

Proposed Seven Hills Wind Farm, Co. Roscommon - EIAR EIAR Appendices - F - 2022.06.03- 190907



APPENDIX 9-2

LAB REPORTS



EXCELLENCE THROUGH ACCREDITATION

ENVIRONMENTAL LABORATORY SERVICES Acorn Business Campus Mahon Industrial Park, Blackrock, Cork Ireland Tel: +353 21 453 6141 Fax: +353 21 453 6149 Web: www.elsltd.com email:info@elsltd.com



David Broderick	Report Number	196737 - 1
Hydro-Environmental Services	Sample Number	196737/001
22, Lower Main Street,	Date of Receipt	25/03/2021
Dungarvan,	Date Started	25/03/2021
058 44122	Received or Collected	Hand
Per Batch	Date of Report	19/04/2021
QN010649	Sample Type	Ground Waters
Brian Fallon Well	Condition on receipt	Satisfactory
	Hydro-Environmental Services 22, Lower Main Street, Dungarvan, 058 44122 Per Batch QN010649	Hydro-Environmental ServicesSample Number22, Lower Main Street,Date of ReceiptDungarvan,Date Started058 44122Received or CollectedPer BatchDate of ReportQN010649Sample Type

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		< 0.005	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		< 0.006	mg/l NH4	INAB
Nitrate as N		EW175	0.15		1.8	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.007	mg/l P	INAB
Chloride mg/L		EW175	1.0		16	mg/L	INAB
Sulphate mg/L		EW175	1.0		5.5	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		410	mg/L CaCO3	
Iron-Dissolved		EW188	20		<1.0	ug/L	YES
Manganese-Dissolved		EW188	1.0		<1.0	ug/L	YES
Aluminium-Dissolved		EW188	5.0		<2.0	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.7	ug/L	YES
Calcium-Dissolved		EW188	1.0		160	mg/L	
Magnesium-Dissolved		EW188	0.3		6.2	mg/L	YES
Subcontracted							
Potassium-Dissolved		EW188	0.2		3.0	mg/L	YES
Sodium-Dissolved		EW188	0.5		7.7	mg/L	YES
Fitralab							
pH		EW153	0.0		7.1	pH Units	INAB
Conductivity @20 DegC		EW153	25		744	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		416	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

NOTES

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ENVIRONMENTAL LABORATORY SERVICES



Contact Name Address	David Broderick Hydro-Environmental Services 22, Lower Main Street, Dungarvan,	Report Number Sample Number Date of Receipt Date Started	196737 - 1 196737/002 25/03/2021 25/03/2021
Tel No	058 44122	Received or Collected	Hand
Customer PO	Per Batch	Date of Report	19/04/2021
Project No.	QN010649	Sample Type	Ground Waters
Customer Ref	Noel Fallon Well	Condition on receipt	Satisfactory

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		0.015	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		0.020	mg/l NH4	INAB
Nitrate as N		EW175	0.15		1.7	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.008	mg/l P	INAB
Chloride mg/L		EW175	1.0		22	mg/L	INAB
Sulphate mg/L		EW175	1.0		5.0	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		350	mg/L CaCO3	
Iron-Dissolved		EW188	20		7.6	ug/L	YES
Manganese-Dissolved		EW188	1.0		<1.0	ug/L	YES
Aluminium-Dissolved		EW188	5.0		<2.0	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.5	ug/L	YES
Calcium-Dissolved		EW188	1.0		130	mg/L	
Magnesium-Dissolved		EW188	0.3		3.9	mg/L	YES
Potassium-Dissolved		EW188	0.2		4.6	mg/L	YES
Sodium-Dissolved		EW188	0.5		10.5	mg/L	YES
Titralab							
pH		EW153	0.0		7.3	pH Units	INAB
Conductivity @20 DegC		EW153	25		670	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		362	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

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EXCELLENCE THROUGH ACCREDITATION

Contact NameDavid BroderickAddressHydro-Environmental Services
22, Lower Main Street,
Dungarvan,Tel No058 44122Customer POPer BatchProject No.QN010649Customer RefCommons Turlough

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Report Number

Sample Number

Date of Receipt

Date of Report

Sample Type

Received or Collected

Condition on receipt

Date Started



196737 - 1 196737/003 25/03/2021 25/03/2021 Hand 19/04/2021 Ground Waters

Satisfactory

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		< 0.005	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		< 0.006	mg/l NH4	INAB
Nitrate as N		EW175	0.15		0.16	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.007	mg/l P	INAB
Chloride mg/L		EW175	1.0		13	mg/L	INAB
Sulphate mg/L		EW175	1.0		1.2	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		190	mg/L CaCO3	YES
Iron-Dissolved		EW188	20		6.41	ug/L	YES
Manganese-Dissolved		EW188	1.0		<1.0	ug/L	YES
Aluminium-Dissolved		EW188	5.0		8.7	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.5	ug/L	YES
Subcontracted							
Calcium-Dissolved		EW188	1.0		69	mg/L	YES
Magnesium-Dissolved		EW188	0.3		3.4	mg/L	YES
Potassium-Dissolved		EW188	0.2		2.1	mg/L	YES
Sodium-Dissolved		EW188	0.5		6.2	mg/L	YES
Titralab							
pH		EW153	0.0		8.5	pH Units	INAB
Conductivity @20 DegC		EW153	25		291	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		148	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

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EXCELLENCE THROUGH ACCREDITATION

David Broderick Contact Name Address Hydro-Environmental Services 22, Lower Main Street, Dungarvan, Tel No 058 44122 **Customer PO** Per Batch QN010649 **Project No. Customer Ref Thomas Street Turlough**

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Report Number	196737 - 1
Sample Number	196737/004
Date of Receipt	25/03/2021
Date Started	25/03/2021
Received or Collected	Hand
Received or Collected Date of Report	Hand 19/04/2021

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		< 0.005	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		< 0.006	mg/l NH4	INAB
Nitrate as N		EW175	0.15		0.16	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.007	mg/l P	INAB
Chloride mg/L		EW175	1.0		15	mg/L	INAB
Sulphate mg/L		EW175	1.0		2.3	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		190	mg/L CaCO3	YES
Iron-Dissolved		EW188	20		26	ug/L	YES
Manganese-Dissolved		EW188	1.0		<1.0	ug/L	YES
Aluminium-Dissolved		EW188	5.0		8.2	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.7	ug/L	YES
Subcontracted							
Calcium-Dissolved		EW188	1.0		69	mg/L	YES
Magnesium-Dissolved		EW188	0.3		3.5	mg/L	YES
Potassium-Dissolved		EW188	0.2		3.6	mg/L	YES
Sodium-Dissolved		EW188	0.5		6.9	mg/L	YES
Titralab							
pH		EW153	0.0		8.5	pH Units	INAB
Conductivity @20 DegC		EW153	25		375	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		192	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

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ENVIRONMENTAL LABORATORY SERVICES



Contact Name Address	David Broderick Hydro-Environmental Services 22, Lower Main Street, Dungarvan,	Report Number Sample Number Date of Receipt Date Started	196737 - 1 196737/005 25/03/2021 25/03/2021
Tel No	058 44122	Received or Collected	Hand
Customer PO	Per Batch	Date of Report	19/04/2021
Project No.	QN010649	Sample Type	Ground Waters
Customer Ref	Ballyglass River	Condition on receipt	Satisfactory

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		0.006	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		0.007	mg/l NH4	INAB
Nitrate as N		EW175	0.15		1.0	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.007	mg/l P	INAB
Chloride mg/L		EW175	1.0		17	mg/L	INAB
Sulphate mg/L		EW175	1.0		4.5	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		310	mg/L CaCO3	YES
Iron-Dissolved		EW188	20		39	ug/L	YES
Manganese-Dissolved		EW188	1.0		1.2	ug/L	YES
Aluminium-Dissolved		EW188	5.0		89	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.6	ug/L	YES
Calcium-Dissolved		EW188	1.0		120	mg/L	
Magnesium-Dissolved		EW188	0.3		3.4	mg/L	YES
Subcontracted							
Potassium-Dissolved		EW188	0.2		2.4	mg/L	YES
Sodium-Dissolved		EW188	0.5		8.2	mg/L	YES
Titralab							
pH		EW153	0.0		8.1	pH Units	INAB
Conductivity @20 DegC		EW153	25		589	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		325	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

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ENVIRONMENTAL



Contact Name Address	David Broderick Hydro-Environmental Services 22, Lower Main Street, Dungarvan,	Report Number Sample Number Date of Receipt Date Started	196737 - 1 196737/006 25/03/2021 25/03/2021
Tel No	058 44122	Received or Collected	Hand
Customer PO	Per Batch	Date of Report	19/04/2021
Project No.	QN010649	Sample Type	Ground Waters
Customer Ref	Kileglan River	Condition on receipt	Satisfactory

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		< 0.005	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		< 0.006	mg/l NH4	INAB
Nitrate as N		EW175	0.15		2.1	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.008	mg/l P	INAB
Chloride mg/L		EW175	1.0		16	mg/L	INAB
Sulphate mg/L		EW175	1.0		7.7	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		310	mg/L CaCO3	YES
Iron-Dissolved		EW188	20		29	ug/L	YES
Manganese-Dissolved		EW188	1.0		2.4	ug/L	YES
Aluminium-Dissolved		EW188	5.0		2.0	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.6	ug/L	YES
Calcium-Dissolved		EW188	1.0		120	mg/L	
Magnesium-Dissolved		EW188	0.3		11.2	mg/L	YES
Subcontracted							
Potassium-Dissolved		EW188	0.2		3.2	mg/L	YES
Sodium-Dissolved		EW188	0.5		8.1	mg/L	YES
Titralab							
pH		EW153	0.0		7.5	pH Units	INAB
Conductivity @20 DegC		EW153	25		643	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		351	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

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ENVIRONMENTAL



Contact Name Address	David Broderick Hydro-Environmental Services 22, Lower Main Street, Dungarvan,	Report Number Sample Number Date of Receipt Date Started	196737 - 1 196737/007 25/03/2021 25/03/2021
Tel No	058 44122	Received or Collected	Hand
Customer PO	Per Batch	Date of Report	19/04/2021
Project No.	QN010649	Sample Type	Ground Waters
Customer Ref	MJ Daly Well	Condition on receipt	Satisfactory

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		0.008	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		0.010	mg/l NH4	INAB
Nitrate as N		EW175	0.15		4.5	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.009	mg/l P	INAB
Chloride mg/L		EW175	1.0		13	mg/L	INAB
Sulphate mg/L		EW175	1.0		6.6	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		310	mg/L CaCO3	YES
Iron-Dissolved		EW188	20		<1.0	ug/L	YES
Manganese-Dissolved		EW188	1.0		<1.0	ug/L	YES
Subcontracted							
Aluminium-Dissolved		EW188	5.0		2.4	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.5	ug/L	YES
Calcium-Dissolved		EW188	1.0		120	mg/L	
Magnesium-Dissolved		EW188	0.3		3.3	mg/L	YES
Potassium-Dissolved		EW188	0.2		5.8	mg/L	YES
Sodium-Dissolved		EW188	0.5		8.0	mg/L	YES
Titralab							
pH		EW153	0.0		7.6	pH Units	INAB
Conductivity @20 DegC		EW153	25		598	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		315	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

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ENVIRONMENTAL



Contact Name Address	David Broderick Hydro-Environmental Services 22, Lower Main Street, Dungarvan,	Report Number Sample Number Date of Receipt Date Started	196737 - 1 196737/008 25/03/2021 25/03/2021
Tel No	058 44122	Received or Collected	Hand
Customer PO	Per Batch	Date of Report	19/04/2021
Project No.	QN010649	Sample Type	Ground Waters
Customer Ref	M Moore Well	Condition on receipt	Satisfactory

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.
Gallery Plus-Suite A							
Ammonia as N		EW175	0.005		< 0.005	mg/l N	INAB
Ammonium as NH4 (calc)		EW175	0.006		< 0.006	mg/l NH4	INAB
Nitrate as N		EW175	0.15		2.1	mg/l N	INAB
Nitrite as N		EW175	0.005		< 0.005	mg/l N	INAB
Phosphate (Ortho/MRP) as P		EW175	0.005		0.006	mg/l P	INAB
Chloride mg/L		EW175	1.0		17	mg/L	INAB
Sulphate mg/L		EW175	1.0		4.8	mg/L	INAB
Metals-Dissolved							
Hardness-Dissolved		EW188	3.0		290	mg/L CaCO3	YES
Iron-Dissolved		EW188	20		3.38	ug/L	YES
Manganese-Dissolved		EW188	1.0		<1.0	ug/L	YES
Subcontracted							
Aluminium-Dissolved		EW188	5.0		<2.0	ug/L	YES
Arsenic-Dissolved		EW188	0.2		0.4	ug/L	YES
Calcium-Dissolved		EW188	1.0		110	mg/L	
Magnesium-Dissolved		EW188	0.3		4.0	mg/L	YES
Potassium-Dissolved		EW188	0.2		4.7	mg/L	YES
Sodium-Dissolved		EW188	0.5		7.6	mg/L	YES
Titralab							
pH		EW153	0.0		7.4	pH Units	INAB
Conductivity @20 DegC		EW153	25		561	uscm-1@20	INAB
Alkalinity Total (R2 pH4.5)		EW153	10		295	mg/L CaCO3	INAB

Signed :

Maire Bradley

19/04/2021

Máire Bradley-Deputy Technical Manager

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