3 Site Photos



Site tree-felling and localised mulching. Felling completed and tree base and roots left in situ.



Site tree-felling and localised mulching and briar clearance. Felling completed and tree base and roots

left in situ.



Site tree-felling and localised mulching.



Stacked trees from felling operations



Development of a site perimeter and works area.



Mulching and stacking felled trees. Mulching over an area marked as Japanese Knotweed.



Stacking of wood locally in suitable locations



Dense ivy-covered trees shaken and then left for 24 hours (best practice in case bats present).



Felling completed aloong a riparian area. No felling into the watercourse occurred. The watercourse was protected from works activity and no pollution arising from silt or hydrocarbons occurred during works.



Glashaboy FRS - Site Clearance Checklists (February) 2022

For: Arup

FFEC Ecologists on Site: Usna Keating and Simon Furney

Date: 15/03/2022

This document compiles a checklist and summary of ecological monitoring during initial clearance, for the Glashaboy Flood Relief Scheme. This checklist was filled in following its development to summarise ecological monitoring during the initial clearance phase (February 2022). Ecological monitoring was also undertaken prior to to this checklist being developed.

This report can be read in conjunction with the summary report of ecological supervision and ecological considerations and communications for this clearance phase of works, which was compiled by Flynn Furney Environmental Consultants. Photos are presented in this document to provide a context for supervision and works activities.

Site Photos



Site tree-felling and localised mulching. Felling completed and tree base and roots left in situ.



Site tree-felling and localised mulching.



Mulching and stacking felled trees. Mulching over an area marked as Japanese Knotweed.



Stacking of wood locally in suitable locations



Dense ivy-covered trees shaken and then left for 24 hours (best practice in case bats present).



Felling completed aloong a riparian area. No felling into the watercourse occurred. The watercourse was protected from works activity and no pollution arising from silt or hydrocarbons occurred during works.



Area	3	000	Scone	11 GROUP	Date	9/2/22
Ecologist	Si	may Fi	RNFZY			

Item	Checks	Comment
Trees	Arborist Maps checked?	
Knotweed	Present?	
	04	
	Marked?	
	Measures?	
	-	
Other Invasive	Present?	Bubblea, Clematis vitalba.
Plant Spp.	Yes	Pontal at to Arborist.
	Special Measures?	Buttles, Clenatis vitalba. Pontal at to Arborist. Avoid.
Bats	Trees with bat potential?	
	Surveyed by Bat Specialist?	
	Trees to be felled & left for 24 hours?	
Otters	Holt Present?	
	Otter Specialist onsite?	
Birds	Nesting Activity?	



Other Comments Area of bare earth to be boded to prevent what its stream.



Area	rea 2. (sally	brook - shopping centre) Date Feb. 10th 2022		
Ecologist	Usna Kealing.	- Simon Furney		
Item	Checks	Comment		
Trees	Arborist Maps checked?	Maps checked-discussed maps with whonst.		
Knotweed	Present?	Yes		
	Marked?	Identified location with arboirst.		
	Measures?	Multh to be placed over JKW area where tracking required- & avoidance.		
Other Invasive Plant Spp.	Present?	Yes. Winter heliotope. Requested arbonst to mulch over area if tradicing over area was required. Avoidance also agreed		
	Special Measures?	Avoid - showed areas to arburist.		
Bats	Trees with bat potential?	But survey conducted on 9th Feb (evening).		
	Surveyed by Bat Specialist?	Yes - Bat Eco services 28 FFEC		
	Trees to be felled & left for 24 hours?	Yes		
Otters	Holt Present?	(upsterm - yes)		
	Otter Specialist onsite?	Otter specialist notfield of states of works. Works not within 30m of holt.		
Birds	Nesting Activity?	No To No		



Area	trea 2 - Sally	brook Date
Ecologist	9	Ing (morn), Simon & Usna (afternoon)
Item	Checks	Comment
Trees	Arborist Maps	
	checked?	Yes - checked w/ arborst
Knotweed	Present?	Tes
	Marked?	No - shaved area to orboast
	Measures?	Cover w/ mulch & track over. Avoid where possible. Blow trades & sweep ofter being in
Other Invasive Plant Spp.	Present?	No (showed locations of winter heliotrope during previous day).
	Special Measures?	- Avoid
Bats	Trees with bat potential?	Yes
	Surveyed by Bat Specialist?	Yes - during prenous survey
	Trees to be felled & left for 24 hours?	Yes - these were shown to the arborst
Otters	Holt Present?	More my covered trees left for 24 how
	Otter Specialist onsite?	NA
irds	Nesting Activity?	No



Ecologist		work (U/s of bridge Date 14/02/22
	bra Keating	2
	0	
Item	Checks	Comment
Trees	Arborist Maps checked?	Yes- checked w/ arbonst
Knotweed	Present?	Yes
	Marked?	None identified - should maps to arborst & highlighted areas of jicu
	Measures?	to arborist. Avoidance, mulch over, avoid rutting
Other Invasive Plant Spp.	Present?	ground. Tracks were washed after being in this area. Yes - Cleman, vitalba, writer hediobrop
	Special Measures?	possible - remove clematis from any press to be removed from site.
Bats	Trees with bat potential?	Yes
	Surveyed by Bat Specialist?	Yes - during previous meek trees felled and left over weekend. Trees sum ecologist & left for 24 hours including dead mee & other ing covered mee.
	Trees to be felled & left for 24 hours?	dead thee & other ing covered thee. Yes
Otters	Holt Present?	Yes - Marked both holts
	Otter Specialist onsite?	Yes- Retained cover vegetation over marked holts of delivered materials (
Birds	Nesting Activity?	Marked holts & delivered materials (send) to and site of artificial holt. No



t	Area 1 - sh	uet 2,		15/2/22
Ecologist	Isna Keathin	<i>b</i>		
0		J		
Item	Checks	Comment		
Trees	Arborist Maps checked?	Yes - went over maps	w/ ar	burist.
Knotweed	Present?	Yes - marked on map-	no othe	r areas seen.
	Marked?	Yes - marked w/ con	es S	corres used
	Measures?	to inform crew of Mulch used locally digger tracking was d Avoidance everywhere e	where to oc	large
Other Invasive Plant Spp.	Present?	Yes - winter hehotrope		
	Special Measures?	Avoidance - showed a show to identify		this species
Bats	Trees with bat potential?	Yes		
	Surveyed by Bat Specialist?	Yes - wy converd & left for	hrees 24 h	to be felled
	Trees to be felled & left for 24 hours?	Mes (see above)		
Otters	Holt Present?	Yes		
	Otter Specialist onsite?	Yes - Belled away for (Holf on opposition	requested	I trees he - this was f
Birds	Nesting Activity?	No (Holt on opposi	te Bari	k)



AS

Other Comments

Materials were delivered by other specialist to arbficial holt. Help was provided to skick I deliver materials.

Area	al-sheet 3	of 5 Date 16/2/22
Ecologist	has ket .	
V	bra keating	
Item	Checks	Comment
Trees	Arborist Maps checked?	Yes- clarified clearance area w/
		arborist crew (numerous trees
Knotweed	Present?	wound Sallybrook House to be retain
	Marked?	NA
	Measures?	
		NA
Other Invasive Plant Spp.	Present?	Yes - winter helvotrope
	Special Measures?	- Mulch over winter heliohope where possible & track over wulch. In some
3ats	Trees with bat potential?	areas; this was not possible - regrested machine tracks to be cleaned over barts multiple going to next site: Yes
	Surveyed by Bat Specialist?	Yes
	Trees to be felled & left for 24 hours?	Yes - requested these be placed to allow any bats escape if applicable. Arborist huised with bat ecologist in this regard.
Otters	Holt Present?	No
	Otter Specialist onsite?	NA
irds	Nesting Activity?	NA.



Area	Area 1 - isheet 3 of 5) Date 17/02/22			
Ecologist	na Keatu	7		
	1	<u> </u>		
Item	Checks	Comment		
Trees	Arborist Maps checked?	Yes- checked maps w/ arborist. (some additional Trees exist on bank 8 are required to be removed-not map		
Knotweed	Present?	No		
	Marked?			
		NA		
	Measures?			
Other Invasive Plant Spp.	Present?	NA Yes-winter helistrope		
	Special Measures?	No tracking over these species. Local use of mulch to cover some of these areas		
Bats	Trees with bat potential?	Yes. Also-large sweet chestrut		
	Surveyed by Bat Specialist?	& Bus Leylandi to be removed (survey Yes (dusk & dawn)		
	Trees to be felled & left for 24 hours?	Yes.		
Otters	Holt Present?	No		
	Otter Specialist onsite?	NA		
Birds	Nesting Activity?	No		

111



Other Comments

works d/s of Sallybrook House are occurring along bank with no martine access. Therefore meas herry cut by hand I lifted. Lack of warder prevents spread of winter heliotropue. Multh being used to suppress plant growth.

Numerous young and immahure / scini-mature willow not supped but require removal as are present within clearance zone.

ing covered trees left for 24 hours

Appendix N

Water Quality Sampling Results (January – June 2023)

N.1 January 2023: Batch No. 23-25808



Report No. 23-25808

Rev 0

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Certificate of Analysis

Customer:	Cork City Council	Project:	Glashaboy River Drainage Scheme
Address:	Water Services, Environment,	Site	
	Cork City Council, City Hall,Cork	Date Received:	26/01/2023
		Condition of Sample:	
Report to:	Roslyn McCarthy	Date Analysed:	26/01/2023 - 28/01/2023
Customer PO		Issue Date:	09/02/2023
Quote No.		BATCH NUMBER:	23-25808

Conon Murphy

Conor Murphy Operations Manager

Index to symbols used & Notes

*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
***	Customer specific limits
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LÓQ	Parameter Limit of Quantification
Note 6	Subcontracted Parameter.

Notes

- The results relate only to the items tested.
- Opinions and interpretations expressed herein are outside the scope of INAB accreditation.
- The analysis report shall not be reproduced except in full without written approval of the laboratory.
- Sampling is outside the scope of the laboratory activities.

Notes for Drinking Water samples

Note A	The water should not be aggressive
Note B	Compliance must be ensured with the conditions that [NO3]/50 + [NO2]/3 =1
Note C	Acceptable to customers and no abnormal change
Note D	In the case of surface water treatment, a parametric value not exceeding 1 NTU in the water ex treatment works must be strived for
Note F	Fluoridated supplies 0.8 mg/L; Natural supplies 1.5 mg/L.

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Customer Sar	mple F	Ref: Sallybrook	Customer Sample	e Code:		
Project: Glashaboy Rive		Glashaboy River Drainage Schem	Drainage Scheme Sampled By:		DOL	
Our Reference	e:	83048 (23-25808)	8 (23-25808) Sample Matrix:		Surface Water	
Date Sampled	Date Sampled: 26/01/202		3 Time Sampled:		10:50	
Method:		Parameter:	Units	LOQ	Result	
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.10	
SEP 007	*	Temperature	°C		8.90	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8	
SCP 052		Conductivity	μS/cm @ 20 ℃	15	296	
SCP 010		Suspended Solids	mg/L	2	5	
SCP 027A		Total Ammonia	mg/L N	0.02	0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.02	
SCP 058/058B		Turbidity	NTU	0.20	1.01	

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Customer Sample Ref: River Glashaboy (Sally Brook Brid		Ily Brook Bridge) Customer Sa	ample Code:		
Project:		Glashaboy River Dr	ainage Scheme Sampled By:		DOL
Our Reference	e:	83049 (23-	25808) Sample Matr	ix:	Surface Water
Date Sampled	d:	26/01/2023	3 Time Sample	ed:	11:20
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.20
SEP 007	*	Temperature	Ĵ		8.70
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.7
SCP 052		Conductivity	μS/cm @ 20 ℃	15	223
SCP 010		Suspended Solids	mg/L	2	10
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.04
SCP 058/058B		Turbidity	NTU	0.20	0.85

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Customer Sample Ref: Trib. Glashaboy (Knocknahorga		(Knocknahorgan) Customer Sa	imple Code:		
Project:		Glashaboy River	Drainage Scheme Sampled By:		DOL
Our Reference	ce:	83050 (2	23-25808) Sample Matr	ix:	Surface Water
Date Sample	d:	26/01/20	23 Time Sample	ed:	11:35
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.05
SEP 007	*	Temperature	C		8.50
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9
SCP 052		Conductivity	μS/cm @ 20 ℃	15	305
SCP 010		Suspended Solids	mg/L	2	< 2
SCP 027A		Total Ammonia	mg/L N	0.02	0.07
SCP 027C		Orthophosphate	mg/L P	0.01	0.08
SCP 058/058B		Turbidity	NTU	0.20	0.41

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Customer Sample Ref: Trib. Glashaboy (Brooklood Project: Glashaboy River Drainage S		Ref: Trib. Glashaboy (Bro	oklodge) Customer Sam	ple Code:	
		ge Scheme Sampled By:		DOL	
Our Reference	e:	83051 (23-2580	Sample Matrix:		Surface Water
Date Sampled	l:	26/01/2023	Time Sampled:		11:50
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.11
SEP 007	*	Temperature	\Im		8.50
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8
SCP 052		Conductivity	µS/cm @ 20 ℃	15	233
SCP 010		Suspended Solids	mg/L	2	< 2
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.02
SCP 058/058B		Turbidity	NTU	0.20	1.13

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Customer Sar	mple R	ef: Trib. Glashaboy (Ballinag	Ilanna) Customer Samp	ole Code:	
Project:		Glashaboy River Drainage	Scheme Sampled By:		DOL
Our Reference	e:	83052 (23-25808)	Sample Matrix:		Surface Water
Date Sampled	1:	26/01/2023	Time Sampled:		12:10
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.21
SEP 007	*	Temperature	℃		9.10
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8
SCP 052		Conductivity		15	233
SCP 010		Suspended Solids	mg/L	2	4
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.02
SCP 058/058B		Turbidity	NTU	0.20	1.08

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Customer Sar	mple F	tef: Trib. Glasgaboy (Mea	dowbrook) Customer Sam	ple Code:	
Project:		Glashaboy River Draina	age Scheme Sampled By:		DOL
Our Reference	e:	83053 (23-258	08) Sample Matrix:		Surface Water
Date Sampled	1:	26/01/2023	Time Sampled:		12:40
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.09
SEP 007	*	Temperature	°C		8.70
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.7
SCP 052		Conductivity	μS/cm @ 20 ℃	15	229
SCP 010		Suspended Solids	mg/L	2	3
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.03
SCP 058/058B		Turbidity	NTU	0.20	0.88

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Customer Sa	mple F	Ref: Glasgaboy River (C	ilanmire) Customer Samp	le Code:	
Project:		Glashaboy River Drain	age Scheme Sampled By:		DOL
Our Referenc	e:	83054 (23-258	08) Sample Matrix:		Surface Water
Date Sampled	d:	26/01/2023	Time Sampled:		13:00
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.22
SEP 007	*	Temperature	\Im		8.80
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8
SCP 052		Conductivity	μS/cm @ 20 ℃	15	233
SCP 010		Suspended Solids	mg/L	2	6
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.02
SCP 058/058B		Turbidity	NTU	0.20	1.27

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Customer Sar	mple F	Ref: Glashaboy Rive	r (Dunkettle) Customer Sa	imple Code:	
Project:		Glashaboy River D	rainage Scheme Sampled By:		DOL
Our Reference	e:	83055 (23	25808) Sample Matr	ix:	Surface Water
Date Sampled	J:	26/01/2023	3 Time Sample	ed:	10:50
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.03
SEP 007	*	Temperature	C		9.00
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8
SCP 052		Conductivity	μS/cm @ 20 ℃	15	253
SCP 010		Suspended Solids	mg/L	2	6
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.03
SCP 058/058B		Turbidity	NTU	0.20	1.59

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N.2 February 2023: Batch No. 23-26489



Report No. 23-26489

Rev 0

Page 1 of 9

Certificate of Analysis

Customer:	Cork City Council	Site/Project:	Glashaboy River Drainage Scheme	
		Date Received:	27/02/2023	
Local Authority:	Cork City Council, City Hall, Anglesea Street, Cork	Condition of Sample(s):		
Customer Contact:	Roslyn McCarthy	Date Analysed:	27/02/2023 - 01/03/2023	
Customer PO		Issue Date:	15/03/2023	
Quote No.		BATCH NUMBER:	23-26489	

duth hurphy

Ruth Murphy Chemistry Laboratory Manager

Index to symbols used:

*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
***	S.I. No. 122 of 2014 - European Union (Drinking Water) Regulations 2014 & 2017.
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LÓD	Parameter Limit of Quantification

Notes

Note A	The water should not be aggressive.
Note C	Acceptable to customers and no abnormal change.
Note D	In the case of surface water treatment, a parametric value not exceeding 1 NTU in the
	water ex treatment works must be strived for.
Note E	Irish water parametric limit for TVC is <100 cfu/mL.
Note F	Fluoridated supplies 0.8 mg/L; Natural supplies 1.5 mg/L.
Note 6	Subcontracted Parameter.

- The results relate only to the items tested.
- Opinions and interpretations expressed herein are outside the scope of INAB accreditation.
- The analysis report shall not be reproduced except in full without written approval of the laboratory.
- Sampling is outside the scope of the laboratory activities.

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Rev 0

23-26489

Report No.

Customer Sample Ref: Sallybrook **Customer Sample Code:** Sample Condition: Entity Name: **Entity Code:** Danny O Leary SSS Ltd Site / Project: Sampled By: Our Reference: 85077 (23-26489) -Sample Matrix: Surface Water **Date Sampled:** 27/02/2023 **Time Sampled:** 11:00 Method: Parameter: Units LOQ ***Limits Result Onsite Measurements: Dissolved Oxygen mg/L 0.10 10.20 SEP 007 Temperature °C 8.70 Clear Visual Chemical Analysis: (F) SCP 052 pH units Hydrogen Ion (pH) 4.0 7.9 SCP 052 Conductivity µS/cm @ 20 ℃ 15 295 SCP 010 Suspended Solids 2 3 mg/L **SCP 027A** Total Ammonia mg/L N 0.02 0.03 SCP 027C mg/L P 0.01 0.03 Orthophosphate SCP 058/058B NTU 0.20 0.42 Note C & D Turbidity

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directors: K. Murphy, M. Murphy & C. Murphy registered in ireland no 323196 | vat reg no IE 6343196 M



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Report No.	23-264	489 Rev 0				Page 3 o
Customer Sar	nple F	Ref: River Glashaboy (Sally	Brook Bridge) Custom	er Sample Code:		
			Sample	Condition:		
Entity Name:				ode:		
Site / Project:				d By:	Danny O	Leary SSS Ltd
Our Reference: 85078 (23-26489) -			89) - Sample	Matrix:	Surfa	ace Water
Date Sampled: 27/02/2023		3 Time Sa	Time Sampled:		11:15	
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.50	
SEP 007	*	Temperature	°C		7.30	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	µS/cm @ 20 ℃	15	229	
SCP 010		Suspended Solids	mg/L	2	2	
SCP 027A		Total Ammonia	mg/L N	0.02	0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.04	
SCP 058/058B		Turbidity	NTU	0.20	0.57	Note C & D

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Customer San	nple l	Ref: Trib. Glashaboy (Knock	nahorgan) (Customer Sample Code:	:	
			S	Sample Condition:		
Entity Name:				Entity Code:		
Site / Project:			Sampled By:	Danny O	Leary SSS Ltd	
Our Reference: 85079 (23-26489) - Date Sampled: 27/02/2023		9) -	Sample Matrix:	Surfa	ace Water	
		г	ime Sampled:		11:30	
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.30	
SEP 007	*	Temperature	°C		8.40	
	*	Visual <u>Chemical Analysis: (F)</u>			Clear	
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	μS/cm @		329	
SCP 010		Suspended Solids	mg/L	2	< 2	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.08	
SCP 058/058B		Turbidity	NTU	0.20	0.69	Note C & D

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Customer San	nple F	Ref: Trib. Glashaboy (Bro	ooklodge) C	ustomer Sample Code:			
			s	ample Condition:			
Site / Project:			E	Entity Code:			
			s	ampled By:	Danny O	Danny O Leary SSS Ltd	
			39) - S) - Sample Matrix: Time Sampled:		Surface Water 11:45	
Date Sampled: 27/02/2023		т					
Method:		Parameter:	Units	LOQ	Result	***Limits	
		Onsite Measurements:					
	*	Dissolved Oxygen	mg/L	0.10	10.20		
SEP 007	*	Temperature	°C		7.20		
	*	Visual Chemical Analysis: (F)			Clear		
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0		
SCP 052		Conductivity	μS/cm @	20 ℃ 15	243		
SCP 010		Suspended Solids	mg/L	2	3		
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02		
SCP 027C		Orthophosphate	mg/L P	0.01	0.02		
SCP 058/058B		Turbidity	NTU	0.20	0.74	Note C & D	

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Customer Sar	nple	Ref: Trib. Glashaboy (Ball	inaglanna)	Customer Sample Code:			
				Sample Condition:			
Entity Name:				Entity Code:			
Site / Project: Our Reference: 85081 (23-26489) -			Sampled By:	Danny O	Danny O Leary SSS Ltd		
			89) -	Sample Matrix:	Surfa	Surface Water	
Date Sampled: 27/02/2023		5	Time Sampled:		12:10		
Method:		Parameter:	Units	LOQ	Result	***Limits	
		Onsite Measurements:					
	*	Dissolved Oxygen	mg/L	0.10	9.98		
SEP 007	*	Temperature	ິ		7.70		
	*	Visual			Clear		
		Chemical Analysis: (F)					
SCP 052		Hydrogen Ion (pH)	pH unit	s 4.0	8.0		
SCP 052		Conductivity	μS/cm	@ 20 ℃ 15	244		
SCP 010		Suspended Solids	mg/L	2	3		
SCP 027A		Total Ammonia	mg/L N	0.02	0.02		
SCP 027C		Orthophosphate	mg/L P	0.01	0.02		
SCP 058/058B		Turbidity	NTU	0.20	0.93	Note C & D	

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Customer San	nple I	Ref: Trib. Glasgaboy (Mead	lowbrook) Custom	er Sample Code:		
			Sample	Condition:		
Entity Name:			Entity C	ode:		
Site / Project: Our Reference: 85082 (23-26489) -			Sample	d By:	Danny O Leary SSS Ltd	
			9) - Sample	- Sample Matrix:		Surface Water
Date Sampled: 27/02/2023		Time Sampled:		12:30		
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.90	
SEP 007	*	Temperature	°C		7.50	
	*	Visual Chemical Analysis: (F)			Clear	
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	µS/cm @ 20 ℃	15	234	
SCP 010		Suspended Solids	mg/L	2	< 2	
SCP 027A		Total Ammonia	mg/L N	0.02	0.03	
SCP 027C		Orthophosphate	mg/L P	0.01	0.21	
SCP 058/058B		Turbidity	NTU	0.20	0.57	Note C & D

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Customer San	nple F	Ref: Glasgaboy River (C	Glanmire) Custom	er Sample Code:			
			Sample	Condition:			
Entity Name: Site / Project: Our Reference: 85083 (23-26489) -			Entity C	Entity Code:			
			Sample	d By:	Danny O Leary SSS Ltd		
			89) - Sample	Sample Matrix: Time Sampled:		Surface Water 12:40	
Date Sampled: 27/02/2023		3 Time Sa					
Method:		Parameter:	Units	LOQ	Result	***Limits	
		Onsite Measurements:					
	*	Dissolved Oxygen	mg/L	0.10	10.10		
SEP 007	*	Temperature	°C		7.90		
	*	Visual			Clear		
		Chemical Analysis: (F)					
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9		
SCP 052		Conductivity	µS/cm @ 20 ℃	15	242		
SCP 010		Suspended Solids	mg/L	2	< 2		
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02		
SCP 027C		Orthophosphate	mg/L P	0.01	0.03		
SCP 058/058B		Turbidity	NTU	0.20	0.86	Note C & D	

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Report No.	23-26	489 Rev 0				Page 9 c
Customer San	nple F	Ref: Glashaboy River (D	unkettle) Custom	er Sample Code:		
			Sample	Condition:		
Entity Name:			Entity C	ode:		
Site / Project:			Sample	d By:	Danny O	Leary SSS Ltd
Our Reference	: :	85084 (23-264	89) - Sample	Matrix:	Surface Water	
Date Sampled	:	27/02/2023	Time Sa	Time Sampled:		13:00
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.20	
SEP 007	*	Temperature	°C		8.10	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9	
SCP 052		Conductivity	µS/cm @ 20 ℃	15	5620	
SCP 010		Suspended Solids	mg/L	2	7	
SCP 027A		Total Ammonia	mg/L N	0.02	0.03	
SCP 027C		Orthophosphate	mg/L P	0.01	0.03	
SCP 058/058B		Turbidity	NTU	0.20	1.80	Note C & D

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N.3 March 2023: Batch No. 23-27277



Report No. 23-27277

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Certificate of Analysis

Customer:	Cork City Council	Site/Project:	Glashaboy River Drainage Scheme	
		Date Received:	30/03/2023	
Local Authority:	Cork City Council, City Hall, Anglesea Street, Cork	Condition of Sample(s):	Satisfactory	
Customer Contact:	Roslyn McCarthy	Date Analysed:	30/03/2023 - 11/04/2023	
Customer PO		Issue Date:	14/04/2023	
Quote No.		BATCH NUMBER:	23-27277	

Loretta Corcoran Chief Scientific Officer

Index to symbols used:

*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
***	S.I. No. 122 of 2014 - European Union (Drinking Water) Regulations 2014 & 2017.
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LÓD	Parameter Limit of Quantification

Notes

Note A	The water should not be aggressive.
Note C	Acceptable to customers and no abnormal change.
Note D	In the case of surface water treatment, a parametric value not exceeding 1 NTU in the
	water ex treatment works must be strived for.
Note E	Irish water parametric limit for TVC is <100 cfu/mL.
Note F	Fluoridated supplies 0.8 mg/L; Natural supplies 1.5 mg/L.
Note 6	Subcontracted Parameter.

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Rev 0

23-27277

Report No.

Customer Sample Ref: Sallybrook **Customer Sample Code:** Sample Condition: Satisfactory Entity Name: **Entity Code:** Danny O Leary SSS Ltd Site / Project: Sampled By: Surface Water Our Reference: 87414 (23-27277) -Sample Matrix: **Date Sampled:** 30/03/2023 **Time Sampled:** 08:00 Method: Parameter: Units LOQ ***Limits Result Onsite Measurements: Dissolved Oxygen mg/L 0.10 10.30 SEP 007 Temperature °C 9.50 Clear Visual Chemical Analysis: (F) SCP 052 pH units Hydrogen Ion (pH) 4.0 7.9 SCP 052 Conductivity µS/cm @ 20 ℃ 15 286 SCP 010 Suspended Solids 2 < 4 mg/L **SCP 027A** Total Ammonia mg/L N 0.02 < 0.02 SCP 027C mg/L P 0.01 0.01 Orthophosphate SCP 058/058B NTU 0.20 1.49 Note C & D Turbidity

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Report No.	23-272	277 Rev 0				Page 3 c	
Customer San	nple F	Ref: River Glashaboy (Sally E	Brook Bridge) Cu	stomer Sample Code:			
			Sa	mple Condition:	Sat	isfactory	
Entity Name:			En	tity Code:			
Site / Project:			Sa	mpled By:	Danny O	Leary SSS Ltd	
Our Reference	e:	87415 (23-2727	77) - Sa	mple Matrix:	Surf	ace Water	
Date Sampled	:	30/03/2023	Tir	Time Sampled:		08:30	
Method:		Parameter:	Units	LOQ	Result	***Limits	
		Onsite Measurements:					
	*	Dissolved Oxygen	mg/L	0.10	9.50		
SEP 007	*	Temperature	°C		8.90		
	*	Visual <u>Chemical Analysis: (F)</u>			Clear		
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.7		
SCP 052		Conductivity	μS/cm @	20 ℃ 15	208		
SCP 010		Suspended Solids	mg/L	2	7		
SCP 027A		Total Ammonia	mg/L N	0.02	0.04		
SCP 027C		Orthophosphate	mg/L P	0.01	0.04		
SCP 058/058B		Turbidity	NTU	0.20	2.62	Note C & D	

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Customer San	nple F	Ref: Trib. Glashaboy (Kno	cknahorgan) Cus	stomer Sample Code:		
			San	nple Condition:	Sat	isfactory
Entity Name:			Ent	ity Code:		
Site / Project:			San	npled By:	Danny O	Leary SSS Ltd
Our Reference	e:	87416 (23-272	277) - San			ace Water
Date Sampled: 30/03/202				08:40		
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.11	
SEP 007	*	Temperature	°C		9.20	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8	
SCP 052		Conductivity	μS/cm @ 2	20 °C 15	279	
SCP 010		Suspended Solids	mg/L	2	6	
SCP 027A		Total Ammonia	mg/L N	0.02	0.04	
SCP 027C		Orthophosphate	mg/L P	0.01	< 0.01	
SCP 058/058B		Turbidity	NTU	0.20	3.06	Note C & D

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Customer San	nple F	Ref: Trib. Glashaboy (Br	rooklodge) Custome	er Sample Code:		
			Sample 0	Condition:	Sati	sfactory
Entity Name:			Entity Co	ode:		
Site / Project:			Sampled	By:	Danny O I	Leary SSS Ltd
Our Reference	e:	87417 (23-272	277) - Sample M	Sample Matrix:		ace Water
Date Sampled	:	30/03/202	3 Time Sar	mpled:	(08:50
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	1023.00	
SEP 007	*	Temperature	°C		9.40	
	*	Visual <u>Chemical Analysis: (F)</u>			Clear	
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8	
SCP 052		Conductivity	μS/cm @ 20 ℃	15	217	
SCP 010		Suspended Solids	mg/L	2	23	
SCP 027A		Total Ammonia	mg/L N	0.02	0.05	
SCP 027C		Orthophosphate	mg/L P	0.01	0.06	
SCP 058/058B		Turbidity	NTU	0.20	5.32	Note C & D

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Customer Sar	nple l	Ref: Trib. Glashaboy (Ball	inaglanna)	Customer Sample Cod	e:	
				Sample Condition:	Sa	atisfactory
Entity Name:				Entity Code:		
Site / Project:				Sampled By:	Danny C	Leary SSS Ltd
Our Reference	e:	87418 (23-272)	77) -	Sample Matrix:	Sur	face Water
Date Sampled	l:	30/03/2023	1	Time Sampled:		09:00
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.01	
SEP 007	*	Temperature	°C		9.40	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH uni	ts 4.0	7.8	
SCP 052		Conductivity		@ 20 °C 15	217	
SCP 010		Suspended Solids	mg/L	2	9	
SCP 027A		Total Ammonia	mg/L N	0.02	0.03	
SCP 027C		Orthophosphate	mg/L F	0.01	0.01	
SCP 058/058B		Turbidity	NTU	0.20	4.95	Note C & D

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Customer Sar	mple F	Ref: Trib. Glasgaboy (Me	adowbrook) Custom	er Sample Code:		
			Sample	Condition:	Sat	isfactory
Entity Name:			Entity C	ode:		
Site / Project:			Sampleo	l By:	Danny O	Leary SSS Ltd
Our Reference	e:	87419 (23-272	Sample			ace Water
Date Sampled: 30/03/2023		Time Sampled:		09:10		
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.15	
SEP 007	*	Temperature	°C		9.00	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.7	
SCP 052		Conductivity	µS/cm @ 20 ℃	15	211	
SCP 010		Suspended Solids	mg/L	2	10	
SCP 027A		Total Ammonia	mg/L N	0.02	0.04	
SCP 027C		Orthophosphate	mg/L P	0.01	0.05	
SCP 058/058B		Turbidity	NTU	0.20	2.96	Note C & D

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Report No.	23-272	277 Rev 0				Page 8 of
Customer Sar	nple F	Ref: Glasgaboy	River (Glanmire)	Customer Sample Cod	е:	
				Sample Condition:	S	atisfactory
Entity Name:				Entity Code:		
Site / Project:				Sampled By:	Danny (D Leary SSS Ltd
Our Reference	e:	87420	(23-27277) -	Sample Matrix:	Su	face Water
Date Sampled	l:	30	/03/2023	Time Sampled:		09:20
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.99	
SEP 007	*	Temperature	C		9.30	
	*	Visual Chemical Analysis: (F)			Clear	
SCP 052		Hydrogen Ion (pH)	pH uni	ts 4.0	7.9	
SCP 052		Conductivity	μS/cm	@ 20 ℃ 15	214	
SCP 010		Suspended Solids	mg/L	2	10	
SCP 027A		Total Ammonia	mg/L f	N 0.02	0.04	
SCP 027C		Orthophosphate	mg/L l	0.01	0.03	
SCP 058/058B		Turbidity	NTU	0.20	5.36	Note C & D

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Customer San	nple l	Ref: Glashaboy River (Dun	kettle)	Customer Sample Co	de:	
				Sample Condition:		Satisfactory
Entity Name:				Entity Code:		
Site / Project:				Sampled By:	Dann	ny O Leary SSS Ltd
Our Reference	: :	87421 (23-27277)) -	Sample Matrix:	:	Surface Water
Date Sampled	:	30/03/2023		Time Sampled:		09:30
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.12	
SEP 007	*	Temperature	°C		9.10	
	*	Visual Chemical Analysis: (F)			Clear	
SCP 052		Hydrogen Ion (pH)	pH uni	ts 4.0	7.8	
SCP 052		Conductivity	•	@ 20 ℃ 15	223	
SCP 010		Suspended Solids	mg/L	2	33	
SCP 027A		Total Ammonia	mg/L N	N 0.02	0.04	
SCP 027C		Orthophosphate	mg/L F		0.03	
SCP 058/058B		Turbidity	NTU	0.20	6.02	Note C & D

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N.4 April 2023: Batch No. 23-27967



Report No. 23-27967

Rev 0

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Certificate of Analysis

Customer:	Cork City Council	Site/Project:	Glashaboy River Drainage Scheme	
		Date Received:	27/04/2023	
Local Authority:	Cork City Council, City Hall, Anglesea Street, Cork	Condition of Sample(s):	Satisfactory	
Customer Contact:	Roslyn McCarthy	Date Analysed:	27/04/2023 - 08/05/2023	
Customer PO		Issue Date:	12/05/2023	
Quote No.		BATCH NUMBER:	23-27967	

Conon Murphy

Conor Murphy Operations Manager

Index to symbols used:

*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
***	S.I. No. 122 of 2014 and S.I No. 99 of 2023 - European Union (Drinking Water) Regulations 2014, 2017 and 2023
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LOD	Parameter Limit of Quantification

Notes

Note A	The water should not be aggressive.
Note C	Acceptable to customers and no abnormal change.
Note D	In the case of surface water treatment, a parametric value not exceeding 1 NTU in the
	water ex treatment works must be strived for.
Note E	Irish water parametric limit for TVC is <100 cfu/mL.
Note F	Fluoridated supplies 0.8 mg/L; Natural supplies 1.5 mg/L.
Note 6	Subcontracted Parameter.

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- Sampling is outside the scope of the laboratory activities.

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Rev 0

23-27967

Report No.

Customer Sample Ref: Sallybrook		C	Customer Sa	mple Code:				
				5	Sample Conc	dition:	Sat	isfactory
Entity Name:				E	Entity Code:			
Site / Project:				5	Sampled By:		Danny O	Leary SSS Ltd
Our Reference	: :		89576 (23-27967) -	5	Sample Matri	ix:	Surfa	ace Water
Date Sampled:			27/04/2023		ime Sample	d:	09:00	
Method:		Parameter:		Units		LOQ	Result	***Limits
		Onsite Measurements:						
	*	Dissolved Oxygen		mg/L		0.10	10.12	
SEP 007	*	Temperature		°C			9.80	
	*	Visual <u>Chemical Analysis: (F)</u>					Clear	
SCP 052		Hydrogen Ion (pH)		pH units		4.0	8.0	
SCP 052		Conductivity		μS/cm @	⊉ 20 ℃	15	293	
SCP 010		Suspended Solids		mg/L		2	5	
SCP 027A		Total Ammonia		mg/L N		0.02	0.02	
SCP 027C		Orthophosphate		mg/L P		0.01	< 0.01	
SCP 058/058B		Turbidity		NTU		0.20	0.93	Note C & I

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directors: K. Murphy, M. Murphy & C. Murphy registered in ireland no 323196 | vat reg no IE 6343196 M



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Customer Sar	mple l	Ref: River Glashaboy (Sally B	rook Bridge)	Customer Sample Co	de:	
				Sample Condition:		Satisfactory
Entity Name:				Entity Code:		
Site / Project:				Sampled By:	Dann	ny O Leary SSS Ltd
Our Reference	e:	89577 (23-2796)	7) -	Sample Matrix:	:	Surface Water
Date Sampled	:	27/04/2023		Time Sampled:		09:15
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.70	
SEP 007	*	Temperature	°C		10.10	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH uni	its 4.0	7.9	
SCP 052		Conductivity	•	@ 20 ℃ 15	224	
SCP 010		Suspended Solids	mg/L	2	< 2	
SCP 027A		Total Ammonia	mg/L N	N 0.02	0.04	
SCP 027C		Orthophosphate	mg/L F	0.01	0.04	
SCP 058/058B		Turbidity	NTU	0.20	0.92	Note C & D

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Customer San	nple I	Ref: Trib. Glashaboy (Knock	(nahorgan) C	ustomer Sample Code:		
			s	ample Condition:	Sat	isfactory
Entity Name:			E	intity Code:		
Site / Project:			s	ampled By:	Danny O	Leary SSS Ltd
Our Reference	: :	89578 (23-2796	7) - S	ample Matrix:	Surfa	ace Water
Date Sampled	:	27/04/2023	т	ïme Sampled:		09:30
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.00	
SEP 007	*	Temperature	°C		10.10	
	*	Visual <u>Chemical Analysis: (F)</u>			Clear	
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	µS/cm @		316	
SCP 010		Suspended Solids	mg/L	2	3	
SCP 027A		Total Ammonia	mg/L N	0.02	0.04	
SCP 027C		Orthophosphate	mg/L P	0.01	0.03	
SCP 058/058B		Turbidity	NTU	0.20	0.80	Note C & D

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Customer Sar	nple F	Ref: Trib. Glashaboy (Br	ooklodge) C	ustomer Sample Cod	e:	
			s	ample Condition:	Si	atisfactory
Entity Name:			E	ntity Code:		
Site / Project:			s	ampled By:	Danny (D Leary SSS Ltd
Our Reference	e:	89579 (23-279	67) - S	ample Matrix:	Su	face Water
Date Sampled	l:	27/04/2023	3 T	ime Sampled:		09:45
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.22	
SEP 007	*	Temperature	°C		9.90	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	μS/cm @		236	
SCP 010		Suspended Solids	mg/L	2	4	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	< 0.01	
SCP 058/058B		Turbidity	NTU	0.20	1.10	Note C & D

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Customer Sar	nple	Ref: Trib. Glashaboy (Ballin	aglanna)	Customer Sample Code	9:	
				Sample Condition:	Sa	tisfactory
Entity Name:				Entity Code:		
Site / Project:				Sampled By:	Danny O	Leary SSS Ltd
Our Reference	e:	89580 (23-27967	') -	Sample Matrix:	Surf	ace Water
Date Sampled	l:	27/04/2023		Time Sampled:		10:00
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.08	
SEP 007	*	Temperature	°C		10.40	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH unit	ts 4.0	7.9	
SCP 052		Conductivity	•	@ 20 ℃ 15	236	
SCP 010		Suspended Solids	mg/L	2	14	
SCP 027A		Total Ammonia	mg/L N	0.02	0.03	
SCP 027C		Orthophosphate	mg/L P		< 0.01	
SCP 058/058B		Turbidity	NTU	0.20	1.11	Note C & D

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Customer Sar	nple F	Ref: Trib. Glasgaboy (Me	adowbrook) Custom	er Sample Code:		
			Sample	Condition:	Sat	isfactory
Entity Name:			Entity C	ode:		
Site / Project:			Sample	d By:	Danny O	Leary SSS Ltd
Our Reference	e:	89581 (23-279	967) - Sample	Matrix:	Surfa	ace Water
Date Sampled: 27/04/2023		3 Time Sa	Time Sampled:		10:15	
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.10	
SEP 007	*	Temperature	°C		10.00	
	*	Visual <u>Chemical Analysis: (F)</u>			Clear	
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9	
SCP 052		Conductivity	µS/cm @ 20 ℃	15	228	
SCP 010		Suspended Solids	mg/L	2	2	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	< 0.01	
SCP 058/058B		Turbidity	NTU	0.20	1.23	Note C & D

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Customer Sar	nple I	Ref: Glasgaboy River (C	Glanmire) C	ustomer Sample Cod	e:	
			Sa	ample Condition:	S	atisfactory
Entity Name:			E	ntity Code:		
Site / Project:			Sa	ampled By:	Danny (O Leary SSS Ltd
Our Reference	e:	89582 (23-279	67) - Sa	ample Matrix:	Su	rface Water
Date Sampled	l:	27/04/2023	3 Ti	Time Sampled:		10:30
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.01	
SEP 007	*	Temperature	°C		10.30	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9	
SCP 052		Conductivity	μS/cm @		235	
SCP 010		Suspended Solids	mg/L	2	2	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	< 0.01	
SCP 058/058B		Turbidity	NTU	0.20	1.01	Note C & D

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Customer Sar	nple F	Ref: Glashaboy River (E	Ounkettle)	ustomer Sample Cod	e:	
			s	ample Condition:	S	Satisfactory
Entity Name:			E	ntity Code:		
Site / Project:			s	ampled By:	Danny	O Leary SSS Ltd
Our Reference	e:	89583 (23-279	67) - S	ample Matrix:	Su	urface Water
Date Sampled: 27/04/2023		3 T	Time Sampled:		10:45	
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.15	
SEP 007	*	Temperature	°C		10.00	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	μS/cm @	20 ℃ 15	690	
SCP 010		Suspended Solids	mg/L	2	6	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	< 0.01	
SCP 058/058B		Turbidity	NTU	0.20	1.79	Note C & D

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N.5 May 2023: Batch No. 23-28969



Report No. 23-28969

Rev 0

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Certificate of Analysis

Customer:	Cork City Council	Project:	Glashaboy River Drainage Scheme	
Address:	Water Services, Environment,	Site		
	Cork City Council, City Hall.Cork	Date Received:	29/05/2023	
		Condition of Sample:	Satisfactory	
Report to:	Roslyn_McCarthy@CorkCity.ie	Date Analysed:	29/05/2023 - 02/06/2023	
Customer PO		Issue Date:	06/06/2023	
Quote No.		BATCH NUMBER:	23-28969	

Duth Lucphy

Ruth Murphy Chemistry Laboratory Manager

Index to symbols used & Notes

*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
***	Customer specific limits
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LÓQ	Parameter Limit of Quantification
Note 6	Subcontracted Parameter.

Notes

- The results relate only to the items tested.
- Opinions and interpretations expressed herein are outside the scope of INAB accreditation.
- The analysis report shall not be reproduced except in full without written approval of the laboratory.
- Sampling is outside the scope of the laboratory activities.

Notes for Drinking Water samples

Note A	The water should not be aggressive
Note B	Compliance must be ensured with the conditions that [NO3]/50 + [NO2]/3 =1
Note C	Acceptable to customers and no abnormal change
Note D	In the case of surface water treatment, a parametric value not exceeding 1 NTU in the water ex treatment works must be strived for
Note F	Fluoridated supplies 0.8 mg/L; Natural supplies 1.5 mg/L.

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Customer Sar	mple I	Ref: Sallybrook	Customer Sample	Code:	
Project: Glashaboy River Drainage S		Glashaboy River Drainage Scheme	ge Scheme Sampled By:		Danny O Leary SSS Ltd
Our Reference	e:	92481 (23-28969)	Sample Matrix:		Surface Water
Date Sampled	1:	29/05/2023	Time Sampled:		10:00
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	9.90
SEP 007	*	Temperature	°C		12.80
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.1
SCP 052		Conductivity	µS/cm @ 20 ℃	15	298
SCP 010		Suspended Solids	mg/L	2	2
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.03
SCP 058/058B		Turbidity	NTU	0.20	0.58

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Customer Sa	ample F	Ref: River Glashaboy (Sall	y Brook Bridge) Customer Samp	ble Code:	
Project:		Glashaboy River Dra	inage Scheme Sampled By:		Danny O Leary SSS Ltd
Our Referen	ce:	92482 (23-2	8969) Sample Matrix:		Surface Water
Date Sample	ed:	29/05/2023	Time Sampled:		10:30
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	9.80
SEP 007	*	Temperature	°C		12.90
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0
SCP 052		Conductivity	µS/cm @ 20 ℃	15	231
SCP 010		Suspended Solids	mg/L	2	< 2
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.04
SCP 058/058B		Turbidity	NTU	0.20	0.50

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Customer Sa	mple F	Ref: Trib. Glashaboy (Kno	ocknahorgan) Customer Samp	le Code:	
Project:		Glashaboy River Drail	nage Scheme Sampled By:		Danny O Leary SSS Ltd
Our Reference	ce:	92483 (23-28	Sample Matrix:		Surface Water
Date Sample	d:	29/05/2023	Time Sampled:		11:00
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.01
SEP 007	*	Temperature	\Im		13.10
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.2
SCP 052		Conductivity	μS/cm @ 20 ℃	15	333
SCP 010		Suspended Solids	mg/L	2	< 2
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.07
SCP 058/058B		Turbidity	NTU	0.20	0.23

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Customer Sar	mple F	Ref: Trib. Glashaboy (Broo	klodge) Customer Samp	ble Code:	
Project:		Glashaboy River Drainag	e Scheme Sampled By:		Danny O Leary SSS Ltd
Our Reference	e:	92484 (23-2896	9) Sample Matrix:		Surface Water
Date Sampled	1:	29/05/2023	Time Sampled:		11:20
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.10
SEP 007	*	Temperature	D °		12.90
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9
SCP 052		Conductivity	μS/cm @ 20 ℃	15	245
SCP 010		Suspended Solids	mg/L	2	2
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.01
SCP 058/058B		Turbidity	NTU	0.20	1.07

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Customer Sar	nple F	Ref: Trib. Glashaboy (Ba	linaglanna) Customer Sam	ple Code:	
Project:		Glashaboy River Drair	age Scheme Sampled By:		Danny O Leary SSS Ltd
Our Reference	e:	92485 (23-28	969) Sample Matrix:		Surface Water
Date Sampled	l:	29/05/2023	Time Sampled:		11:30
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	9.78
SEP 007	*	Temperature	$\mathbf{\hat{v}}$		12.90
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.7
SCP 052		Conductivity	µS/cm @ 20 ℃	15	247
SCP 010		Suspended Solids	mg/L	2	4
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.01
SCP 058/058B		Turbidity	NTU	0.20	0.91

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Customer Sar	mple R	ef: Trib. Glasgaboy (Meadowbrook)	Customer Sample	Code:	
Project:		Glashaboy River Drainage Schem	e Sampled By:		Danny O Leary SSS Ltd
Our Reference	e:	92486 (23-28969)	Sample Matrix:		Surface Water
Date Sampled	d:	29/05/2023	Time Sampled:		11:45
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	9.89
SEP 007	*	Temperature	°C		13.00
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0
SCP 052		Conductivity	μS/cm @ 20 ℃	15	237
SCP 010		Suspended Solids	mg/L	2	< 2
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.04
SCP 058/058B		Turbidity	NTU	0.20	0.53

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Customer Sar	mple F	Ref: Glasgaboy River (Glanmire) Customer Sa	mple Code:	
Project:		Glashaboy River Drai	nage Scheme Sampled By:		Danny O Leary SSS Ltd
Our Reference	e:	92487 (23-28	Sample Matri	x:	Surface Water
Date Sampled	J:	29/05/2023	Time Sample	d:	12:00
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	10.11
SEP 007	*	Temperature	\Im		13.10
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9
SCP 052		Conductivity	μS/cm @ 20 ℃	15	244
SCP 010		Suspended Solids	mg/L	2	3
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.04
SCP 058/058B		Turbidity	NTU	0.20	1.03

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Customer Sar	mple F	Ref: Glashaboy River (Dur	nkettle) Customer Sam	ple Code:	
Project:		Glashaboy River Drainag	e Scheme Sampled By:		Danny O Leary SSS Ltd
Our Reference	e:	92488 (23-2896	9) Sample Matrix:		Surface Water
Date Sampled	1:	29/05/2023	Time Sampled:		12:10
Method:		Parameter:	Units	LOQ	Result
		Onsite Measurements:			
	*	Dissolved Oxygen	mg/L	0.10	9.87
SEP 007	*	Temperature	\circ		13.00
	*	Visual			Clear
		Chemical Analysis: (F)			
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.1
SCP 052		Conductivity	µS/cm @ 20 ℃	15	479
SCP 010		Suspended Solids	mg/L	2	6
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02
SCP 027C		Orthophosphate	mg/L P	0.01	0.02
SCP 058/058B		Turbidity	NTU	0.20	1.46

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N.6 June 2023: Batch No. 23-30328



Report No. 23-30328

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Certificate of Analysis

Customer:	Cork City Council	Site/Project:	Glashaboy River Drainage Scheme
		Date Received:	30/06/2023
Local Authority:	Cork City Council, City Hall, Anglesea Street, Cork	Condition of Sample(s):	Satisfactory
Customer Contact:	Roslyn McCarthy	Date Analysed:	30/06/2023 - 14/07/2023
Customer PO		Issue Date:	17/07/2023
Quote No.		BATCH NUMBER:	23-30328

o' Brien Sadhbh

Sadhbh O Brien Chemistry Team Lead

Index to symbols used:

*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
***	S.I. No. 122 of 2014 and S.I No. 99 of 2023 - European Union (Drinking Water) Regulations 2014, 2017 and 2023
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LOD	Parameter Limit of Quantification

Notes

Note A	The water should not be aggressive.
Note C	Acceptable to customers and no abnormal change.
Note D	In the case of surface water treatment, a parametric value not exceeding 1 NTU in the
	water ex treatment works must be strived for.
Note E	Irish water parametric limit for TVC is <100 cfu/mL.
Note F	Fluoridated supplies 0.8 mg/L; Natural supplies 1.5 mg/L.
Note 6	Subcontracted Parameter.

- The results relate only to the items tested.
- Opinions and interpretations expressed herein are outside the scope of INAB accreditation.
- The analysis report shall not be reproduced except in full without written approval of the laboratory.
- Sampling is outside the scope of the laboratory activities.

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Rev 0

23-30328

Report No.

Customer San	nple F	Ref:	Sallybrook		Customer Sa	ample Code:		
					Sample Con	dition:	Sat	isfactory
Entity Name:				Entity Code:	:			
Site / Project: 96385 (23-30328) - Date Sampled: 30/06/2023				Sampled By	:	Danny O	Leary SSS Ltd	
		96385 (23-30328) -	Sample Matrix: Time Sampled:		Surface Water :			
		30/06/2023						
Method:		Parameter:		Units		LOQ	Result	***Limits
		Onsite Measurements:						
	*	Dissolved Oxygen		mg/L		0.10	10.12	
SEP 007	*	Temperature		°C			11.40	
	*	Visual <u>Chemical Analysis: (F)</u>					Clear	
SCP 052		Hydrogen Ion (pH)		pH unit	S	4.0	7.9	
SCP 052		Conductivity		μS/cm	@ 20 °C	15	301	
SCP 010		Suspended Solids		mg/L		2	< 4	
SCP 027A		Total Ammonia		mg/L N	l	0.02	0.03	
SCP 027C		Orthophosphate		mg/L F	•	0.01	0.05	
SCP 058/058B		Turbidity		NTU		0.20	0.23	Note C & I

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directors: K. Murphy, M. Murphy & C. Murphy registered in ireland no 323196 | vat reg no IE 6343196 M



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Customer Sar	mple I	Ref: River Glashaboy (Sally E	Brook Bridge) C	ustomer Sample Code	:	
			s	ample Condition:	Sat	isfactory
Entity Name:			E	ntity Code:		
Site / Project:		s	ampled By:	Danny O	Leary SSS Ltd	
Our Reference	e:	96386 (23-3032	28) - S	ample Matrix:	Surfa	ace Water
Date Sampled	1:	30/06/2023	Т	ime Sampled:		:
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.22	
SEP 007	*	Temperature	°C		11.50	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	μS/cm @		243	
SCP 010		Suspended Solids	mg/L	2	< 4	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.06	
SCP 058/058B		Turbidity	NTU	0.20	0.83	Note C & D

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Customer Sar	nple	Ref: Trib. Glashaboy (Knock	nahorgan) (Customer Sample Code:		
				Sample Condition:	Sat	isfactory
Entity Name:			E	Entity Code:		
Site / Project:		S	Sampled By:	Danny O	Leary SSS Ltd	
Our Reference	e:	96387 (23-30328	3) -	Sample Matrix:	Surfa	ace Water
Date Sampled	l:	30/06/2023	1	Time Sampled:		:
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.98	
SEP 007	*	Temperature	°C		11.60	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	μS/cm @		304	
SCP 010		Suspended Solids	mg/L	2	< 4	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.07	
SCP 058/058B		Turbidity	NTU	0.20	0.89	Note C & D

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Customer San	nple	Ref: Trib. Glashaboy (Broo	klodge)	Customer Sample Code	:	
				Sample Condition:	Sat	isfactory
Entity Name:				Entity Code:		
Site / Project:				Sampled By:	Danny O	Leary SSS Ltd
Our Reference	e:	96388 (23-30328	3) -	Sample Matrix:	Surfa	ace Water
Date Sampled	:	30/06/2023		Time Sampled:		:
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.01	
SEP 007	*	Temperature	ິ		10.90	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH uni	ts 4.0	7.9	
SCP 052		Conductivity	•	@ 20 °C 15	253	
SCP 010		Suspended Solids	, mg/L	2	< 4	
SCP 027A		Total Ammonia	mg/L N	0.02	0.08	
SCP 027C		Orthophosphate	mg/L F	0.01	0.04	
SCP 058/058B		Turbidity	NTU	0.20	0.59	Note C & D

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Customer Sar	mple I	Ref: Trib. Glashaboy (Ball	inaglanna) Ci	ustomer Sample Code:		
			Sa	ample Condition:	Sat	isfactory
Entity Name:			E	ntity Code:		
Site / Project:			Sa	ampled By:	Danny O	Leary SSS Ltd
Our Reference	e:	96389 (23-303	28) - Sa	ample Matrix:	Surfa	ace Water
Date Sampled	1:	30/06/2023	Ti	me Sampled:		:
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.89	
SEP 007	*	Temperature	°C		11.50	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9	
SCP 052		Conductivity	μS/cm @	20 °C 15	253	
SCP 010		Suspended Solids	mg/L	2	< 4	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.04	
SCP 058/058B		Turbidity	NTU	0.20	0.47	Note C & D

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Customer San	nple F	Ref: Trib. Glasgaboy (Mea	adowbrook) Customer	Sample Code:		
			Sample C	ondition:	Sat	isfactory
Entity Name:			Entity Cod	de:		
Site / Project:			Sampled I	Sampled By: Sample Matrix: Time Sampled:		Leary SSS Ltd
Our Reference: 96390 (23-30328) - Date Sampled: 30/06/2023		28) - Sample M	ace Water			
		3 Time Sam	:			
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.94	
SEP 007	*	Temperature	D °		11.20	
	*	Visual Chemical Analysis: (F)			Clear	
SCP 052		Hydrogen Ion (pH)	pH units	4.0	8.0	
SCP 052		Conductivity	µS/cm @ 20 ℃	15	248	
SCP 010		Suspended Solids	mg/L	2	< 4	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.06	
SCP 058/058B		Turbidity	NTU	0.20	0.23	Note C & D

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Customer Sar	nple I	Ref: Glasgaboy River (G	Glanmire) Cus	tomer Sample Code:		
			Sam	ple Condition:	Sat	isfactory
Entity Name: Site / Project: Our Reference: 96391 (23-30328) -			Enti	ty Code:		
			Sam	pled By:	Danny O	Leary SSS Ltd
			328) - Sam	Sample Matrix: Time Sampled:		ace Water
Date Sampled: 30/06/2023		3 Tim	:			
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	10.11	
SEP 007	*	Temperature	C		11.80	
	*	Visual			Clear	
		Chemical Analysis: (F)				
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.8	
SCP 052		Conductivity	μS/cm @ 2	0 ℃ 15	259	
SCP 010		Suspended Solids	mg/L	2	4	
SCP 027A		Total Ammonia	mg/L N	0.02	< 0.02	
SCP 027C		Orthophosphate	mg/L P	0.01	0.02	
SCP 058/058B		Turbidity	NTU	0.20	0.26	Note C & D

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Customer Sar	nple F	Ref: Glashaboy River	Dunkettle) Custom	er Sample Code:		
			Sample	Condition:	Sat	isfactory
Entity Name: Site / Project:			Entity C	ode:		
			Sampleo	d By:	Danny O	Leary SSS Ltd
Our Reference: 96392 (23-30328) - Date Sampled: 30/06/2023		328) - Sample	Sample Matrix: Time Sampled:		ace Water	
		23 Time Sa			:	
Method:		Parameter:	Units	LOQ	Result	***Limits
		Onsite Measurements:				
	*	Dissolved Oxygen	mg/L	0.10	9.95	
SEP 007	*	Temperature	C		11.70	
	*	Visual Chemical Analysis: (F)			Clear	
SCP 052		Hydrogen Ion (pH)	pH units	4.0	7.9	
SCP 052		Conductivity	µS/cm @ 20 ℃	15	13870	
SCP 010		Suspended Solids	mg/L	2	25	
SCP 027A		Total Ammonia	mg/L N	0.02	0.30	
SCP 027C		Orthophosphate	mg/L P	0.01	0.03	
SCP 058/058B		Turbidity	NTU	0.20	0.76	Note C & D

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