

Permit Number:	TP3835LV		Operator:		SI Green UK Limited		
Installation:	Cwmrhydyceirw Quarry						
Schedule 4 - Emissions and monitoring			Table S4.5 and Table 5a from the Updated Management Report dated January 2021				
Reporting of emissions to water (other than to sewer) for the period from			Quarter 4	01 October - 31 December		2021	
Groundwater monitoring borehole		Units	CWMS01	CWMS02	CWMS03A	CWMS03B	CWMS05
Monthly							
Water level	October	mAOD		32			
Water level	November	mAOD		32			
Water level	December	mAOD		32			
Analyte	Emission limit value	Units					
Monthly - CWMS02 only							
October							
Sample collection date	28/10/2021						
Suspended solids	40	mg/l		6			
pH	>6 - <9	pH units		7.8			
Ammoniacal Nitrogen as N	2.1	mg/l		0.27			
Chloride as Cl	221	mg/l		24.1			
Cadmium , Total as Cd	0.2	ug/l		<0.11			
Nickel , Total as Ni	50	ug/l		<1.5			
Naphthalene	1	ug/l		<0.05			
Pentachlorophenol	1	ug/l		<0.05			
November							
Sample collection date	30/11/2022						
Suspended solids	40	mg/l		3.2			
pH	>6 - <9	pH units		7.5			
Ammoniacal Nitrogen as N	2.1	mg/l		0.41			
Chloride as Cl	221	mg/l		49.2			
Cadmium , Total as Cd	0.2	ug/l		<0.11			
Nickel , Total as Ni	50	ug/l		<1.5			
Naphthalene	1	ug/l		<0.05			
Pentachlorophenol	1	ug/l		<0.50			
December							
Sample collection date	16/12/2021						
Suspended solids	40	mg/l		6.8			
pH	>6 - <9	pH units		7.2			
Ammoniacal Nitrogen as N	2.1	mg/l		0.7			
Chloride as Cl	221	mg/l		38.2			
Cadmium , Total as Cd	0.2	ug/l		<0.11			
Nickel , Total as Ni	50	ug/l		<1.5			
Naphthalene	1	ug/l		<0.05			
Pentachlorophenol	1	ug/l		<0.05			
Quarterly							
Dissolved Oxygen, Fixed	not set	mg/l	10.4	2.5	10.1	10.8	0.2
pH	>6 - <9	pH units	8	7.5	8.2	8.2	7.8
Conductivity- Electrical 20C	not set	uS/cm	319	638	314	315	272
Suspended solids	40	mg/l	<1.5	3.2	<1.5	2.4	7.6
Ammoniacal Nitrogen as N	2.1	mg/l	<0.01	0.41	<0.01	<0.01	<0.01
BOD + ATU (5 day)	not set	mg/l	1.9	3.8	2.7	2.7	7.6
COD (Total)	not set	mg/l	19	15	18	17	21
Chloride as Cl	221	mg/l	55	49.2	49.4	48.8	20.6
Six monthly							
Alkalinity as CaCO3	not set	mg/l	65.4	233	69.5	67.9	91.8
Sulphate as SO4	not set	mg/l	15.7	47.8	14.6	15.1	20.9
Calcium , Total as Ca	not set	mg/l	28.1	83.3	28.5	28.9	39.3
Sodium , Total as Na	not set	mg/l	29.6	18.7	28.5	28.2	11.3
Potassium , Total as K	not set	mg/l	2	9.7	2	2.1	2
Magnesium, Total as Mg	not set	mg/l	3.2	18.3	3.1	3.1	3.4
Iron, Total as Fe	not set	mg/l	71.7	28.4	94.7	87.5	379
Manganese , Total as Mn	not set	mg/l	6.3	175	6.6	5.8	3.9
Cadmium , Total as Cd	not set	mg/l	<0.11	<0.11	<0.11	<0.11	<0.11
Mercury, Total as Hg	not set	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
Chromium , Total as Cr	not set	mg/l	6.2	10.3	7	6.5	6.9
Copper , Total as Cu	not set	mg/l	5.1	2.8	4.7	4.8	2.5
Lead , Total as Pb	not set	mg/l	<4.1	<4.1	<4.1	<4.1	<4.1
Nickel , Total as Ni	not set	mg/l	<1.5	<1.5	<1.5	<1.5	<1.5
Zinc , Total as Zn	not set	mg/l	21.7	<1.1	12.1	13.6	4.8
Total cyanides	not set	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
TPH	not set	mg/l	<0.20	<0.20	<0.20	<0.20	<0.20
Total phenols	not set	mg/l	0.06	0.1	0.02	0.02	<0.02
TOC as C	not set	mg/l	31.7	14.8	28.4	21.7	20.3
Nitrogen, Total Oxidised as N	not set	mg/l	0.74	0.08	0.7	0.75	0.2
Annual							
Naphthalene	not set	ug/l	0.24	<0.05	<0.05	<0.05	<0.05
Pentachlorophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	not set	ug/l	0.45	0.43	0.48	0.52	0.33
Selenium	not set	ug/l	0.93	<0.50	0.78	0.84	<0.50
Antimony	not set	ug/l	0.71	0.6	<0.50	<0.50	<0.50
TPH	not set	mg/l	<0.20	<0.20	<0.20	<0.20	<0.20
Mecoprop	not set	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1
Phenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2-chlorophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2-methylphenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
4-methylphenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dichlorophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50

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Reporting of emissions to water (other than to sewer) for the period from			Quarter 4		01 October - 31 December		2021
Groundwater monitoring borehole			CWMS01	CWMS02	CWMS03A	CWMS03B	CWMS05
Monthly		Units					
Water level	October	mAOD		32			
Water level	November	mAOD		32			
Water level	December	mAOD		32			
Analyte	Emission limit value	Units					
2,4,6-trichlorophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Acenaphthylene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
2,3,4,6-tetrachlorophenol	not set	ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Fluorene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	not set	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05
Alpha-BHC	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDT	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Ketone	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Methoxychlor	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Bromacil	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Butachlor	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Butylate	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorpropham	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Cycloate	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Devrinon	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Diazinon	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Dichlorvos	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethyl-p	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrophenylphosphate	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Diphenamid	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton Sulfone	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
EPTC	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Metolachlor	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Metribuzin	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Mevinphos	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
MGK	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Molinate	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Pebulate	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryne	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Prophos	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Propyzamide	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Terbacil	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Terbufos	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryne	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Tributylphosphoro-trithioite	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Vernolate	not set	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Organotin (Total as TBTO)	not set	ug/l	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	not set	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	not set	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	not set	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	not set	ug/l	<5	<5	<5	<5	<5
Chloroethane	not set	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0
Trichlorofluoromethane	not set	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	not set	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Trans 1,2-Dichloroethene	not set	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0

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Schedule 4 - Emissions and monitoring		Table S4.5 and Table 5a from the Updated Management Report dated January 2021	
Reporting of emissions to water (other than to sewer) for the period from		Quarter 4	01 October - 31 December
		2021	
Groundwater monitoring borehole		CWMS01	CWMS02
Monthly	Units		
Water level	October	mAOD	32
Water level	November	mAOD	32
Water level	December	mAOD	32
Analyte	Emission limit value	Units	
1,1-Dichloroethane	not set	ug/l	<1.0
Cis 1,2-Dichloroethene	not set	ug/l	<1.0
Bromochloromethane	not set	ug/l	<5
Trichloromethane	not set	ug/l	<1.0
1,1,1-Trichloroethane	not set	ug/l	<1.0
Tetrachloromethane	not set	ug/l	<1.0
1,1-Dichloropropene	not set	ug/l	<1.0
Benzene	not set	ug/l	<1.0
1,2-Dichloroethane	not set	ug/l	<2.0
Trichloroethene	not set	ug/l	<1.0
1,2-Dichloropropane	not set	ug/l	<1.0
Dibromomethane	not set	ug/l	<10
Bromodichloromethane	not set	ug/l	<5
cis-1,3-Dichloropropene	not set	ug/l	<10
Toluene	not set	ug/l	<1.0
Trans-1,3-Dichloropropene	not set	ug/l	<10
1,1,2-Trichloroethane	not set	ug/l	<10
Tetrachloroethene	not set	ug/l	<1.0
1,3-Dichloropropane	not set	ug/l	<2.0
Dibromochloromethane	not set	ug/l	<10
1,2-Dibromoethane	not set	ug/l	<5
Chlorobenzene	not set	ug/l	<1.0
1,1,1,2-Tetrachloroethane	not set	ug/l	<2.0
Ethylbenzene	not set	ug/l	<1.0
m&p-Xylene	not set	ug/l	<1.0
o-Xylene	not set	ug/l	<1.0
Styrene	not set	ug/l	<1.0
Tribromomethane	not set	ug/l	<1.0
Isopropylbenzene	not set	ug/l	<1.0
Bromobenzene	not set	ug/l	<1.0
1,2,3-Trichloropropane	not set	ug/l	<1.0
N-Propylbenzene	not set	ug/l	<1.0
2-Chlorotoluene	not set	ug/l	<1.0
1,3,5-Trimethylbenzene	not set	ug/l	<50
4-Chlorotoluene	not set	ug/l	<1.0
Tert-Butylbenzene	not set	ug/l	<1.0
1,2,4-Trimethylbenzene	not set	ug/l	<1.0
Sec-butylbenzene	not set	ug/l	<1.0
1,3-Dichlorobenzene	not set	ug/l	<1.0
4-Isopropyltoluene	not set	ug/l	<1.0
1,4-Dichlorobenzene	not set	ug/l	<1.0
N-Butylbenzene	not set	ug/l	<1.0
1,2-Dichlorobenzene	not set	ug/l	<1.0
1,2-Dibromo-3-Chloropropane	not set	ug/l	<50
1,2,4-Trichlorobenzene	not set	ug/l	<1.0
Hexachlorobutadiene	not set	ug/l	<1.0
1,2,3-Trichlorobenzene	not set	ug/l	<2.0
Methyl Tert-Butyl Ether	not set	ug/l	<1.0
PCB 28	not set	ug/l	<0.010
PCB 52	not set	ug/l	<0.010
PCB 90 + 101	not set	ug/l	<0.010
PCB 118	not set	ug/l	<0.010
PCB 153	not set	ug/l	<0.010
PCB 180	not set	ug/l	<0.010
Total PCBs (7 Congeners)	not set	ug/l	<0.10
Tellurium	not set	ug/l	<1.0
Thallium	not set	ug/l	<1.0
Uranium	not set	ug/l	<1.0

[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.

Signed ...Beth Jones.....
Date....01.02.2022.....
(Authorised to sign as representative of Operator)

Permit Number:	TP3835LV			Operator:		SI Green UK Limited	
Installation:	Cwmrhydyceirw Quarry						
Schedule 4 - Emissions and monitoring				Table S4.5 and Table 5a from the Updated Management Report dated January 2021			
Reporting of emissions to water (other than to sewer) for the period from				Quarter 3	01 July - 30 August		2021
Emission Point	Substance /Parameter	Emission Limit Value/Unit	Reference Period	Result ^[1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
CWMS02	Water Level	m	Spot Sample	32	Methods used shall be in accordance with Agency guidance document 'Guidance on monitoring of landfill leachate, groundwater and surface water (LFTGN02)	29/10/2021	Accuracy of testing equipment
				32		26/11/2021	
				32		31/12/2021	
CWMS02	Discharge volume	m³	Spot Sample	27,312		29/10/2021	
				17,690		26/11/2021	
				22,851		31/12/2021	
CWMS02	Flow Rate	m³/hr	Spot Sample	40.64		29/10/2021	
				26.32		26/11/2021	
				27.20		31/12/2021	

[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.

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[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed ...Beth Jones.....

Date...01.02.2022.....

(Authorised to sign as representative of Operator)