

Operator: CWM Environmental Ltd
Permit: CP3735PB

Installation: Nantycaws Landfill Site
Form: Surface waters Q3 2023

Reporting of surface water monitoring for the period 01-Jul-2023 to 30-Sep-2023

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW201	Ionic balance	CALC	12-Jul-2023		-2.45	%
	Electrical conductivity (field)	Field	12-Jul-2023		430	µS/cm
			09-Aug-2023		358	µS/cm
			12-Sep-2023		307	µS/cm
	Groundwater level/dip		12-Jul-2023		23	mm
			09-Aug-2023		38	mm
			12-Sep-2023		25	mm
	Water temperature		12-Jul-2023		14.8	°C
			09-Aug-2023		17.1	°C
			12-Sep-2023		18.2	°C
	Total Suspended solids	TM022	12-Jul-2023		24.5	mg/l
			09-Aug-2023		12.1	mg/l
			12-Sep-2023		21.8	mg/l
	Total organic carbon	TM090	12-Jul-2023		11.3	mg/l
	Ammoniacal Nitrogen as N	TM099	12-Jul-2023		0.222	mg/l
			09-Aug-2023		0.53	mg/l
			12-Sep-2023		0.255	mg/l
	Cadmium (filtered)	TM152	12-Jul-2023		<0.00008	mg/l
	Calcium (filtered)		12-Jul-2023		134	mg/l
	Chromium (filtered)		12-Jul-2023		<0.001	mg/l
	Iron (filtered)		12-Jul-2023		<0.019	mg/l
	Lead (filtered)		12-Jul-2023		0.000274	mg/l
	Magnesium (filtered)		12-Jul-2023		14.1	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Manganese (filtered)	TM152	12-Jul-2023		0.0845	mg/l
	Nickel (filtered)		12-Jul-2023		0.00196	mg/l
	Potassium (filtered)		12-Jul-2023		47.6	mg/l
	Sodium (filtered)		12-Jul-2023		24.6	mg/l
	Zinc (filtered)		12-Jul-2023		0.00555	mg/l
	4-Methylphenol	TM176	12-Jul-2023		<0.001	mg/l
	Diethyl phthalate		12-Jul-2023		<0.001	mg/l
	Chloride	TM184	12-Jul-2023		67.2	mg/l
			09-Aug-2023		65.6	mg/l
			12-Sep-2023		60.7	mg/l
	Nitrate as NO3		12-Jul-2023		43.6	mg/l
	Nitrite as NO2		12-Jul-2023		<0.05	mg/l
	Sulphate		12-Jul-2023		142	mg/l
	Total Oxidised Nitrogen as N		12-Jul-2023		9.85	mg/l
	Dichloromethane	TM208	12-Jul-2023		<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	12-Jul-2023		254	mg/l
	Electrical conductivity @20°C (lab)		12-Jul-2023		923	µS/cm
			09-Aug-2023		780	µS/cm
			12-Sep-2023		721	µS/cm
	pH (lab)		12-Jul-2023		7.74	pH units
			09-Aug-2023		8.33	pH units
			12-Sep-2023		8.31	pH units
	Total Alkalinity as CaCO3		12-Jul-2023		252	mg/l
	Total alkalinity as CaCO3 (filtered)		12-Jul-2023		254	mg/l
	Mecoprop	TM411	12-Jul-2023		<0.00004	mg/l
SW202	Ionic balance	CALC	12-Jul-2023		-0.998	%
	Electrical conductivity (field)	Field	12-Jul-2023		197	µS/cm
			09-Aug-2023		324	µS/cm
			12-Sep-2023		243	µS/cm

SW202	Groundwater level/dip	Field	12-Jul-2023	35	mm
			09-Aug-2023	42	mm
			12-Sep-2023	31	mm
	Water temperature		12-Jul-2023	15.7	°C
			09-Aug-2023	19	°C
			12-Sep-2023	19.9	°C
	Total Suspended solids	TM022	12-Jul-2023	<2	mg/l
			09-Aug-2023	8.2	mg/l
			12-Sep-2023	5.9	mg/l
	Total organic carbon	TM090	12-Jul-2023	3.1	mg/l
	Ammoniacal Nitrogen as N	TM099	12-Jul-2023	<0.2	mg/l
			09-Aug-2023	<0.2	mg/l
			12-Sep-2023	<0.2	mg/l
	Cadmium (filtered)	TM152	12-Jul-2023	<0.00008	mg/l
	Calcium (filtered)		12-Jul-2023	71.7	mg/l
	Chromium (filtered)		12-Jul-2023	<0.001	mg/l
	Iron (filtered)		12-Jul-2023	<0.019	mg/l
	Lead (filtered)		12-Jul-2023	0.00105	mg/l
	Magnesium (filtered)		12-Jul-2023	8.44	mg/l
	Manganese (filtered)		12-Jul-2023	0.0122	mg/l
	Nickel (filtered)		12-Jul-2023	0.000542	mg/l
	Potassium (filtered)		12-Jul-2023	1.21	mg/l
	Sodium (filtered)		12-Jul-2023	12.2	mg/l
	Zinc (filtered)		12-Jul-2023	0.0124	mg/l
	4-Methylphenol	TM176	12-Jul-2023	<0.001	mg/l
	Diethyl phthalate		12-Jul-2023	<0.001	mg/l
	Chloride	TM184	12-Jul-2023	25.6	mg/l
			09-Aug-2023	46.7	mg/l
			12-Sep-2023	35.2	mg/l

SW202	Nitrate as NO3	TM184	12-Jul-2023	6.69	mg/l
	Nitrite as NO2		12-Jul-2023	<0.05	mg/l
	Sulphate		12-Jul-2023	12.7	mg/l
	Total Oxidised Nitrogen as N		12-Jul-2023	1.51	mg/l
	Dichloromethane	TM208	12-Jul-2023	<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	12-Jul-2023	192	mg/l
	Electrical conductivity @20°C (lab)		12-Jul-2023	438	µS/cm
			09-Aug-2023	742	µS/cm
			12-Sep-2023	545	µS/cm
	pH (lab)		12-Jul-2023	7.44	pH units
			09-Aug-2023	7.99	pH units
			12-Sep-2023	8.08	pH units
	Total Alkalinity as CaCO3		12-Jul-2023	193	mg/l
	Total alkalinity as CaCO3 (filtered)		12-Jul-2023	192	mg/l
	Mecoprop	TM411	12-Jul-2023	<0.00004	mg/l
SW203	Groundwater level/dip	Field	12-Jul-2023	DRY	m
			09-Aug-2023	DRY	m
			12-Sep-2023	DRY	m
SW204	Ionic balance	CALC	12-Jul-2023	-2.66	%
			12-Jul-2023	239	µS/cm
			09-Aug-2023	252	µS/cm
			12-Sep-2023	129	µS/cm
	Groundwater level/dip		12-Jul-2023	29	mm
			09-Aug-2023	38	mm
			12-Sep-2023	25	mm
	Water temperature		12-Jul-2023	16.1	°C
			09-Aug-2023	17.8	°C
			12-Sep-2023	19.7	°C
	Total Suspended solids	TM022	12-Jul-2023	17.8	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW204	Total Suspended solids	TM022	09-Aug-2023		2.2	mg/l
			12-Sep-2023		<2	mg/l
	Total organic carbon	TM090	12-Jul-2023		8.94	mg/l
	Ammoniacal Nitrogen as N	TM099	12-Jul-2023		<0.2	mg/l
			09-Aug-2023		<0.2	mg/l
			12-Sep-2023		<0.2	mg/l
	Cadmium (filtered)	TM152	12-Jul-2023		<0.00008	mg/l
	Calcium (filtered)		12-Jul-2023		81.6	mg/l
	Chromium (filtered)		12-Jul-2023		<0.001	mg/l
	Iron (filtered)		12-Jul-2023		0.0564	mg/l
	Lead (filtered)		12-Jul-2023		0.00029	mg/l
	Magnesium (filtered)		12-Jul-2023		7.79	mg/l
	Manganese (filtered)		12-Jul-2023		0.0428	mg/l
	Nickel (filtered)		12-Jul-2023		0.00102	mg/l
	Potassium (filtered)		12-Jul-2023		22.5	mg/l
	Sodium (filtered)		12-Jul-2023		13.8	mg/l
	Zinc (filtered)		12-Jul-2023		0.00412	mg/l
	4-Methylphenol	TM176	12-Jul-2023		<0.001	mg/l
	Diethyl phthalate		12-Jul-2023		<0.001	mg/l
	Chloride	TM184	12-Jul-2023		31.1	mg/l
			09-Aug-2023		26.5	mg/l
			12-Sep-2023		15.8	mg/l
	Nitrate as NO3		12-Jul-2023		19.2	mg/l
	Nitrite as NO2		12-Jul-2023		<0.05	mg/l
	Sulphate		12-Jul-2023		68.4	mg/l
	Total Oxidised Nitrogen as N		12-Jul-2023		4.32	mg/l
	Dichloromethane	TM208	12-Jul-2023		<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	12-Jul-2023		180	mg/l
	Electrical conductivity @20°C (lab)		12-Jul-2023		554	µS/cm

SW204	Electrical conductivity @20°C (lab)	TM256	09-Aug-2023		594	µS/cm
			12-Sep-2023		393	µS/cm
	pH (lab)		12-Jul-2023		7.95	pH units
			09-Aug-2023		8.19	pH units
			12-Sep-2023		8.14	pH units
	Total Alkalinity as CaCO3		12-Jul-2023		184	mg/l
	Total alkalinity as CaCO3 (filtered)		12-Jul-2023		180	mg/l
	Mecoprop	TM411	12-Jul-2023		<0.00004	mg/l
SW205a	Ionic balance	CALC	12-Jul-2023		-1.79	%
	Electrical conductivity (field)	Field	12-Jul-2023		250	µS/cm
			09-Aug-2023		361	µS/cm
			12-Sep-2023		233	µS/cm
	Groundwater level/dip		12-Jul-2023		45	mm
			09-Aug-2023		51	mm
			12-Sep-2023		42	mm
	Water temperature		12-Jul-2023		16.1	°C
			09-Aug-2023		16.5	°C
			12-Sep-2023		18.4	°C
	Total Suspended solids	TM022	12-Jul-2023	<70 mg/l	6.55	mg/l
			09-Aug-2023	<70 mg/l	21.2	mg/l
			12-Sep-2023	<70 mg/l	3.8	mg/l
	Total organic carbon	TM090	12-Jul-2023		8.98	mg/l
	Ammoniacal Nitrogen as N	TM099	12-Jul-2023	<1.0 mg/l	<0.2	mg/l
			09-Aug-2023	<1.0 mg/l	<0.2	mg/l
			12-Sep-2023	<1.0 mg/l	<0.2	mg/l
	Cadmium (filtered)	TM152	12-Jul-2023	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		12-Jul-2023		83.9	mg/l
	Chromium (filtered)		12-Jul-2023		<0.001	mg/l
	Iron (filtered)		12-Jul-2023		0.0587	mg/l

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SW205a	Lead (filtered)	TM152	12-Jul-2023		0.00253	mg/l
	Magnesium (filtered)		12-Jul-2023		8.02	mg/l
	Manganese (filtered)		12-Jul-2023		0.0624	mg/l
	Nickel (filtered)		12-Jul-2023		0.00184	mg/l
	Potassium (filtered)		12-Jul-2023		21.5	mg/l
	Sodium (filtered)		12-Jul-2023		13.9	mg/l
	Zinc (filtered)		12-Jul-2023		0.00752	mg/l
	4-Methylphenol	TM176	12-Jul-2023	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		12-Jul-2023	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	12-Jul-2023	<150 mg/l	30.5	mg/l
			09-Aug-2023	<150 mg/l	50.1	mg/l
			12-Sep-2023	<150 mg/l	30.9	mg/l
	Nitrate as NO3		12-Jul-2023		17.8	mg/l
	Nitrite as NO2		12-Jul-2023		<0.05	mg/l
	Sulphate		12-Jul-2023		66.8	mg/l
	Total Oxidised Nitrogen as N		12-Jul-2023		4.02	mg/l
	Dichloromethane	TM208	12-Jul-2023	<0.002 mg/l	<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)		12-Jul-2023		184	mg/l
	Electrical conductivity @20°C (lab)		12-Jul-2023		547	µS/cm
			09-Aug-2023		791	µS/cm
			12-Sep-2023		510	µS/cm
	pH (lab)		12-Jul-2023	6 to 9 pH units	8.1	pH units
			09-Aug-2023	6 to 9 pH units	8.26	pH units
			12-Sep-2023	6 to 9 pH units	8.31	pH units
	Total Alkalinity as CaCO3		12-Jul-2023		184	mg/l
	Total alkalinity as CaCO3 (filtered)		12-Jul-2023		184	mg/l
	Mecoprop	TM411	12-Jul-2023	<0.000055 mg/l	<0.00004	mg/l
SW206	Ionic balance	CALC	12-Jul-2023		-1.16	%
	Electrical conductivity (field)		12-Jul-2023		270	µS/cm

SW206	Electrical conductivity (field)	Field	09-Aug-2023		150	µS/cm
			12-Sep-2023		190	µS/cm
	Groundwater level/dip		12-Jul-2023		33	mm
			09-Aug-2023		41	mm
			12-Sep-2023		38	mm
	Water temperature		12-Jul-2023		16	°C
			09-Aug-2023		15.9	°C
			12-Sep-2023		18.3	°C
	Total Suspended solids	TM022	12-Jul-2023	<50 mg/l	17.9	mg/l
			09-Aug-2023	<50 mg/l	6.1	mg/l
			12-Sep-2023	<50 mg/l	3.9	mg/l
	Total organic carbon	TM090	12-Jul-2023		8.33	mg/l
	Ammoniacal Nitrogen as N	TM099	12-Jul-2023	<1.0 mg/l	<0.2	mg/l
			09-Aug-2023	<1.0 mg/l	<0.2	mg/l
			12-Sep-2023	<1.0 mg/l	<0.2	mg/l
	Cadmium (filtered)	TM152	12-Jul-2023	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		12-Jul-2023		93	mg/l
	Chromium (filtered)		12-Jul-2023		<0.001	mg/l
	Iron (filtered)		12-Jul-2023		0.0531	mg/l
	Lead (filtered)		12-Jul-2023		0.000296	mg/l
	Magnesium (filtered)		12-Jul-2023		9.18	mg/l
	Manganese (filtered)		12-Jul-2023		0.0521	mg/l
	Nickel (filtered)		12-Jul-2023		0.00103	mg/l
	Potassium (filtered)		12-Jul-2023		25.3	mg/l
	Sodium (filtered)		12-Jul-2023		16.2	mg/l
	Zinc (filtered)		12-Jul-2023		0.00586	mg/l
	4-Methylphenol	TM176	12-Jul-2023	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		12-Jul-2023	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	12-Jul-2023	<150 mg/l	35.2	mg/l

SW206	Chloride	TM184	09-Aug-2023	<150 mg/l	11.8	mg/l
			12-Sep-2023	<150 mg/l	17.4	mg/l
	Nitrate as NO3		12-Jul-2023		23.3	mg/l
	Nitrite as NO2		12-Jul-2023		<0.05	mg/l
	Sulphate		12-Jul-2023		78.7	mg/l
	Total Oxidised Nitrogen as N		12-Jul-2023		5.26	mg/l
	Dichloromethane	TM208	12-Jul-2023	<0.002 mg/l	<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	12-Jul-2023		195	mg/l
	Electrical conductivity @20°C (lab)		12-Jul-2023		615	µS/cm
			09-Aug-2023		321	µS/cm
			12-Sep-2023		383	µS/cm
	pH (lab)		12-Jul-2023	6 to 9 pH units	8.05	pH units
			09-Aug-2023	6 to 9 pH units	8.12	pH units
			12-Sep-2023	6 to 9 pH units	8.15	pH units
	Total Alkalinity as CaCO3		12-Jul-2023		199	mg/l
	Total alkalinity as CaCO3 (filtered)		12-Jul-2023		195	mg/l
	Mecoprop	TM411	12-Jul-2023	<0.000055 mg/l	<0.00004	mg/l
	SW207	Ionic balance	CALC	12-Jul-2023	-2.51	%
	Electrical conductivity (field)	Field	12-Jul-2023		176	µS/cm
			09-Aug-2023		152	µS/cm
			12-Sep-2023		152	µS/cm
	Groundwater level/dip		12-Jul-2023		56	mm
			09-Aug-2023		61	mm
			12-Sep-2023		51	mm
	Water temperature		12-Jul-2023		18	°C
			09-Aug-2023		17.1	°C
			12-Sep-2023		18	°C
	Total Suspended solids	TM022	12-Jul-2023		6.35	mg/l
			09-Aug-2023		6.55	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW207	Total Suspended solids	TM022	12-Sep-2023		4.85	mg/l
	Total organic carbon	TM090	12-Jul-2023		3.78	mg/l
	Ammoniacal Nitrogen as N	TM099	12-Jul-2023		<0.2	mg/l
			09-Aug-2023		<0.2	mg/l
			12-Sep-2023		<0.2	mg/l
	Cadmium (filtered)	TM152	12-Jul-2023		<0.00088	mg/l
	Calcium (filtered)		12-Jul-2023		59.2	mg/l
	Chromium (filtered)		12-Jul-2023		<0.011	mg/l
	Iron (filtered)		12-Jul-2023		<0.209	mg/l
	Lead (filtered)		12-Jul-2023		0.00235	mg/l
	Magnesium (filtered)		12-Jul-2023		4.74	mg/l
	Manganese (filtered)		12-Jul-2023		<0.033	mg/l
	Nickel (filtered)		12-Jul-2023		<0.0044	mg/l
	Potassium (filtered)		12-Jul-2023		2.43	mg/l
	Sodium (filtered)		12-Jul-2023		9.88	mg/l
	Zinc (filtered)		12-Jul-2023		0.0148	mg/l
	4-Methylphenol	TM176	12-Jul-2023		<0.001	mg/l
	Diethyl phthalate		12-Jul-2023		<0.001	mg/l
	Chloride	TM184	12-Jul-2023		15.1	mg/l
			09-Aug-2023		15.5	mg/l
			12-Sep-2023		11.3	mg/l
	Nitrate as NO3		12-Jul-2023		6.49	mg/l
	Nitrite as NO2		12-Jul-2023		<0.05	mg/l
	Sulphate		12-Jul-2023		24.2	mg/l
	Total Oxidised Nitrogen as N		12-Jul-2023		1.47	mg/l
	Dichloromethane	TM208	12-Jul-2023		<0.003	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM256	12-Jul-2023		150	mg/l
	Electrical conductivity @20°C (lab)		12-Jul-2023		356	µS/cm
			09-Aug-2023		292	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW207	Electrical conductivity @20°C (lab)	TM256	12-Sep-2023		328	µS/cm
	pH (lab)		12-Jul-2023		8.16	pH units
			09-Aug-2023		7.92	pH units
			12-Sep-2023		8.23	pH units
	Total Alkalinity as CaCO3		12-Jul-2023		151	mg/l
	Total alkalinity as CaCO3 (filtered)		12-Jul-2023		150	mg/l
	Mecoprop	TM411	12-Jul-2023		<0.00004	mg/l

(1) The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

(2) Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.

(3) For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

(4) The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated; refer to laboratory data sheets for specific uncertainty.

(5) Depths reported as metres (m) are metres above base of ditch / stream.

(6) For details of the sampling method, frequency and parameters measured / analysed for, refer to the site Environmental Monitoring Management Plan (EMMP).

(7) Where blank, there is no defined compliance limit specified for the monitoring location / parameter.

Signature:.....

Date: 28 September 2023

(Authorised to sign as representative of
Operator)