriate buoyancy vests (the later as mandated by law) may use the launching facility.

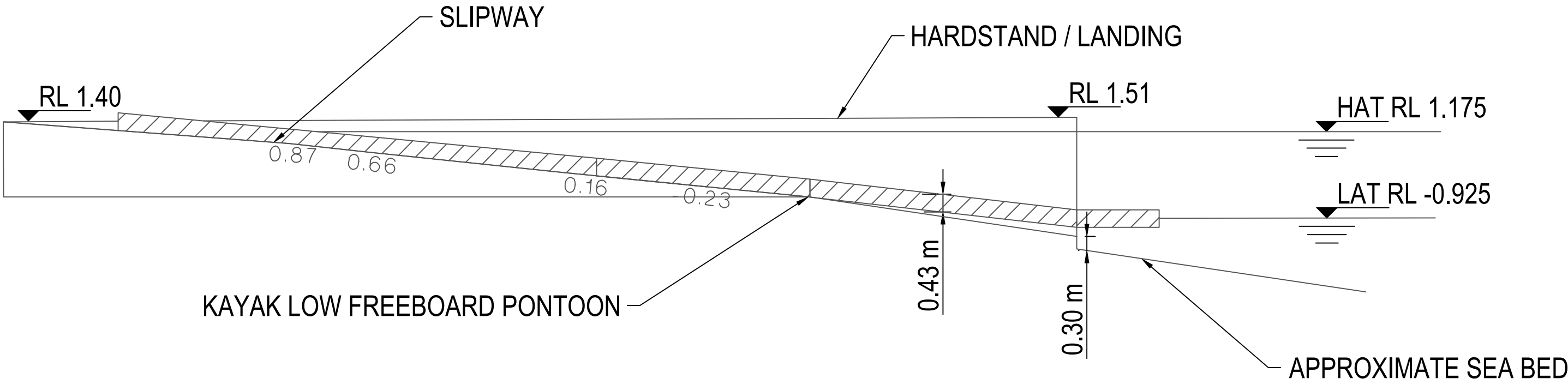
Yours Sincerely,

A handwritten signature in black ink that reads "Paul Anink". The signature is written in a cursive style and is underlined with a single horizontal stroke.

Paul Anink  
Principle Scientist and Managing Director  
Marine Pollution Research Pty Ltd



KAYAK PONTOON LAYOUT  
SCALE 1:100



LONG SECTION - KAYAK LOW FREEBOARD PONTOON  
SCALE 1:100

- NOTES:
1. HARDSTAND LEVEL FROM GEOMETRA CONSULTING  
DRAWING "10776-5 PLAN SHEET 1 OF 21"
  2. ALL LEVELS TO AHD DATUM

PRELIMINARY

| rev | description   | app'd | date |
|-----|---------------|-------|------|
| A   | INITIAL ISSUE |       |      |

GLADESVILLE BRIDGE MARINA  
MARINA EXPANSION  
KAYAK PONTOON



Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia  
T 61 2 9239 7100 F 61 2 9239 7199  
E sydmail@ghd.com W www.ghd.com

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