

Operator: CWM Environmental Ltd
Permit: CP3735PB

Installation: Nantycaws Landfill Site
Form: Surface waters Q3 2020

Reporting of surface water monitoring for the period 01-Jul-2020 to 30-Sep-2020

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Ionic balance	Calulation	13-Jul-2020		1.46	%
	Electrical conductivity (field)	Field	06-Jul-2020		134	µS/cm
			10-Aug-2020		136	µS/cm
			08-Sep-2020		143	µS/cm
	Groundwater level/dip		06-Jul-2020		34mm	m
			10-Aug-2020		30mm	m
			08-Sep-2020		32mm	m
	Water temperature		06-Jul-2020		15	°C
			10-Aug-2020		17.2	°C
			08-Sep-2020		12.7	°C
	Total Suspended solids	TM022	13-Jul-2020		<2	mg/l
			12-Aug-2020		<2	mg/l
			14-Sep-2020		<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	13-Jul-2020		113	mg/l
	Total Alkalinity as CaCO3		13-Jul-2020		116	mg/l
	Total alkalinity as CaCO3 (filtered)		13-Jul-2020		113	mg/l
	Total organic carbon	TM090	13-Jul-2020		4.57	mg/l
	Ammoniacal Nitrogen as N	TM099	13-Jul-2020		<0.2	mg/l
			12-Aug-2020		<0.2	mg/l
			14-Sep-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	13-Jul-2020		256	µS/cm
			12-Aug-2020		271	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW201	Electrical conductivity @20°C (lab)	TM120	14-Sep-2020		299	µS/cm
	Cadmium (filtered)	TM152	13-Jul-2020		<0.00008	mg/l
	Calcium (filtered)		13-Jul-2020		49.6	mg/l
	Chromium (filtered)		13-Jul-2020		0.00102	mg/l
	Iron (filtered)		13-Jul-2020		0.144	mg/l
	Lead (filtered)		13-Jul-2020		0.000344	mg/l
	Magnesium (filtered)		13-Jul-2020		3.43	mg/l
	Manganese (filtered)		13-Jul-2020		0.0158	mg/l
	Nickel (filtered)		13-Jul-2020		0.000789	mg/l
	Potassium (filtered)		13-Jul-2020		1.3	mg/l
	Sodium (filtered)		13-Jul-2020		6.58	mg/l
	Zinc (filtered)		13-Jul-2020		0.0037	mg/l
	4-Methylphenol	TM176	13-Jul-2020		<0.001	mg/l
	Diethyl phthalate		13-Jul-2020		<0.001	mg/l
	Chloride	TM184	13-Jul-2020		11.9	mg/l
			12-Aug-2020		11.4	mg/l
			14-Sep-2020		12.1	mg/l
	Nitrate as NO3		13-Jul-2020		13	mg/l
	Nitrite as NO2		13-Jul-2020		<0.05	mg/l
	Sulphate		13-Jul-2020		8.6	mg/l
	Total Oxidised Nitrogen as N		13-Jul-2020		2.94	mg/l
	Dichloromethane	TM208	13-Jul-2020		<0.003	mg/l
	pH (lab)	TM256	13-Jul-2020		7.89	pH units
			12-Aug-2020		7.68	pH units
			14-Sep-2020		7.95	pH units
	Mecoprop	TM411	13-Jul-2020		<0.00004	mg/l
SW202	Ionic balance	Calulation	13-Jul-2020		-0.317	%
	Electrical conductivity (field)	Field	06-Jul-2020		248	µS/cm
			10-Aug-2020		158	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	08-Sep-2020		205	µS/cm
	Groundwater level/dip		06-Jul-2020		24mm	m
			10-Aug-2020		24mm	m
			08-Sep-2020		27mm	m
	Water temperature		06-Jul-2020		16.1	°C
			10-Aug-2020		19.2	°C
			08-Sep-2020		14.5	°C
	Total Suspended solids	TM022	13-Jul-2020		4.9	mg/l
			12-Aug-2020		2.8	mg/l
			14-Sep-2020		<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	13-Jul-2020		240	mg/l
	Total Alkalinity as CaCO3		13-Jul-2020		234	mg/l
	Total alkalinity as CaCO3 (filtered)		13-Jul-2020		240	mg/l
	Total organic carbon	TM090	13-Jul-2020		6.1	mg/l
	Ammoniacal Nitrogen as N	TM099	13-Jul-2020		<0.2	mg/l
			12-Aug-2020		<0.2	mg/l
			14-Sep-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	13-Jul-2020		513	µS/cm
			12-Aug-2020		349	µS/cm
			14-Sep-2020		435	µS/cm
	Cadmium (filtered)	TM152	13-Jul-2020		<0.00008	mg/l
	Calcium (filtered)		13-Jul-2020		94.2	mg/l
	Chromium (filtered)		13-Jul-2020		<0.001	mg/l
	Iron (filtered)		13-Jul-2020		0.177	mg/l
	Lead (filtered)		13-Jul-2020		0.000603	mg/l
	Magnesium (filtered)		13-Jul-2020		8.35	mg/l
	Manganese (filtered)		13-Jul-2020		0.0976	mg/l
	Nickel (filtered)		13-Jul-2020		0.00123	mg/l
	Potassium (filtered)		13-Jul-2020		14.6	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW202	Sodium (filtered)	TM152	13-Jul-2020		13.2	mg/l
	Zinc (filtered)		13-Jul-2020		0.00255	mg/l
	4-Methylphenol	TM176	13-Jul-2020		<0.001	mg/l
	Diethyl phthalate		13-Jul-2020		<0.001	mg/l
	Chloride	TM184	13-Jul-2020		25.4	mg/l
			12-Aug-2020		19.7	mg/l
			14-Sep-2020		22	mg/l
	Nitrate as NO3		13-Jul-2020		4.72	mg/l
	Nitrite as NO2		13-Jul-2020		<0.05	mg/l
	Sulphate		13-Jul-2020		37.5	mg/l
	Total Oxidised Nitrogen as N		13-Jul-2020		1.08	mg/l
	Dichloromethane	TM208	13-Jul-2020		<0.003	mg/l
	pH (lab)	TM256	13-Jul-2020		7.94	pH units
			12-Aug-2020		7.77	pH units
			14-Sep-2020		8.07	pH units
	Mecoprop	TM411	13-Jul-2020		<0.00004	mg/l
SW203	Electrical conductivity (field)	Field	06-Jul-2020		253	µS/cm
			10-Aug-2020		DRY	µS/cm
			08-Sep-2020		DRY	µS/cm
	Groundwater level/dip		06-Jul-2020		27mm	m
			10-Aug-2020		DRY	m
			08-Sep-2020		DRY	m
	Water temperature		06-Jul-2020		16.1	°C
			10-Aug-2020		DRY	°C
			08-Sep-2020		DRY	°C
	Total Suspended solids	TM022	13-Jul-2020		5.85	mg/l
	Ammoniacal Nitrogen as N	TM099	13-Jul-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	13-Jul-2020		512	µS/cm
	Cadmium (filtered)	TM152	13-Jul-2020		<0.00008	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW203	4-Methylphenol	TM176	13-Jul-2020		<0.001	mg/l
	Diethyl phthalate		13-Jul-2020		<0.001	mg/l
	Chloride	TM184	13-Jul-2020		26.5	mg/l
	Dichloromethane	TM208	13-Jul-2020		<0.003	mg/l
	pH (lab)	TM256	13-Jul-2020		8.17	pH units
SW204	Mecoprop	TM411	13-Jul-2020		<0.00004	mg/l
	Ionic balance	Calulation	13-Jul-2020		0.962	%
	Electrical conductivity (field)	Field	06-Jul-2020		212	µS/cm
			10-Aug-2020		186	µS/cm
			08-Sep-2020		174	µS/cm
	Groundwater level/dip		06-Jul-2020		17mm	m
			10-Aug-2020		16mm	m
			08-Sep-2020		16mm	m
	Water temperature		06-Jul-2020		15.6	°C
			10-Aug-2020		18.3	°C
			08-Sep-2020		15.2	°C
	Total Suspended solids	TM022	13-Jul-2020		<2	mg/l
			12-Aug-2020		2.1	mg/l
			14-Sep-2020		<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	13-Jul-2020		206	mg/l
	Total Alkalinity as CaCO3		13-Jul-2020		207	mg/l
	Total alkalinity as CaCO3 (filtered)		13-Jul-2020		206	mg/l
	Total organic carbon	TM090	13-Jul-2020		7.32	mg/l
	Ammoniacal Nitrogen as N	TM099	13-Jul-2020		<0.2	mg/l
			12-Aug-2020		<0.2	mg/l
			14-Sep-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	13-Jul-2020		445	µS/cm
			12-Aug-2020		395	µS/cm
			14-Sep-2020		368	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ⁽¹⁾ ⁽⁴⁾	Unit ⁽⁵⁾
SW204	Cadmium (filtered)	TM152	13-Jul-2020		<0.00008	mg/l
	Calcium (filtered)		13-Jul-2020		89.5	mg/l
	Chromium (filtered)		13-Jul-2020		<0.001	mg/l
	Iron (filtered)		13-Jul-2020		0.0666	mg/l
	Lead (filtered)		13-Jul-2020		<0.0002	mg/l
	Magnesium (filtered)		13-Jul-2020		4.97	mg/l
	Manganese (filtered)		13-Jul-2020		0.0659	mg/l
	Nickel (filtered)		13-Jul-2020		0.00176	mg/l
	Potassium (filtered)		13-Jul-2020		11.5	mg/l
	Sodium (filtered)		13-Jul-2020		7.72	mg/l
	Zinc (filtered)		13-Jul-2020		0.00175	mg/l
	4-Methylphenol	TM176	13-Jul-2020		<0.001	mg/l
	Diethyl phthalate		13-Jul-2020		<0.001	mg/l
	Chloride	TM184	13-Jul-2020		12.7	mg/l
			12-Aug-2020		12.2	mg/l
			14-Sep-2020		12.1	mg/l
	Nitrate as NO3		13-Jul-2020		1.82	mg/l
	Nitrite as NO2		13-Jul-2020		<0.05	mg/l
	Sulphate		13-Jul-2020		42.9	mg/l
	Total Oxidised Nitrogen as N		13-Jul-2020		0.419	mg/l
	Dichloromethane	TM208	13-Jul-2020		<0.003	mg/l
	pH (lab)		13-Jul-2020		8.01	pH units
		TM256	12-Aug-2020		7.9	pH units
			14-Sep-2020		8.11	pH units
	Mecoprop	TM411	13-Jul-2020		<0.00004	mg/l
SW205a	Ionic balance	Calulation	13-Jul-2020		-1.27	%
	Electrical conductivity (field)	Field	06-Jul-2020		250	µS/cm
			10-Aug-2020		256	µS/cm
			08-Sep-2020		217	µS/cm

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW205a	Groundwater level/dip	Field	06-Jul-2020		38mm	m
			10-Aug-2020		40mm	m
			08-Sep-2020		42mm	m
	Water temperature		06-Jul-2020		15.5	°C
			10-Aug-2020		19.3	°C
			08-Sep-2020		13.5	°C
	Total Suspended solids	TM022	13-Jul-2020	<70 mg/l	3.5	mg/l
			12-Aug-2020	<70 mg/l	31.5	mg/l
			14-Sep-2020	<70 mg/l	<4	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	13-Jul-2020		195	mg/l
	Total Alkalinity as CaCO3		13-Jul-2020		195	mg/l
	Total alkalinity as CaCO3 (filtered)		13-Jul-2020		195	mg/l
	Total organic carbon	TM090	13-Jul-2020		14.5	mg/l
	Ammoniacal Nitrogen as N	TM099	13-Jul-2020	<1.0 mg/l	<0.2	mg/l
			12-Aug-2020	<1.0 mg/l	<0.2	mg/l
			14-Sep-2020	<1.0 mg/l	<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	13-Jul-2020		529	µS/cm
			12-Aug-2020		552	µS/cm
			14-Sep-2020		467	µS/cm
	Cadmium (filtered)	TM152	13-Jul-2020	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		13-Jul-2020		80.8	mg/l
	Chromium (filtered)		13-Jul-2020		<0.001	mg/l
	Iron (filtered)		13-Jul-2020		0.166	mg/l
	Lead (filtered)		13-Jul-2020		0.000208	mg/l
	Magnesium (filtered)		13-Jul-2020		8.18	mg/l
	Manganese (filtered)		13-Jul-2020		0.0446	mg/l
	Nickel (filtered)		13-Jul-2020		0.00215	mg/l
	Potassium (filtered)		13-Jul-2020		31	mg/l
	Sodium (filtered)		13-Jul-2020		15.7	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW205a	Zinc (filtered)	TM152	13-Jul-2020		0.00172	mg/l
	4-Methylphenol	TM176	13-Jul-2020	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		13-Jul-2020	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	13-Jul-2020	<150 mg/l	31.7	mg/l
			12-Aug-2020	<150 mg/l	30.1	mg/l
			14-Sep-2020	<150 mg/l	26.3	mg/l
	Nitrate as NO3		13-Jul-2020		2.04	mg/l
	Nitrite as NO2		13-Jul-2020		0.094	mg/l
	Sulphate		13-Jul-2020		72.7	mg/l
	Total Oxidised Nitrogen as N		13-Jul-2020		0.491	mg/l
	Dichloromethane	TM208	13-Jul-2020	<0.002 mg/l	<0.003	mg/l
	pH (lab)	TM256	13-Jul-2020	6 to 9 pH units	8.2	pH units
			12-Aug-2020	6 to 9 pH units	7.96	pH units
			14-Sep-2020	6 to 9 pH units	8.13	pH units
	Mecoprop	TM411	13-Jul-2020	<0.000055 mg/l	<0.00008	mg/l
SW206	Ionic balance	Calulation	13-Jul-2020		-6.33	%
	Electrical conductivity (field)	Field	06-Jul-2020		143	µS/cm
			10-Aug-2020		158	µS/cm
			08-Sep-2020		150	µS/cm
	Groundwater level/dip		06-Jul-2020		38mm	m
			10-Aug-2020		36mm	m
			08-Sep-2020		38mm	m
	Water temperature		06-Jul-2020		14.9	°C
			10-Aug-2020		17.8	°C
			08-Sep-2020		11.4	°C
	Total Suspended solids	TM022	13-Jul-2020	<50 mg/l	6.45	mg/l
			12-Aug-2020	<50 mg/l	6.8	mg/l
			14-Sep-2020	<50 mg/l	5.48	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	13-Jul-2020		140	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW206	Total Alkalinity as CaCO3	TM043	13-Jul-2020		146	mg/l
	Total alkalinity as CaCO3 (filtered)		13-Jul-2020		150	mg/l
	Total organic carbon		TM090	13-Jul-2020		<3
	Ammoniacal Nitrogen as N	TM099	13-Jul-2020	<1.0 mg/l	<0.2	mg/l
			12-Aug-2020	<1.0 mg/l	<0.2	mg/l
			14-Sep-2020	<1.0 mg/l	<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	13-Jul-2020		292	µS/cm
			12-Aug-2020		306	µS/cm
			14-Sep-2020		313	µS/cm
	Cadmium (filtered)	TM152	13-Jul-2020	<0.0001 mg/l	<0.00008	mg/l
	Calcium (filtered)		13-Jul-2020		51.1	mg/l
	Chromium (filtered)		13-Jul-2020		<0.001	mg/l
	Iron (filtered)		13-Jul-2020		0.102	mg/l
	Lead (filtered)		13-Jul-2020		<0.0002	mg/l
	Magnesium (filtered)		13-Jul-2020		3.86	mg/l
	Manganese (filtered)		13-Jul-2020		0.0263	mg/l
	Nickel (filtered)		13-Jul-2020		<0.0004	mg/l
	Potassium (filtered)		13-Jul-2020		2.28	mg/l
	Sodium (filtered)		13-Jul-2020		6.88	mg/l
	Zinc (filtered)		13-Jul-2020		0.0034	mg/l
	4-Methylphenol	TM176	13-Jul-2020	<0.001 mg/l	<0.001	mg/l
	Diethyl phthalate		13-Jul-2020	<0.003 mg/l	<0.001	mg/l
	Chloride	TM184	13-Jul-2020	<150 mg/l	10.9	mg/l
			12-Aug-2020	<150 mg/l	10.1	mg/l
			14-Sep-2020	<150 mg/l	10	mg/l
	Nitrate as NO3		13-Jul-2020		7.06	mg/l
	Nitrite as NO2		13-Jul-2020		<0.05	mg/l
	Sulphate		13-Jul-2020		11.6	mg/l
	Total Oxidised Nitrogen as N		13-Jul-2020		1.6	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW206	Dichloromethane	TM208	13-Jul-2020	<0.002 mg/l	<0.003	mg/l
	pH (lab)	TM256	13-Jul-2020	6 to 9 pH units	8.08	pH units
			12-Aug-2020	6 to 9 pH units	7.88	pH units
			14-Sep-2020	6 to 9 pH units	8.18	pH units
	Mecoprop	TM411	13-Jul-2020	<0.000055 mg/l	<0.00008	mg/l
SW207	Ionic balance	Calulation	13-Jul-2020		-0.598	%
	Electrical conductivity (field)	Field	06-Jul-2020		42	µS/cm
			10-Aug-2020		179	µS/cm
			08-Sep-2020		145	µS/cm
	Groundwater level/dip		06-Jul-2020		45mm	m
			10-Aug-2020		45mm	m
			08-Sep-2020		43mm	m
	Water temperature		06-Jul-2020		19.1	°C
			10-Aug-2020		22.2	°C
			08-Sep-2020		12.4	°C
	Total Suspended solids	TM022	13-Jul-2020		4.79	mg/l
			12-Aug-2020		2.65	mg/l
	Bicarbonate alkalinity as CaCO3 (filtered)	TM043	13-Jul-2020		172	mg/l
	Total Alkalinity as CaCO3		13-Jul-2020		170	mg/l
	Total alkalinity as CaCO3 (filtered)		13-Jul-2020		172	mg/l
	Total organic carbon	TM090	13-Jul-2020		11.6	mg/l
	Ammoniacal Nitrogen as N	TM099	13-Jul-2020		<0.2	mg/l
			12-Aug-2020		<0.2	mg/l
			14-Sep-2020		<0.2	mg/l
	Electrical conductivity @20°C (lab)	TM120	13-Jul-2020		453	µS/cm
			12-Aug-2020		393	µS/cm
			14-Sep-2020		321	µS/cm
	Cadmium (filtered)	TM152	13-Jul-2020		<0.00008	mg/l
	Calcium (filtered)		13-Jul-2020		75.3	mg/l

Monitoring location	Substance / parameter ⁽⁶⁾	Test method ⁽²⁾	Date ⁽³⁾	Compliance limit ⁽⁷⁾	Result ^{(1) (4)}	Unit ⁽⁵⁾
SW207	Chromium (filtered)	TM152	13-Jul-2020		<0.001	mg/l
	Iron (filtered)		13-Jul-2020		0.145	mg/l
	Lead (filtered)		13-Jul-2020		0.000407	mg/l
	Magnesium (filtered)		13-Jul-2020		6.24	mg/l
	Manganese (filtered)		13-Jul-2020		0.0375	mg/l
	Nickel (filtered)		13-Jul-2020		0.00171	mg/l
	Potassium (filtered)		13-Jul-2020		20.2	mg/l
	Sodium (filtered)		13-Jul-2020		11.7	mg/l
	Zinc (filtered)		13-Jul-2020		0.00325	mg/l
	4-Methylphenol	TM176	13-Jul-2020		<0.001	mg/l
	Diethyl phthalate		13-Jul-2020		<0.001	mg/l
	Chloride	TM184	13-Jul-2020		24.7	mg/l
			12-Aug-2020		28.2	mg/l
			14-Sep-2020		12.2	mg/l
	Nitrate as NO3		13-Jul-2020		5.11	mg/l
	Nitrite as NO2		13-Jul-2020		0.058	mg/l
	Sulphate		13-Jul-2020		54.5	mg/l
	Total Oxidised Nitrogen as N		13-Jul-2020		1.17	mg/l
	Dichloromethane	TM208	13-Jul-2020		<0.003	mg/l
	pH (lab)	TM256	13-Jul-2020		8.05	pH units
			12-Aug-2020		7.87	pH units
	Mecoprop	TM411	13-Jul-2020		5.5e-05	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: 29 September 2020

(Authorised to sign as representative of Operator)