



CERTIFICATE OF ANALYSIS

Client : Michael J. Murphy
 Kiltiernan Group Water Scheme
 Caheradoo
 Kiltcolgan
 Co. Galway
 CC : Barry Deane, NFGWS Joint Training Co-ordinator

Report No. : 297045
 Date of Receipt : 31/05/2016
 Start Date of Analysis : 31/05/2016
 Date of Report : 04/07/2016
 Order Number :
 Sample taken by : CLS

Lab No	Sample Description	Test	*	Result	Units
678752	Kiltiernan GWS main source, 31/05/2016	BOD	R	<1	mg/l
		COD	R	<10	mg/l
		Turbidity	R	0.3	N.T.U.
		pH	R	6.8	pH Units
		Conductivity @20C	R	621	uS/cm
		Nitrite as N	R	<0.005	mg/l
		Sodium, total	R	13	mg/l
		Chloride	R	21.1	mg/l
		Ammonium as NH4	R	<0.01	mg/l
		Nitrate as NO3	R	5.02	mg/l
		Dissolved Oxygen (%)	R	98	%Sat
		Iron, total	R	<10	ug/l
		Potassium, total	R	5	mg/l
		Total Hardness (Kone)	R	343	mg/l CaCO3
		Magnesium, total	R	9	mg/l
		Colour, apparent	R	<4	mg/l Pt Co
		Silica as Si O2 (reactive)	S	2.87	mg/l
		Sulphate	R	13.4	mg/l
		Orthophosphate as PO4-P	R	0.071	mg/l
		Manganese, total	R	<5	ug/l
		Calcium, total	R	119	mg/l
		Aluminium, dissolved	R	<2	ug/l
		Copper, dissolved	R	2	ug/l
		Lead, dissolved	R	<0.5	ug/l
		Chromium, dissolved	R	<0.5	ug/l
		Nickel, dissolved	R	<0.5	ug/l
		Cadmium, dissolved	R	<0.5	ug/l
		Arsenic, dissolved	R	0.6	ug/l
		Zinc, dissolved	R	<5	ug/l
		Barium, dissolved	R	13	ug/l
		TOC	R	1.66	mg/L
		PAH total	R	16	ng/l
		Clostridium Perfringens in Water	R	0	cfu/100ml
		Strontium, dissolved	R	171	ug/l
E coli (Filtration) (Environmental Waters)	R	4	cfu/100ml		
Total Coliforms (Filtration) (Environmental Waters)	R	4	cfu/100ml		
Fluoride by IC	R	<0.2	mg/l		
TPH (>C5 - C44) by GC-FID	R	323	ug/l		
Alkalinity Total by Autotitration	R	361	mg/l CaCO3		



Approved by: *Susie McGuinness*

**Susie McGuinness
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Scientist

See below for test specifications and accreditation status.

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* Location of analysis: R=Ros Muc, M=MedPharma, S=Subcontracted.

It is recommended that water samples requiring microbiological analysis should be tested within 24 hours of sampling.



Test	Specification	CLS 17025 status	GMP/FDA ¹	ISO ²	Sub ³	Sub 17025 Status
BOD	CLS 12	Yes	No	Yes	No	No
COD	CLS 52	Yes	No	Yes	No	No
Turbidity	CLS 30	Yes	No	Yes	No	No
pH	CLS 26	Yes	No	Yes	No	No
Conductivity @20C	CLS 67	Yes	No	Yes	No	No
Nitrite as N	Konelab CLS 37	Yes	No	Yes	No	No
Sodium, total	ICP-MS CLS129	Yes	No	Yes	No	No
Chloride	Konelab CLS 36	Yes	No	Yes	No	No
Ammonium as NH4	Konelab CLS 40	Yes	No	Yes	No	No
Nitrate as NO3	Konelab CLS 39	Yes	No	Yes	No	No
Dissolved Oxygen (%)	CLS 75	No	No	Yes	No	No
Iron, total	ICP-MS CLS129	Yes	No	Yes	No	No
Potassium, total	ICP-MS CLS129	Yes	No	Yes	No	No
Total Hardness (Kone)	Konelab CLS 77	Yes	No	Yes	No	No
Magnesium, total	ICP-MS CLS129	Yes	No	Yes	No	No
Colour, apparent	CLS 29	Yes	No	Yes	No	No
Silica as Si O2 (reactive)	Spectroph.	N/A	N/A	N/A	Yes	No
Sulphate	Konelab CLS 88	Yes	No	Yes	No	No
Orthophosphate as PO4-P	Konelab CLS 35	Yes	No	Yes	No	No
Manganese, total	ICP-MS CLS129	Yes	No	Yes	No	No
Calcium, total	ICP-MS CLS129	Yes	No	Yes	No	No
Aluminium, dissolved	ICP-MS CLS129	Yes	No	Yes	No	No
Copper, dissolved	ICP-MS CLS 129	Yes	No	Yes	No	No
Lead, dissolved	ICP-MS CLS129	Yes	No	Yes	No	No
Chromium, dissolved	ICP-MS CLS 129	Yes	No	Yes	No	No
Nickel, dissolved	ICP-MS CLS129	Yes	No	Yes	No	No
Cadmium, dissolved	ICP-MS CLS129	Yes	No	Yes	No	No
Arsenic, dissolved	ICP-MS CLS129	Yes	No	Yes	No	No
Zinc, dissolved	ICP-MS CLS 129	Yes	No	Yes	No	No
Barium, dissolved	ICP-MS CLS129	Yes	No	Yes	No	No
TOC	CLS 150	Yes	No	Yes	No	No
PAH total	CLS 149	No	No	Yes	No	No
Clostridium Perfringens in Water	CLS 43	Yes	No	Yes	No	No
Strontium, dissolved	ICP-MS CLS129	Yes	No	Yes	No	No
E coli (Filtration) (Environmental Waters)	CLS 16	Yes	No	Yes	No	No
Total Coliforms (Filtration) (Environmental Waters)	CLS 16	Yes	No	Yes	No	No
Fluoride by IC	CLS 194	Yes	No	Yes	No	No
TPH (>C5 - C44) by GC-FID	CLS 193	Yes	No	Yes	No	Yes
Alkalinity Total by Autotitration	CLS 195	Yes	No	Yes	No	No

¹Analysis carried out in a GMP approved, FDA inspected facility (MedPharma site only).

²Laboratory Analysis, Sampling, Technical Backup, Training, Food Safety Program Auditing and Monitoring are all ISO 9001:2008 certified (Ros Muc site only).

³Subcontracted.

Lab No	Sample ID	Sample Condition on Receipt	Sampling Date
678752	Kiltiernan GWS main source, 31/05/2016	Good condition	31/05/2016