

Operator: CWM Environmental Ltd
Permit: CP3735PB

Installation: Nantycaws Landfill Site
Form: Surface waters Q4 2020

Reporting of surface water monitoring for the period 01-Oct-2020 to 31-Dec-2020

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Ionic balance	Calulation	06-Oct-2020		-1.09	%
	Electrical conductivity (field)	Field	07-Oct-2020		117	µS/cm
			09-Nov-2020		292	µS/cm
			14-Dec-2020		294	µS/cm
	Water temperature		07-Oct-2020		13.3	°C
			09-Nov-2020		14.1	°C
			14-Dec-2020		8.3	°C
	Total organic carbon	SUB	06-Oct-2020		6.6	mg/l
	Total Suspended solids	TM022	06-Oct-2020		<2	mg/l
			10-Nov-2020		20.8	mg/l
			09-Dec-2020		<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	06-Oct-2020		95	mg/l
	Total Alkalinity as CaCO3		06-Oct-2020		92.4	mg/l
	Total alkalinity as CaCO3 (filtered)		06-Oct-2020		95	mg/l
	Ammoniacal Nitrogen as N	TM099	06-Oct-2020		<0.2	mg/l
			10-Nov-2020		2.74	mg/l
			09-Dec-2020		1.22	mg/l
	Electrical conductivity @20°C (lab)	TM120	06-Oct-2020		229	µS/cm
			10-Nov-2020		679	µS/cm
			09-Dec-2020		654	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Cadmium (filtered)	TM152	06-Oct-2020		<0.00008	mg/l
	Calcium (filtered)		06-Oct-2020		37.4	mg/l
	Chromium (filtered)		06-Oct-2020		<0.001	mg/l
	Iron (filtered)		06-Oct-2020		0.245	mg/l
	Lead (filtered)		06-Oct-2020		0.00039	mg/l
	Magnesium (filtered)		06-Oct-2020		3	mg/l
	Manganese (filtered)		06-Oct-2020		0.0173	mg/l
	Nickel (filtered)		06-Oct-2020		0.00138	mg/l
	Potassium (filtered)		06-Oct-2020		1.62	mg/l
	Sodium (filtered)		06-Oct-2020		7.12	mg/l
	Zinc (filtered)		06-Oct-2020		0.00581	mg/l
	4-Methylphenol	TM176	06-Oct-2020		<0.001	mg/l
	Diethyl phthalate		06-Oct-2020		<0.001	mg/l
	Chloride	TM184	06-Oct-2020		12.1	mg/l
			10-Nov-2020		49	mg/l
			09-Dec-2020		62.4	mg/l
	Nitrate as NO3		06-Oct-2020		9	mg/l
	Nitrite as NO2		06-Oct-2020		<0.05	mg/l
	Sulphate		06-Oct-2020		6.4	mg/l
	Total Oxidised Nitrogen as N		06-Oct-2020		2.04	mg/l
	Dichloromethane	TM208	06-Oct-2020		<0.003	mg/l
	pH (lab)	TM256	06-Oct-2020		7.68	pH units
			10-Nov-2020		7.49	pH units
			09-Dec-2020		5.55	pH units
	Mecoprop	TM411	06-Oct-2020		<0.00004	mg/l
SW202	Ionic balance	Calulation	06-Oct-2020		2.05	%
	Electrical conductivity (field)	Field	07-Oct-2020		246	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW202	Electrical conductivity (field)	Field	09-Nov-2020		208	µS/cm
			14-Dec-2020		238	µS/cm
	Water temperature		07-Oct-2020		12.9	°C
			09-Nov-2020		12.7	°C
			14-Dec-2020		8.2	°C
	Total organic carbon	SUB	06-Oct-2020		12.8	mg/l
	Total Suspended solids	TM022	06-Oct-2020		4.1	mg/l
			10-Nov-2020		5.53	mg/l
			09-Dec-2020		<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	06-Oct-2020		215	mg/l
	Total Alkalinity as CaCO3		06-Oct-2020		230	mg/l
	Total alkalinity as CaCO3 (filtered)		06-Oct-2020		215	mg/l
	Ammoniacal Nitrogen as N	TM099	06-Oct-2020		<0.2	mg/l
			10-Nov-2020		0.41	mg/l
			09-Dec-2020		0.762	mg/l
	Electrical conductivity @20°C (lab)	TM120	06-Oct-2020		510	µS/cm
			10-Nov-2020		402	µS/cm
			09-Dec-2020		640	µS/cm
	Cadmium (filtered)	TM152	06-Oct-2020		<0.00008	mg/l
	Calcium (filtered)		06-Oct-2020		93.6	mg/l
	Chromium (filtered)		06-Oct-2020		<0.001	mg/l
	Iron (filtered)		06-Oct-2020		0.17	mg/l
	Lead (filtered)		06-Oct-2020		0.000622	mg/l
	Magnesium (filtered)		06-Oct-2020		7.58	mg/l
	Manganese (filtered)		06-Oct-2020		0.0438	mg/l
	Nickel (filtered)		06-Oct-2020		0.00295	mg/l
	Potassium (filtered)		06-Oct-2020		23.9	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW202	Sodium (filtered)	TM152	06-Oct-2020		12.9	mg/l
	Zinc (filtered)		06-Oct-2020		0.0091	mg/l
	4-Methylphenol	TM176	06-Oct-2020		<0.001	mg/l
	Diethyl phthalate		06-Oct-2020		<0.001	mg/l
	Chloride	TM184	06-Oct-2020		24.2	mg/l
			10-Nov-2020		24.6	mg/l
			09-Dec-2020		61.3	mg/l
	Nitrate as NO3		06-Oct-2020		3.95	mg/l
	Nitrite as NO2		06-Oct-2020		<0.05	mg/l
	Sulphate		06-Oct-2020		55.9	mg/l
	Total Oxidised Nitrogen as N		06-Oct-2020		0.904	mg/l
	Dichloromethane	TM208	06-Oct-2020		<0.003	mg/l
	pH (lab)	TM256	06-Oct-2020		8	pH units
			10-Nov-2020		7.64	pH units
			09-Dec-2020		5.58	pH units
	Mecoprop	TM411	06-Oct-2020		<0.00004	mg/l
SW203	Electrical conductivity (field)	Field	07-Oct-2020		138	µS/cm
			09-Nov-2020		277	µS/cm
			14-Dec-2020		224	µS/cm
	Water temperature		07-Oct-2020		14.5	°C
			09-Nov-2020		17.6	°C
			14-Dec-2020		9.1	°C
	Total Suspended solids	TM022	06-Oct-2020		3.65	mg/l
			10-Nov-2020		<4	mg/l
			09-Dec-2020		<4	mg/l
	Ammoniacal Nitrogen as N	TM099	06-Oct-2020		<0.2	mg/l
			10-Nov-2020		<0.2	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW203	Ammoniacal Nitrogen as N	TM099	09-Dec-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	06-Oct-2020		406	µS/cm
			10-Nov-2020		595	µS/cm
			09-Dec-2020		368	µS/cm
	Cadmium (filtered)	TM152	06-Oct-2020		<0.00008	mg/l
	4-Methylphenol	TM176	06-Oct-2020		<0.001	mg/l
	Diethyl phthalate		06-Oct-2020		<0.001	mg/l
	Chloride	TM184	06-Oct-2020		50.8	mg/l
			10-Nov-2020		21.4	mg/l
			09-Dec-2020		38.6	mg/l
	Dichloromethane	TM208	06-Oct-2020		<0.003	mg/l
	pH (lab)	TM256	06-Oct-2020		7.73	pH units
			10-Nov-2020		7.65	pH units
			09-Dec-2020		5.37	pH units
	Mecoprop	TM411	06-Oct-2020		<0.00008	mg/l
SW204	Ionic balance	Calulation	06-Oct-2020		0.363	%
	Electrical conductivity (field)	Field	07-Oct-2020		267	µS/cm
			09-Nov-2020		185	µS/cm
			14-Dec-2020		213	µS/cm
			07-Oct-2020		12.5	°C
	Water temperature		09-Nov-2020		13.3	°C
			14-Dec-2020		9.6	°C
	Total organic carbon	SUB	06-Oct-2020		11.4	mg/l
	Total Suspended solids	TM022	06-Oct-2020		<2	mg/l
			10-Nov-2020		<4	mg/l
			09-Dec-2020		5.06	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	06-Oct-2020		180	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW204	Total Alkalinity as CaCO3	TM043	06-Oct-2020		177	mg/l
	Total alkalinity as CaCO3 (filtered)		06-Oct-2020		180	mg/l
	Ammoniacal Nitrogen as N	TM099	06-Oct-2020		<0.2	mg/l
			10-Nov-2020		<0.2	mg/l
			09-Dec-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	06-Oct-2020		468	µS/cm
			10-Nov-2020		385	µS/cm
			09-Dec-2020		416	µS/cm
	Cadmium (filtered)	TM152	06-Oct-2020		<0.00008	mg/l
	Calcium (filtered)		06-Oct-2020		80.4	mg/l
	Chromium (filtered)		06-Oct-2020		<0.001	mg/l
	Iron (filtered)		06-Oct-2020		0.128	mg/l
	Lead (filtered)		06-Oct-2020		0.000378	mg/l
	Magnesium (filtered)		06-Oct-2020		6.01	mg/l
	Manganese (filtered)		06-Oct-2020		0.0329	mg/l
	Nickel (filtered)		06-Oct-2020		0.00191	mg/l
	Potassium (filtered)		06-Oct-2020		18.3	mg/l
	Sodium (filtered)		06-Oct-2020		10.2	mg/l
	Zinc (filtered)		06-Oct-2020		0.00553	mg/l
	4-Methylphenol	TM176	06-Oct-2020		<0.001	mg/l
	Diethyl phthalate		06-Oct-2020		<0.001	mg/l
	Chloride	TM184	06-Oct-2020		19.8	mg/l
			10-Nov-2020		20.8	mg/l
			09-Dec-2020		22.1	mg/l
	Nitrate as NO3		06-Oct-2020		2.44	mg/l
	Nitrite as NO2		06-Oct-2020		<0.05	mg/l
	Sulphate		06-Oct-2020		56.7	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW204	Total Oxidised Nitrogen as N	TM184	06-Oct-2020		0.556	mg/l
	Dichloromethane	TM208	06-Oct-2020		<0.003	mg/l
	pH (lab)	TM256	06-Oct-2020		7.89	pH units
			10-Nov-2020		7.84	pH units
			09-Dec-2020		7.75	pH units
SW205a	Mecoprop	TM411	06-Oct-2020		<0.00004	mg/l
	Ionic balance	Calulation	06-Oct-2020		1.1	%
	Electrical conductivity (field)	Field	07-Oct-2020		142	µS/cm
			09-Nov-2020		319	µS/cm
			14-Dec-2020		274	µS/cm
	Water temperature		07-Oct-2020		12.1	°C
			09-Nov-2020		14.8	°C
			14-Dec-2020		8.8	°C
	Total organic carbon	SUB	06-Oct-2020		13.3	mg/l
	Total Suspended solids	TM022	06-Oct-2020	<70 mg/l	4.7	mg/l
			10-Nov-2020	<70 mg/l	25.4	mg/l
			09-Dec-2020	<70 mg/l	<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	06-Oct-2020		245	mg/l
	Total Alkalinity as CaCO3		06-Oct-2020		239	mg/l
	Total alkalinity as CaCO3 (filtered)		06-Oct-2020		245	mg/l
	Ammoniacal Nitrogen as N	TM099	06-Oct-2020	<1.0 mg/l	<0.2	mg/l
			10-Nov-2020	<1.0 mg/l	2.39	mg/l
			09-Dec-2020	<1.0 mg/l	0.652	mg/l
	Electrical conductivity @20°C (lab)	TM120	06-Oct-2020		592	µS/cm
			10-Nov-2020		665	µS/cm
			09-Dec-2020		619	µS/cm
	Cadmium (filtered)	TM152	06-Oct-2020	<0.0001 mg/l	<0.00008	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW205a	Calcium (filtered)	TM152	06-Oct-2020		101	mg/l
	Chromium (filtered)		06-Oct-2020		<0.001	mg/l
	Iron (filtered)		06-Oct-2020		0.136	mg/l
	Lead (filtered)		06-Oct-2020		0.000552	mg/l
	Magnesium (filtered)		06-Oct-2020		8.45	mg/l
	Manganese (filtered)		06-Oct-2020		0.0424	mg/l
	Nickel (filtered)		06-Oct-2020		0.00255	mg/l
	Potassium (filtered)		06-Oct-2020		27.2	mg/l
	Sodium (filtered)		06-Oct-2020		14.2	mg/l
	Zinc (filtered)		06-Oct-2020		0.012	mg/l
	4-Methylphenol	TM176	06-Oct-2020	<0.001 mg/l	<0.002	mg/l
	Diethyl phthalate		06-Oct-2020	<0.003 mg/l	<0.002	mg/l
	Chloride	TM184	06-Oct-2020	<150 mg/l	26.2	mg/l
			10-Nov-2020	<150 mg/l	47.3	mg/l
			09-Dec-2020	<150 mg/l	55.4	mg/l
	Nitrate as NO3		06-Oct-2020		5.77	mg/l
	Nitrite as NO2		06-Oct-2020		0.053	mg/l
	Sulphate		06-Oct-2020		56.7	mg/l
	Total Oxidised Nitrogen as N		06-Oct-2020		1.32	mg/l
	Dichloromethane	TM208	06-Oct-2020	<0.002 mg/l	<0.003	mg/l
SW206	pH (lab)	TM256	06-Oct-2020	6 to 9 pH units	8.08	pH units
			10-Nov-2020	6 to 9 pH units	7.63	pH units
			09-Dec-2020	6 to 9 pH units	5.57	pH units
	Mecoprop	TM411	06-Oct-2020	<0.000055 mg/l	<0.00004	mg/l
	Ionic balance	Calulation	06-Oct-2020		-0.33	%
	Electrical conductivity (field)	Field	07-Oct-2020		138	µS/cm
			09-Nov-2020		102	µS/cm

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SW206	Electrical conductivity (field)	Field	14-Dec-2020		124	µS/cm
	Water temperature		07-Oct-2020		12.3	°C
			09-Nov-2020		13.2	°C
			14-Dec-2020		10.2	°C
	Total organic carbon	SUB	06-Oct-2020		4.5	mg/l
	Total Suspended solids	TM022	06-Oct-2020	<50 mg/l	4.4	mg/l
			10-Nov-2020	<50 mg/l	6.76	mg/l
			09-Dec-2020	<50 mg/l	<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	06-Oct-2020		130	mg/l
	Total Alkalinity as CaCO3		06-Oct-2020		135	mg/l
	Total alkalinity as CaCO3 (filtered)		06-Oct-2020		130	mg/l
	Ammoniacal Nitrogen as N	TM099	06-Oct-2020	<1.0 mg/l	<0.2	mg/l
			10-Nov-2020	<1.0 mg/l	<0.2	mg/l
			09-Dec-2020	<1.0 mg/l	<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	06-Oct-2020		281	µS/cm
			10-Nov-2020		164	µS/cm
			09-Dec-2020		261	µS/cm
	Cadmium (filtered)	TM152	06-Oct-2020	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		06-Oct-2020		51.5	mg/l
	Chromium (filtered)		06-Oct-2020		<0.001	mg/l
	Iron (filtered)		06-Oct-2020		0.126	mg/l
	Lead (filtered)		06-Oct-2020		0.000481	mg/l
	Magnesium (filtered)		06-Oct-2020		3.66	mg/l
	Manganese (filtered)		06-Oct-2020		0.0253	mg/l
	Nickel (filtered)		06-Oct-2020		0.0014	mg/l
	Potassium (filtered)		06-Oct-2020		2.48	mg/l
	Sodium (filtered)		06-Oct-2020		7.57	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW206	Zinc (filtered)	TM152	06-Oct-2020		0.0104	mg/l
	4-Methylphenol	TM176	06-Oct-2020	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		06-Oct-2020	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	06-Oct-2020	<150 mg/l	11	mg/l
			10-Nov-2020	<150 mg/l	13.5	mg/l
			09-Dec-2020	<150 mg/l	10.9	mg/l
	Nitrate as NO3		06-Oct-2020		8.08	mg/l
	Nitrite as NO2		06-Oct-2020		<0.05	mg/l
	Sulphate		06-Oct-2020		11.7	mg/l
	Total Oxidised Nitrogen as N		06-Oct-2020		1.83	mg/l
	Dichloromethane	TM208	06-Oct-2020	<0.002 mg/l	<0.003	mg/l
	pH (lab)	TM256	06-Oct-2020	6 to 9 pH units	7.84	pH units
			10-Nov-2020	6 to 9 pH units	7.29	pH units
			09-Dec-2020	6 to 9 pH units	7.95	pH units
	Mecoprop	TM411	06-Oct-2020	<0.000055 mg/l	<0.00008	mg/l
SW207	Ionic balance	Calulation	06-Oct-2020		-1.42	%
	Electrical conductivity (field)	Field	07-Oct-2020		174	µS/cm
			09-Nov-2020		100	µS/cm
			14-Dec-2020		142	µS/cm
	Water temperature		07-Oct-2020		12.8	°C
			09-Nov-2020		13.9	°C
			14-Dec-2020		10	°C
	Total organic carbon	SUB	06-Oct-2020		8.4	mg/l
	Total Suspended solids	TM022	06-Oct-2020		3.3	mg/l
			10-Nov-2020		5.67	mg/l
			09-Dec-2020		<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	06-Oct-2020		165	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW207	Total Alkalinity as CaCO3	TM043	06-Oct-2020		165	mg/l
	Total alkalinity as CaCO3 (filtered)		06-Oct-2020		165	mg/l
	Ammoniacal Nitrogen as N	TM099	06-Oct-2020		<0.2	mg/l
			10-Nov-2020		<0.2	mg/l
			09-Dec-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	06-Oct-2020		382	µS/cm
			10-Nov-2020		214	µS/cm
			09-Dec-2020		269	µS/cm
	Cadmium (filtered)	TM152	06-Oct-2020		<0.00008	mg/l
	Calcium (filtered)		06-Oct-2020		63.1	mg/l
	Chromium (filtered)		06-Oct-2020		<0.001	mg/l
	Iron (filtered)		06-Oct-2020		0.17	mg/l
	Lead (filtered)		06-Oct-2020		0.000623	mg/l
	Magnesium (filtered)		06-Oct-2020		5.57	mg/l
	Manganese (filtered)		06-Oct-2020		0.0221	mg/l
	Nickel (filtered)		06-Oct-2020		0.00295	mg/l
	Potassium (filtered)		06-Oct-2020		13.1	mg/l
	Sodium (filtered)		06-Oct-2020		10.9	mg/l
	Zinc (filtered)		06-Oct-2020		0.00948	mg/l
	4-Methylphenol	TM176	06-Oct-2020		<0.001	mg/l
	Diethyl phthalate		06-Oct-2020		<0.001	mg/l
	Chloride	TM184	06-Oct-2020		20.9	mg/l
			10-Nov-2020		13.7	mg/l
			09-Dec-2020		13.8	mg/l
	Nitrate as NO3		06-Oct-2020		6.65	mg/l
	Nitrite as NO2		06-Oct-2020		0.073	mg/l
	Sulphate		06-Oct-2020		26.2	mg/l

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SW207	Total Oxidised Nitrogen as N	TM184	06-Oct-2020		1.53	mg/l
	Dichloromethane	TM208	06-Oct-2020		<0.003	mg/l
	pH (lab)	TM256	06-Oct-2020		7.9	pH units
			10-Nov-2020		7.81	pH units
			09-Dec-2020		8.06	pH units
	Mecoprop	TM411	06-Oct-2020		<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: 25 January 2021

(Authorised to sign as representative of
Operator)