

Wroxton Group Holdings Ltd
Unit 16 Redfields Business Park
Church Crookham
GU52 0RD

46383-ECE-XX-XX-L-C-0003

FAO Mitch McDonagh

21 February 2024

Dear Mitch,

Glasspool Farm, Riseley – Gas Monitoring Summary

Eastwood Consulting Engineers undertook a Phase 1 and Phase 2 geotechnical and geo-environmental site investigation at the above site in 2022. The results are covered in our report referenced 46383/002, dated 4 July 2022.

The current proposals for the site include the development of a single residential property located in the south west corner of the site, as indicated by the red line boundary on the Location Plan (dwg ref 23-P072-02) enclosed. The Planning conditions for this application require further information on the risk of gas migration into the property. This letter therefore presents a gas risk assessment in order to quantify the risk to the proposed single property which is the subject of the current planning application.

Potential Gas Sources

The site lies within an area where <1% of homes lie at or above the Action Level and as such, no radon protective measures are necessary in the construction of new dwellings at the site.

Information obtained during the Phase 1 investigation showed a licensed waste management site and historical landfill located 49 m south west of the site. The site is registered to 'B Fox', dated May 1983 and the licence was noted to have lapsed. Authorised waste was noted to include construction and demolition wastes, controlled wastes and excavated natural material.

Eastwood Consulting Engineers is a trading name of Eastwood and Partners (Consulting Engineers) Limited
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The historical maps noted a small gravel pit 100 m south of the site in 1872 however, given that it is no longer shown by the 1890s, this was not considered to pose a significant risk to site. No other areas of potentially infilled land were identified within 250 m of the site.

Made ground was encountered in areas close to the old sheds to a maximum depth of 2 m below ground level (bgl). This was not however found to contain a significant amount of organic material and as such would not be considered capable of producing ground gas.

Given the close proximity of the landfill to the site, a gas monitoring programme was undertaken.

Gas Monitoring

Six gas monitoring wells were installed at the site during ECE's Phase 2 investigation in October 2021, one of which (WS01) was located within the red line boundary shown on the enclosed Location Plan. An Exploratory Hole Location Plan (dwg ref 46383-001) showing the positions of the monitoring wells is enclosed.

The programme of gas monitoring commenced in January 2022. Unfortunately, upon returning to site to complete the first round of monitoring, it was discovered that WS01 had been destroyed by plant movements and was therefore unable to be monitored. However, all remaining wells were found to be intact, including WS02 which is located very close to the northern extent of the red line boundary, and these were then monitored on six occasions between 31 January and 30 May 2022.

A copy of the monitoring results is enclosed, these indicate that the majority of the response zones of the monitoring wells were flooded over the period during which the monitoring was undertaken. The following is extracted from the NHBC Hazardous Ground Gas document:

A flooded response zone means that any gas in the well is trapped gas that is simply in equilibrium with the dissolved gas in the groundwater. Any gas recorded from monitoring will not be representative of the gas regime in the unsaturated zone. This is because in the surrounding ground the equilibrium in the well headspace is not reflected in the unsaturated zone because of oxygen ingress from the ground surface and potentially oxidation of methane. It is important to remember that the characterisation of a site using gas screening values is based on using data from the unsaturated zone and from wells that are not flooded.

WS05, located in the east of the wider site, around 90 m from the current subject site, was not found to have a fully flooded response zone during any of the monitoring visits. This recorded

concentrations of carbon dioxide in excess of the 5% limiting value for 'green' classification under the NHBC traffic light system during four of the six monitoring visits. These were not however recorded in conjunction with any positive flow rates.

During the final round of monitoring, only WS06 was found to have a fully flooded response zone, with the remaining wells all recording the water level within, but not above the top of the response zone. This monitoring round is therefore considered to be most representative of the gas present in the unsaturated zone, and no elevated concentrations or positive flow rates were recorded in any of the wells.

Furthermore, the high groundwater level will prevent migration of ground gas through the soil. Ground gas can however be dissolved in the groundwater and from there can partition into the unsaturated zone above, but any generation would be at very low rates and as such wouldn't be considered to pose a significant risk at the site.

Conclusion

Given the above lines of evidence, it is considered that there is no significant risk of ground gas migration into the proposed property. Furthermore, the property is to be constructed with a ventilated subfloor void, thus any small amounts of ground gas present will be dispersed before entering the property. As such no ground gas precautions are considered to be required in the construction of the property.

Yours sincerely,

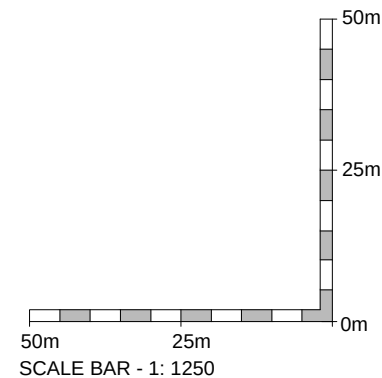
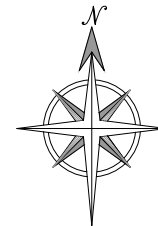
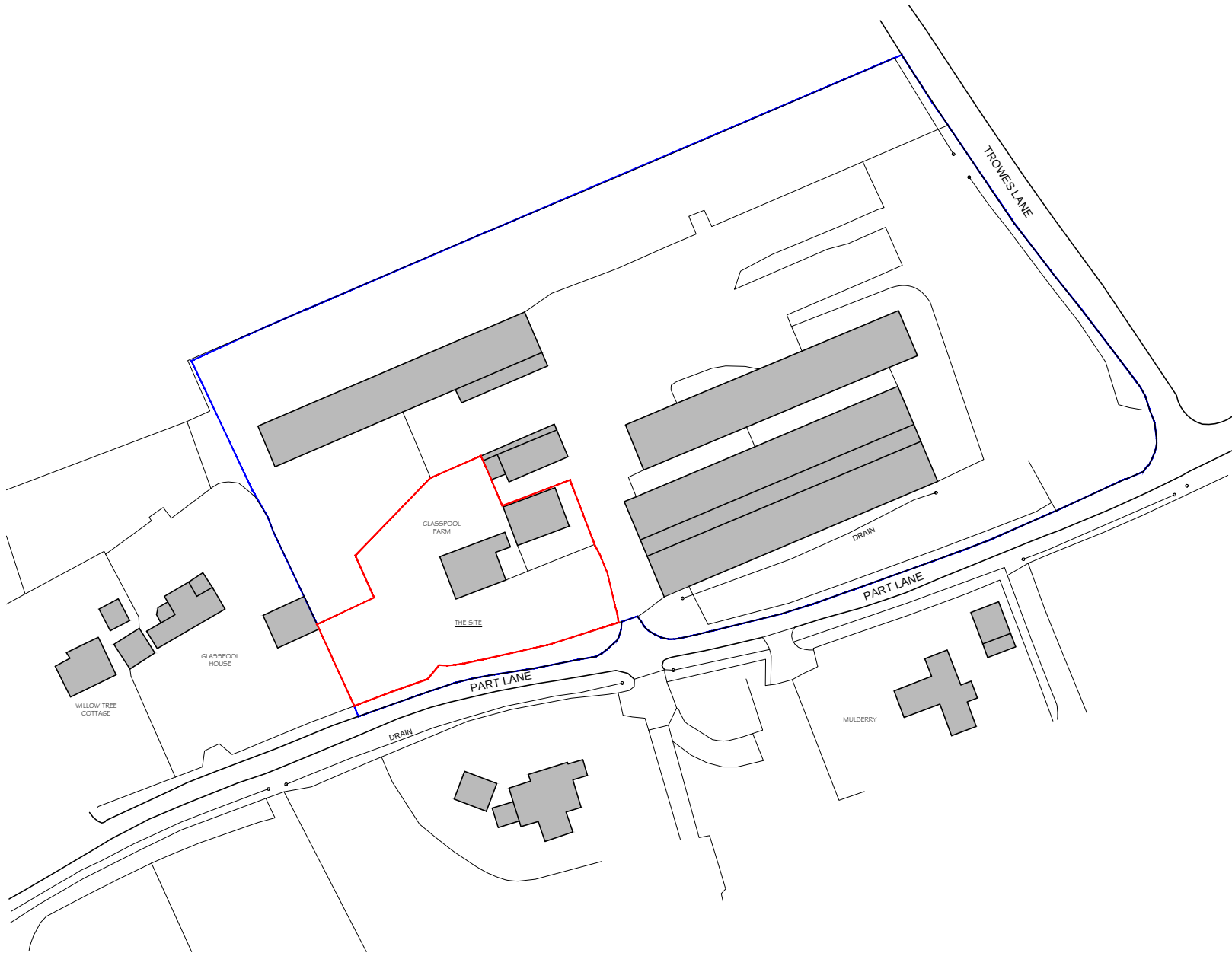


Ruth Noble
Associate

Enc. Location Plan (drawing ref 23-P072-02 rev B)

Exploratory Hole Location Plan (drawing ref 46383-001 rev A)

Gas monitoring results



LOCATION PLAN
(1:1250)



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Status **PLANNING ISSUE**

Client **MR K McDONAGH**

Project Title **GLASSPOOL FARM, PART LANE,
RISELEY**

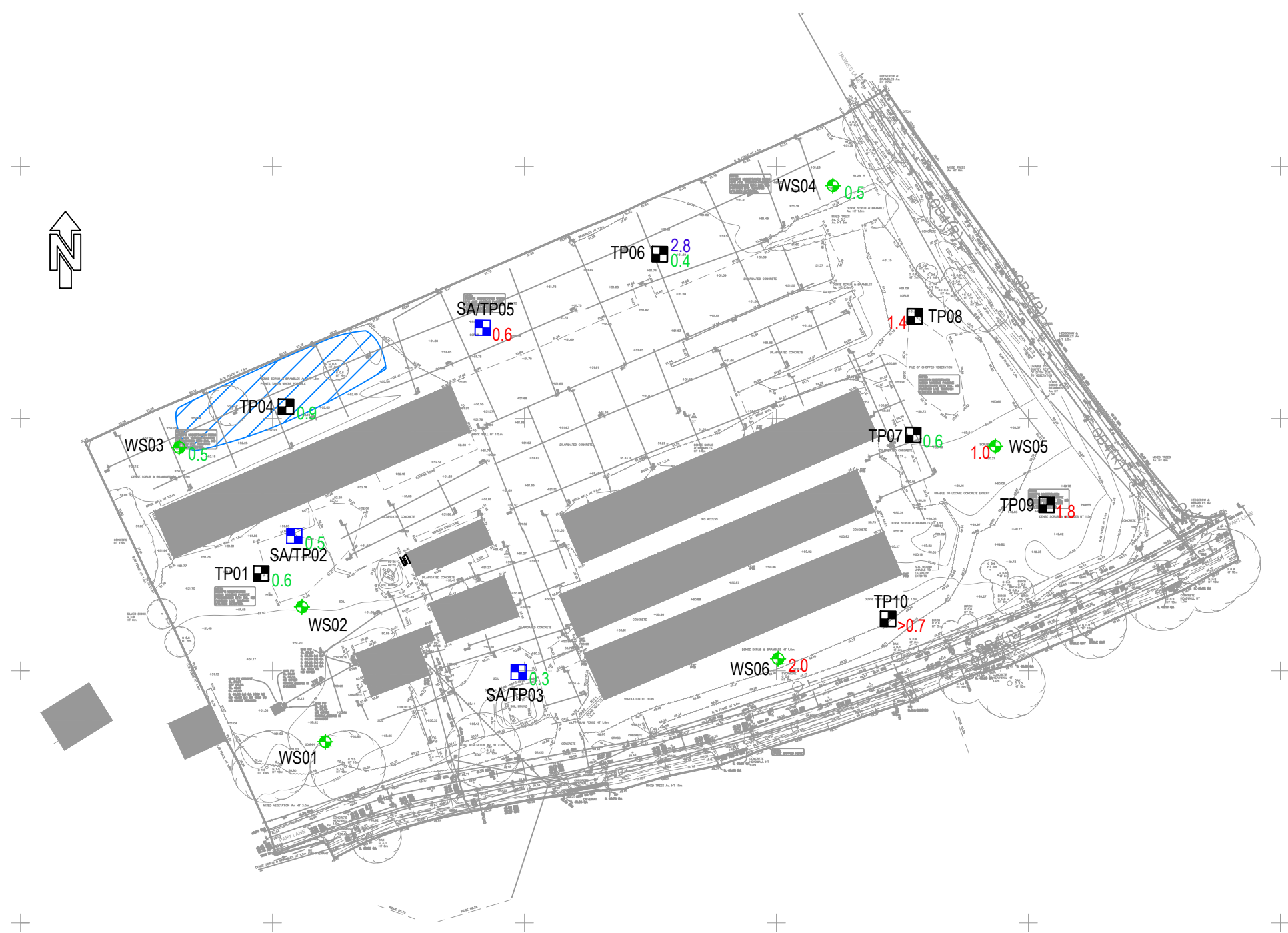
Rev. **A** Date **05-DEC-23** Detail **APPLICATION BOUNDARY AMENDED TO INCLUDE NEW GARAGE BLOCK**

DRAWING Title **LOCATION PLAN**

Scale **1:1250 @ A4** Date **SEP-23** Drawn **MM**

DRAWING No. **23 - P072- 02** Rev. **B**

INFORMATION WITHIN THIS DRAWING IS NOT NECESSARILY PRODUCED TO SCALE.
ALWAYS USE FIGURED DIMENSIONS AND CO-ORDINATES - IF IN DOUBT, ASK.



KEY

- Approximate location of trial pit excavated by Eastwood and Partners on the 14th and 15th of October 2021.
- Approximate location of trial pit and infiltration test excavated and undertaken by Eastwood and Partners on the 24th of October 2021.
- Approximate location of window sample borehole supervised by Eastwood and Partners on the 21st and 25th of October 2021.
- Depth to base of made ground.
- Depth to base of top soil.
- Approximate extent of infilled historical pond.
- Depth to top of London clay formation.

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WROXTON GROUP HOLDINGS LTD
GLASSPOOL FARM, PART LANE, RISELEY,
READING, BERKSHIRE
EXPLORATORY HOLE LOCATION PLAN

A	First Issue.					
REV	DESCRIPTION			SIG	CHK	DATE
SCALE WHEN PLOTTED AT A3			DRAWING STATUS			
1:1000			PRELIMINARY			
DRAWN	CHECKED	DATE	DRAWING NUMBER		REV	
SA/AS	EJD	01.04.2022	46383/001		A	

Monitoring Date 31/01/22	CH ₄ %	CO ₂ %	O ₂ %	Atmos. Press (mb)	Flow (l/hr)	Water depth (m bgl)	Base of Pipe (m bgl)	Response zone (m bgl)	Flooded?
WS02	0.3	0.9	20.2	1021	0.0	0.71	3.43	1.0-3.43	Y
WS03	0.0	2.7	17.1	1020	-0.9	0.98	3.96	1.0-3.96	Y
WS04	2.0	4.6	16.9	1020	-4.5	0.73	3.80	1.0-3.80	Y
WS05	1.0	7.0	6.9	1020	-0.1	1.89	3.87	1.0-3.87	N
WS06	0.4	3.6	9.9	1020	-3.2	0.88	4.00	1.0-4.00	Y
Monitoring Date 21/02/22	CH ₄ %	CO ₂ %	O ₂ %	Atmos. Press (mb)	Flow (l/hr)	Water depth (m bgl)	Base of Pipe (m bgl)	Response zone (m bgl)	Flooded?
WS02	0.0	0.2	20.4	1004	-0.4	0.51	3.43	1.0-3.43	Y
WS03	0.0	2.6	16.8	1004	0.0	0.73	3.96	1.0-3.96	Y
WS04	0.0	4.8	15.0	1004	4.2	0.54	3.80	1.0-3.80	Y
WS05	0.0	7.6	6.0	1004	-0.31	1.8	3.87	1.0-3.87	N
WS06	0.2	2.2	16.8	1006	-0.2	0.5	4.00	1.0-4.00	Y
Monitoring Date 10/03/22	CH ₄ %	CO ₂ %	O ₂ %	Atmos. Press (mb)	Flow (l/hr)	Water depth (m bgl)	Base of Pipe (m bgl)	Response zone (m bgl)	Flooded?
WS02	0.2	2.3	19.4	1012	3.3	0.47	1.74	1.0-1.74	Y
WS03	0.0	2.7	18.2	1012	3.0	0.68	3.88	1.0-3.88	Y
WS04	0.1	4.5	14.9	1011	4.0	0.48	3.72	1.0-3.72	Y
WS05	0.0	9.6	3.9	1012	0.0	1.79	3.88	1.0-3.88	N
WS06	0.0	3.5	15.7	1012	1.1	0.52	4.00	1.0-4.00	Y

All boreholes, once no longer in use for monitoring, should be decommissioned following the Environment Agency guidance laid out in Section 5.5 of the publication "Guidance on the design and installation of groundwater quality monitoring points", Science Report SC020093, January 2006. This is to remove potential preferential pathways for ground gas migration to future receptors which may be created by the wells.

 CONSULTING ENGINEERS St Andrew's House 23 Kingfield Road Sheffield, S11 9AS T: 0114 255 4554 E: mail@eastwoodce.com eastwoodce.com	GLASSPOOL FARM, RISELEY WROXTON GROUP HOLDINGS LTD GAS MONITORING RESULTS	JOB NO. 46383 DATE 31/01/2022 to 30/05/2022	Concentration equivalent to Amber 1
			Concentration equivalent to Amber 2
			Concentration equivalent to Red

Monitoring Date 08/04/22	CH ₄ %	CO ₂ %	O ₂ %	Atmos. Press (mb)	Flow (l/hr)	Water depth (m bgl)	Base of Pipe (m bgl)	Response zone (m bgl)	Flooded?
WS02	0.0	2.2	19.0	993	-2.7	0.57	1.74	1.0-1.74	Y
WS03	0.0	0.6	20.3	992	-3.7	0.83	3.88	1.0-3.88	Y
WS04	0.0	4.6	15.4	992	-4.7	0.55	3.72	1.0-3.72	Y
WS05	0.0	8.5	6.9	992	-0.4	1.57	3.88	1.0-3.88	Y
WS06	0.0	3.2	14.3	992	-1.4	0.58	4.00	1.0-4.00	Y

Monitoring Date 27/04/22	CH ₄ %	CO ₂ %	O ₂ %	Atmos. Press (mb)	Flow (l/hr)	Water depth (m bgl)	Base of Pipe (m bgl)	Response zone (m bgl)	Flooded?
WS02	0.0	0.1	19.8	1023	-0.4	0.86	1.74	1.0-1.74	Y
WS03	0.0	0.1	20.0	1023	-0.4	1.09	3.89	1.0-3.88	N
WS04	0.1	0.1	20.0	1023	-0.4	0.80	3.71	1.0-3.72	Y
WS05	0.0	0.2	19.9	1023	-0.4	1.92	3.92	1.0-3.88	N
WS06	0.3	0.1	20.0	1023	-0.4	0.62	3.97	1.0-4.00	Y

Monitoring Date 30/05/22	CH ₄ %	CO ₂ %	O ₂ %	Atmos. Press (mb)	Flow (l/hr)	Water depth (m bgl)	Base of Pipe (m bgl)	Response zone (m bgl)	Flooded?
WS02	0.0	0.1	19.7	1008	0.0	1.19	1.74	1.0-1.74	N
WS03	0.0	0.1	19.9	1008	0.0	1.43	3.89	1.0-3.88	N
WS04	0.0	0.1	20.2	1009	0.0	1.13	3.71	1.0-3.72	N
WS05	0.0	0.1	20.0	1009	0.0	2.26	3.92	1.0-3.88	N
WS06	0.0	0.1	20.1	1009	0.0	0.71	3.98	1.0-4.00	Y

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			Concentration equivalent to Amber 2	
			Concentration equivalent to Red	