Appendix 3: Chemical Analysis and Report

Rowan

River Camac Surface Water Monitoring 2021 Report 2021

Hurley Site, Saggart, Co. Dublin

Coffey Constructions Ltd

Client Ref:6613/COF0001-6

Date: 08/06/2021

Section 2 Introduction

2.1 Introduction

Rowan were contracted to carry out surface water monitoring upstream and downstream of the proposed site at the River Camac. The sampling locations will be referred to as SW2 and SW3.

2.3 Location

The Proposed project is located in the townland of Saggart, Co. Dublin. The nearest village to the site is Saggart, which is located c.600m northeast of the proposed site. The River Camac flows along the north-eastern site boundary. Refer to **Figure 1** for proposed Site Location.

Water samples were taken at 2No. separate locations on the River Camac and sent to The Water Lab for Chemical Analysis. These locations are summarised in Table 1 and illustrated in Figure 1.

2.4 Proposed Project Details

The principal activities associated with the proposed development are;

- Land recontouring works on c 38,000m2 of a folio size of c. 5.3 ha (allowing buffers).
- The volume of material to be placed on the site is c. 91,000m3 with an average fill level of c. 3.5 m above existing. Refer to planning drawing numbered PH.001 submitted as part of the planning application for full details.

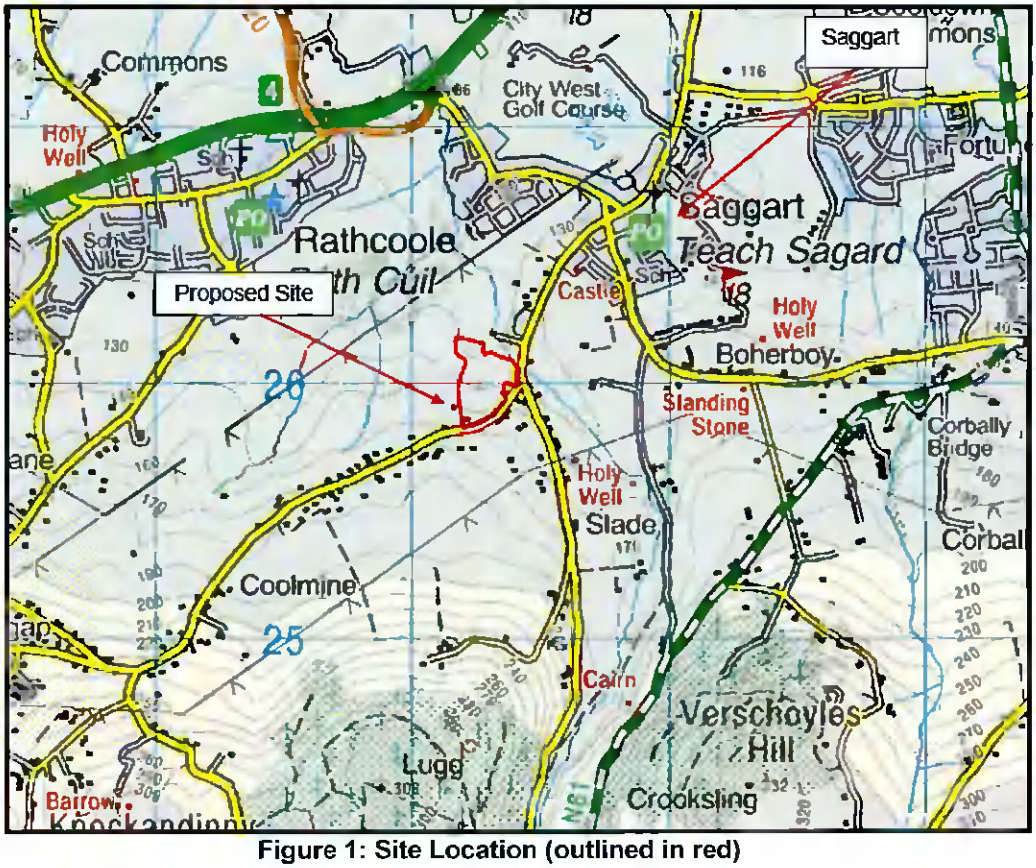

Figure 1: Site Location (outlined in red)

Table 1: River Camac sample locations

Sample No.	Description	Location (ITM)
SW2	Upstream	X703356 Y726089
SW3	Downstream	X703302 Y726180

Figure 2: Site Sampling Locations

Section 3 Methodology

3.1 Surface Water Sampling Methodology

All monitoring procedures consider best practise guidelines to avoid contamination of the sample. Procedures aim to collect a sample that best represents the condition of the surface water at each monitoring location. The procedures also ensure the safe storage and preservation of the samples during transportation and upon receipt at the certified laboratory for analytical testing.

The following sampling procedure was followed when taking the surface water sample.

- Samples were collected in containers obtained from The Water Lab.
- Samples were taken by fully submerging each sample bottle in the water where possible. The sampling bottle was kept as steady as possible to avoid disturbing sediment.
- Notes were made of the smell, colour and contents of the water. Notes were also taken of any visible inflows and possible pollution sources near the monitoring point.
- Samples collected were sealed, bubble wrapped and placed in a freezer box with ice packs for same day delivery to The Water Lab. This kept the samples at a stable temperature.
- Chain of custody forms were completed by Rowan and delivered with the samples to The Water Lab.

Section 4 Monitoring Results

A visual inspection was carried out on the River Camac on the surface water sample whilst taking the sample. **Table 2** below outlines the visual observations at SW1 during the sampling event:

Table 2: SW2 and SW3 Visual Inspection

Monitoring Location	Visual Inspection 18th of May 2021	Other Comments
SW2	• Clear sample • No odour	Dry weather.
SW3	• Slight brownish hue from sample. • No odour	Dry weather.

The samples were taken and dropped to the lab on the day of sampling to minimise time between sampling and analysis and prevent potential contamination of the samples.

The surface water sampling results as reported by The Water Lab for SW2 and SW3 are shown in Table 2 below and the laboratory report can be found in **Appendix B.**

Table 3: SW1 Monitoring Results

Parameter	SW2 Results	SW3 Results	Units	S.I. No. 272 of 2009
pH	7.95	8	pH Unit	6.0 - 9.0
Total BOD	<2	2.8	mg/l	Good status ≤ 1.5 (mean) or ≤ 2.6 (95%ile)
COD	<15	77	mg/l	-
Ammonia	0.08	0.24	mg/l	Good status ≤ 0.065 (mean) or ≤ 0.140 (95%ile)
Total Suspended Solids	14	198	mg/l	-
Total Nitrogen	2.9	2.5	mg/l	-
Total Phosphorous	0.11	<0.09	mg/l	-
Fats, Oils and Grease	<1.00	<1.00	mg/l	-
Mineral Oils	<1.00	<1.00	mg/l	-
EPH >C10 - C20 (Diesel Range)	<0.0001	<0.0001	mg/l	-
EPH >C20 - <C40 (Motor Oil Range)	<0.0001	<0.0001	mg/l	-
EPH >C8 - C10 (Petrol Range)	<0.0001	<0.0001	mg/l	-
EPH >C8 to <C40 (Total)	<0.01	<0.01	mg/l	-

The table includes limits relevant to the Surface Water Regulations 2019 (S.I. No. 77 of 2019)

Section 5 Conclusions and Recommendations

This conclusion is based on the surface water samples taken from SW2 upstream of the proposed site and SW3 downstream of the proposed infill site on the 18th of May 2021. The lab results show the results are within the limits upstream however total BOD exceeds limits downstream for good water quality set out in the EPA Surface Water Regulations 2019 (S.I. No. 77 of 2019)

Recommendations

It recommended that annual monitoring is carried out during the period of time when the site is operational.

Appendix A: Site Layout

Appendix B: SW2 and SW3 Lab Results

THE WaterLab

Contact Name:	Ian Douglas	**Date Sampled:**	18/05/2021
Customer Name:	Rowan Engineering Consultants	**Date Received:**	18/05/2021
Address:	Scurlockstown Business Park	**Sample Location:**	Colley
	Trim		Colley
	Co. Meath	**Date Analysis Started:**	18/05/2021
		Date Analysis Completed:	08/06/2021
	Ireland	**Sample Type:**	Surface Water
Sample Condition:	Satisfactory	**Sample Description:**	S2
Sample ID:	N2861	**Grab/Composite:**	Grab

TEST REPORT

Parameter	Result	Units	Method	Accreditation Status
Total BOD	<2	mg/l O2	SOP-LTM-001	***
COD	<15	mg/l O2	SOP-LTM-002	***
pH	7.95	pH units	SOP-LTM-004	***
Ammonia	0.08	mg/l NH3-N	SOP-LTM-007	***
Total Suspended Solids	14	mg/l	SOP-LTM-003	***
Total Phosphorous	0.11	mg/l P	SOP-LTM-006	***
Fats, Oils and Grease	<1.00	mg/l	Sub-C	**
Mineral Oils	<1.00	mg/l	Sub-C	***
EPH >C8 to <C40 (Total)	<0.01	mg/l	Sub-C	**
EPH >C8 - C10 (Petrol Range)	<0.0001	mg/l	Sub-C	**
EPH >C10 - C20 (Diesel Range)	<0.0001	mg/l	Sub-C	**
EPH >C20 - <C40 (Motor Oil Range)	<0.0001	mg/l	Sub-C	**
Total Nitrogen	2.9	mg/l N	SOP-LTM-005	***

Comments:	

Signed: Kevin Harte **Date:** 08/06/2021

Mr Kevin Harte - Technical Supervisor

The above results relate to the sample(s) tested.
This report shall not be reproduced unless all data is included and by agreement with The Water Lab.

Registered Office.
Unit C3
M4 Business Park
Celbridge, Co. Kildare

VAT No. 9672901T
CN: 449199

Tel: 01-6275656
www.thewaterlab.ie
info@thewaterlab.ie

* INAB accredited
** Accredited by Sub-con lab
*** Non-accredited

Version 04

Report Notes

Accreditation Status

Accreditation Status is denoted as follows:

- * INAB accredited to ISO 17025
- ** Accredited by Sub-con Lab to ISO 17025
- *** Non-accredited

Sub-contracted accreditation is provided by the sub-con lab's own accreditation provider.

Microbiological Analysis

The results obtained from microbiological testing in cfu/100ml should be interpreted as follows:

0 cfu/100ml - Not detected in the volume of sample analysed
1 - 3 cfu/100ml - Less than 4 cfu/100ml detected
4 - 9cfu/100ml - Estimated result

Sample results for Micro analysis tested outside 24 hours from the time of sampling may have impacted the validity of results.
This will be noted in the report comments section of the report if it applies to this sample.

Sampling

Samples taken by staff of The Water Lab follow SOP-LGM-001-Sampling. Specific sampling requirements for individual tests are described on those test SOPs.

Testing

All results of Laboratory testing apply to the sample as received, except where indicated otherwise.

All in-house testing is performed at The Water Lab's premises at the M4 Business Park in Celbridge, Co. Kildare. Subcontracted testing is performed at the premises of the subcontractor used, and these tests are noted as 'Sub-C' in the method section of the report. Testing performed at the site of sampling is noted as '(on-site)' in the parameter section of the report.

Contact Name:	Ian Douglas	**Date Sampled:**	18/05/2021
Customer Name:	Rowan Engineering Consultants	**Date Received:**	18/05/2021
Address:	Scurlockstown Business Park	**Sample Location:**	Colley
	Trim		Colley
	Co. Meath	**Date Analysis Started:**	18/05/2021
		Date Analysis Completed:	08/06/2021
	Ireland	**Sample Type:**	Surface Water
Sample Condition:	Satisfactory	**Sample Description:**	S3
Sample ID:	N2862	**Grab/Composite:**	Grab

TEST REPORT

Parameter	Result	Units	Method	Accreditation Status
Total BOD	2.8	mg/l O2	SOP-LTM-001	***
COD	77	mg/l O2	SOP-LTM-002	***
pH	8.00	pH units	SOP-LTM-004	***
Ammonia	0.24	mg/l NH3-N	SOP-LTM-007	***
Total Suspended Solids	195	mg/l	SOP-LTM-003	***
Total Phosphorous	<0.09	mg/l P	SOP-LTM-006	***
Fats, Oils and Grease	<1.00	mg/l	Sub-C	**
Mineral Oils	<1.00	mg/l	Sub-C	***
EPH >C8 to <C40 (Total)	<0.01	mg/l	Sub-C	**
EPH >C8 - C10 (Petrol Range)	<0.0001	mg/l	Sub-C	**
EPH >C10 - C20 (Diesel Range)	<0.0001	mg/l	Sub-C	**
EPH >C20 - <C40 (Motor Oil Range)	<0.0001	mg/l	Sub-C	**
Total Nitrogen	2.5	mg/l N	SOP-LTM-005	***

Comments:	

Signed: Kevin Harte **Date:** 08/06/2021

Mr Kevin Harte - Technical Supervisor

The above results relate to the sample(s) tested.
This report shall not be reproduced unless all data is included and by agreement with The Water Lab.

Registered Office
Unit C3
M4 Business Park
Celbridge, Co. Kildare

VAT No: 9672901T
CN: 449199

Tel: 01-6275656
www.thewaterlab.ie
info@thewaterlab.ie

* INAB accredited
** Accredited by Sub-con lab
*** Non-accredited

Version 04

Report Notes

Accreditation Status

Accreditation Status is denoted as follows:

- * INAB accredited to ISO 17025
- ** Accredited by Sub-con Lab to ISO 17025
- *** Non-accredited

Sub-contracted accreditation is provided by the sub-con lab's own accreditation provider.

Microbiological Analysis

The results obtained from microbiological testing in cfu/100ml should be interpreted as follows:

0 cfu/100ml - Not detected in the volume of sample analysed
1 - 3 cfu/100ml - Less than 4 cfu/100ml detected
4 - 9cfu/100ml - Estimated result

Sample results for Micro analysis tested outside 24 hours from the time of sampling may have impacted the validity of results.
This will be noted in the report comments section of the report if it applies to this sample.

Sampling

Samples taken by staff of The Water Lab follow SOP-LGM-001-Sampling. Specific sampling requirements for individual tests are described on those test SOPs.

Testing

All results of Laboratory testing apply to the sample as received, except where indicated otherwise.

All in-house testing is performed at The Water Lab's premises at the M4 Business Park in Celbridge, Co. Kildare. Subcontracted testing is performed at the premises of the subcontractor used, and these tests are noted as 'Sub-C' in the method section of the report. Testing performed at the site of sampling is noted as '(on-site)' in the parameter section of the report.