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Dear Paul

## REPLACEMENT OF SPMP GROUNDWATER MONITORING BOREHOLES

Date 17/03/2021

Ramboll UK Limited ("Ramboll") was instructed by Hydro Components UK Ltd ("Hydro") to carry out the installation of two replacement monitoring wells that form part of the Site Protection and Monitoring Programme (SPMP) groundwater monitoring programme, required under Environmental Permit Ref. BX94551F.

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### Background

Hydro (formerly Sapa Components) has carried out regular groundwater monitoring at the installation since August 2005. In line with the current six-monthly monitoring programme, groundwater sampling is undertaken from 8 No. SPMP boreholes. As mentioned in Ramboll's recent report for SPMP Groundwater Monitoring Round 32 (Ref 1620009180\_01, March 2020) and discussed with site representatives; two of the boreholes (monitoring wells) that form part of the groundwater monitoring infrastructure have deteriorated to the point where they can no longer be reliably sampled.

Ref L1620009621\_01  
Replacement  
Boreholes.docx

SPMP sampling boreholes MW1 and MW2 were installed at the site prior to Ramboll's involvement in 2006:

- Borehole MW1, located at the eastern end of the main operations building, has recently been lost to resurfacing works in the vicinity; and
- Borehole MW2, located in the south-east of the site in a down-gradient location that is considered fundamental to the success of the ongoing SPMP monitoring programme, is missing its protective headworks and the standpipe is suspected to have collapsed at a depth of approximately 3m below ground level (bgl).

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## Objective and Scope of Work

The objective of the was to provide two new sampling boreholes, replacing MW1 and MW2, to enable the continuation and fulfilment of the current SPMP groundwater monitoring programme requirements. The locations of the replacement monitoring wells (MW1A and MW2A) are shown on Figure 1, Appendix 1.

Prior to works commencing, a site-specific Health and Safety Plan was completed, along with an Environmental Risk Assessment in accordance with Ramboll's Environmental Management System; and exploratory locations were marked out by a Ramboll approved service clearance contractor, accompanied by a Ramboll engineer.

On 10<sup>th</sup> and 16<sup>th</sup> February 2021, two boreholes were drilled to depths of 6.0m below ground level (bgl) by Jackson Drilling Holdings Ltd, as supervised by Ramboll. The boreholes were installed with permanent groundwater monitoring wells comprising 50mm diameter plastic pipes, set within a gravel-pack, and finished with a lockable traffic rated cover concreted flush with ground level. Upon completion, groundwater levels were recorded by Ramboll; and each well was purged of standing water.

## Field Observations

Ground conditions briefly comprise concrete hardstanding over a layer of Made Ground (to a maximum depth of 1.30m bgl in MW1A). Natural superficial deposits of alluvium, and sand and gravel were encountered to the base of each borehole; which is consistent with the geology described in the British Geological Survey (BGS) map of the area. A full lithological description is recorded on the logs, which are provided as Appendix 2.

During drilling, groundwater strikes were recorded at 3.50m bgl (MW1A) and 4.00m bgl (MW2A); subsequent resting groundwater levels were recorded at 3.05m bgl and 2.61m bgl respectively.

No visual or olfactory evidence of contamination was noted within soil or groundwater during drilling or subsequent groundwater monitoring.

## Conclusions

The newly installed monitoring wells have since been included within SPMP Groundwater Monitoring Round 33, undertaken by Ramboll in February 2021, to be reported separately as Ref. 1620010733.

Yours sincerely



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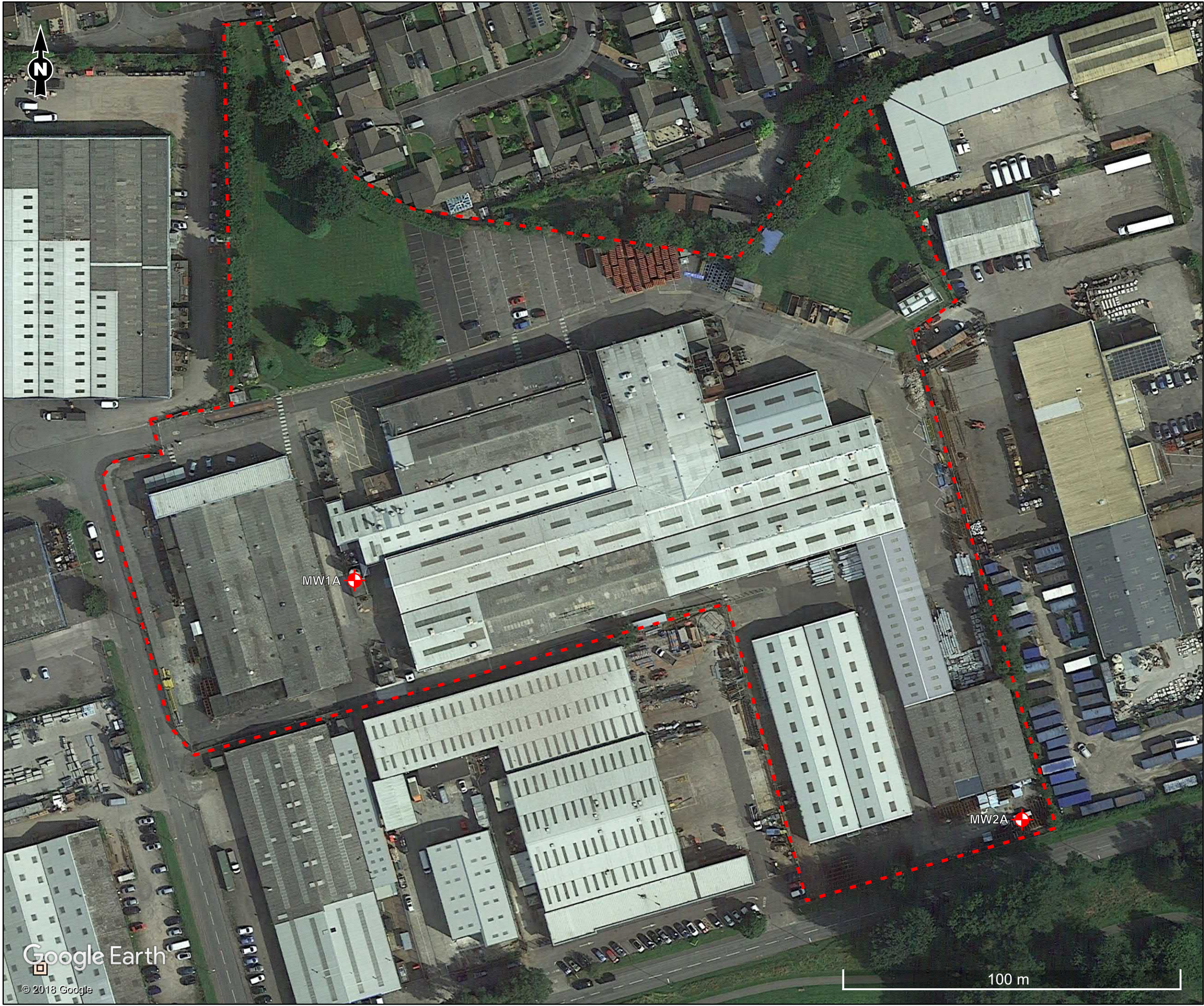
Encl. Appendix 1, Figures

Appendix 2, Borehole Sample Logs

## Appendix 1

### Figures





Legend



-  Approximate Site Boundary
-  Monitoring Well / Borehole  
Installed in February 2021

Figure Title  
Borehole Location Plan

Project Name  
SPMP Replacement Monitoring Wells

Project Number 1620009621	Figure No. 1
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Date March 2021	Prepared By RH
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Scale See Scalebar	Issue 1
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Client  
Hydro Aluminium UK Ltd





## Appendix 2

### Borehole Sample Logs



**Ground Elevation: 60.75m AOD**

**Co-ordinates: 317914E, 188484N**

**Date: 16/02/2021**

**Equipment: Comacchio GEO305 Rotary Rig**

**Diameter: 127 mm**

The information contained on this borehole log is for environmental purposes only and cannot be relied upon for geotechnical or any design purposes

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





Temporary casing details: Cased to the base of the hole at 6.0m bgl.

Groundwater details: Groundwater encountered at 3.50m bgl during drilling. Rest level of 3.05m bgl recorded on 16/02/2021.

Monitoring well standpipe diameter: 50 mm

Other comments:

Well installation key:

	Concrete		Bentonite seal		Arisings		Filter pack		Slotted pipe		Plain pipe	Checked by:
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Sheet 1 of 1



**Ground Elevation: 59.28m AOD**

**Co-ordinates: 318107E, 188409N**

Date: 10/02/2021

**Equipment: Comacchio GEO305 Rotary Rig**

**Diameter: 127 mm**

The information contained on this borehole log is for environmental purposes only and cannot be relied upon for geotechnical or any design purposes







Temporary casing details: Cased to the base of the hole at 6.0m bgl.

Groundwater details: Groundwater encountered at 4.00m bgl during drilling. Rest level of 2.61m bgl recorded on 16/02/2021.

Monitoring well standpipe diameter: 50 mm

Other comments:

Well installation key:

	Concrete		Bentonite seal		Arisings		Filter pack		Slotted pipe		Plain pipe
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Checked by:

Sheet 1 of 1