

Reporting of Emission to Groundwater for the period from 1st July 2021 to 31st December 2021

Operator : RWE Generation UK plc

Form: Groundwater1

Location: Aberthaw Quarry Ash Disposal Site

Permit/Variation Number: BP3339BH

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_01A	Aluminium, Dissolved		<3.5 ug/l		01/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		<0.20 ug/l				
	Boron, Dissolved		81 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		130 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		6 mg/l				
	Manganese, Dissolved		<0.20 ug/l				
	Molybdenum, Dissolved		2.95 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		<0.15 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		290 mg/l				
	Electrical Conductivity at 20C		602 uS/cm				
	Potassium, Dissolved		1.6 mg/l				
	Sodium, Dissolved		17 mg/l				
	Sulphate, Dissolved		26.4 mg/l				
	Total Oxidised Nitrogen		2.5 mg/l				
	Chloride		27.3 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen		<0.06 mg/l				
	Total Organic Carbon		1.9 mg/l				
	pH		7.5 pH Units				
	Nitrate		2.5 mg/l				
	Ionic Balance		4.3 %				
	Electrical Conductivity		544 µS/cm	Field Measurements			
Temperature		12.6 deg C					
Dissolved Oxygen		1.6 mg/l					
pH		3.4 pH Units					
Groundwater Level		25.61 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_01A	Aluminium, Dissolved		<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		0.23 ug/l				
	Boron, Dissolved		267 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		130 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		6.7 mg/l				
	Manganese, Dissolved		2.4 ug/l				
	Molybdenum, Dissolved		3.26 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		<0.15 ug/l				
	Mercury, Dissolved		0.01 ug/l				
	Total Alkalinity as CaCO3		283 mg/l				
	Electrical Conductivity at 25C		608 uS/cm				
	Potassium, Dissolved		1.6 mg/l				
	Sodium, Dissolved		19 mg/l				
	Sulphate, Dissolved		27.6 mg/l				
	Total Oxidised Nitrogen		2.2 mg/l				
	Chloride		28.3 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen		<0.06 mg/l				
	Total Organic Carbon		2.1 mg/l				
	pH		7.9 pH Units				
	Nitrate		2.2 mg/l				
	Ionic Balance		5.8 %				
	Electrical Conductivity		522 µS/cm	Field Measurements			
Temperature		12.2 deg C					
Dissolved Oxygen		2.6 mg/l					
pH		7.4 pH Units					
Groundwater Level		26.70 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_01B	Aluminium, Dissolved		<3.5 ug/l		01/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		<0.20 ug/l				
	Boron, Dissolved		93 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		130 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		6.8 mg/l				
	Manganese, Dissolved		0.39 ug/l				
	Molybdenum, Dissolved		4.7 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		<0.15 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		262 mg/l				
	Electrical Conductivity at 25C		605 uS/cm				
	Potassium, Dissolved		1.4 mg/l				
	Sodium, Dissolved		17 mg/l				
	Sulphate, Dissolved		28.6 mg/l				
	Total Oxidised Nitrogen		2.3 mg/l				
	Chloride		28.2 mg/l				
	Fluoride		0.1 mg/l				
	Ammoniacal Nitrogen		<0.06 mg/l				
	Total Organic Carbon		1.7 mg/l				
	pH		7.5 pH Units				
	Nitrate		2.3 mg/l				
	Ionic Balance		8.2 %				
	Electrical Conductivity		540 µS/cm	Field Measurements			
Temperature		12.5 deg C					
Dissolved Oxygen		1.4 mg/l					
pH		7.3 pH Units					
Groundwater Level		24.18 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_01B	Aluminium, Dissolved		<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		<0.20 ug/l				
	Boron, Dissolved		261 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		130 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		7.1 mg/l				
	Manganese, Dissolved		2.8 ug/l				
	Molybdenum, Dissolved		5.55 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		<0.15 ug/l				
	Mercury, Dissolved		0.03 ug/l				
	Total Alkalinity as CaCO3		278 mg/l				
	Electrical Conductivity at 25C		613 uS/cm				
	Potassium, Dissolved		1.5 mg/l				
	Sodium, Dissolved		18 mg/l				
	Sulphate, Dissolved		29.9 mg/l				
	Total Oxidised Nitrogen		2.2 mg/l				
	Chloride		27.9 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen		<0.06 mg/l				
	Total Organic Carbon		1.8 mg/l				
	pH		7.9 pH Units				
	Nitrate		2.2 mg/l				
	Ionic Balance		6.2 %				
	Electrical Conductivity		534 µS/cm	Field Measurements			
Temperature		12.9 deg C					
Dissolved Oxygen		2.0 mg/l					
pH		7.3 pH Units					
Groundwater Level		25.27 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_02A	Aluminium, Dissolved		<3.5 ug/l		01/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		1.3 ug/l				
	Arsenic Dissolved		0.35 ug/l				
	Boron, Dissolved		261 ug/l				
	Cadmium, Dissolved		0.03 ug/l				
	Calcium, Dissolved		150 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		25 mg/l				
	Manganese, Dissolved		21 ug/l				
	Molybdenum, Dissolved		3.25 ug/l				
	Nickel, Dissolved		1.7 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		0.36 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		390 mg/l				
	Electrical Conductivity at 25C		800 uS/cm				
	Potassium, Dissolved		1.3 mg/l				
	Sodium, Dissolved		21 mg/l				
	Sulphate, Dissolved		57.9 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		32.2 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen		0.41 mg/l				
	Total Organic Carbon		3.2 mg/l				
	pH		7.3 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		2.8 %				
	Electrical Conductivity		726 µS/cm	Field Measurements			
Temperature		12.5 deg C					
Dissolved Oxygen		0.4 mg/l					
pH		7.1 pH Units					
Groundwater Level		26.34 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_02A	Aluminium, Dissolved		<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		0.88 ug/l				
	Boron, Dissolved		371 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		170 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		23 ug/l				
	Magnesium, Dissolved		31 mg/l				
	Manganese, Dissolved		61 ug/l				
	Molybdenum, Dissolved		<2.50 ug/l				
	Nickel, Dissolved		1.9 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		0.18 ug/l				
	Mercury, Dissolved		0.04 ug/l				
	Total Alkalinity as CaCO3		468 mg/l				
	Electrical Conductivity at 25C		924 uS/cm				
	Potassium, Dissolved		2 mg/l				
	Sodium, Dissolved		30 mg/l				
	Sulphate, Dissolved		66.5 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		32.5 mg/l				
	Fluoride		0.2 mg/l				
	Ammoniacal Nitrogen		0.76 mg/l				
	Total Organic Carbon		4.2 mg/l				
	pH		7.6 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		3.0 %				
	Electrical Conductivity		814 µS/cm	Field Measurements			
Temperature		12.5 deg C					
Dissolved Oxygen		0.2 mg/l					
pH		7.1 pH Units					
Groundwater Level		27.76 mAOD					

	Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_02B	Aluminium, Dissolved		<3.5 ug/l		01/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		2.2 ug/l				
	Arsenic Dissolved		0.39 ug/l				
	Boron, Dissolved		97 ug/l				
	Cadmium, Dissolved		0.02 ug/l				
	Calcium, Dissolved		200 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		18 mg/l				
	Manganese, Dissolved		14 ug/l				
	Molybdenum, Dissolved		7.26 ug/l				
	Nickel, Dissolved		6.7 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		0.72 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		412 mg/l				
	Electrical Conductivity at 25C		948 uS/cm				
	Potassium, Dissolved		1.3 mg/l				
	Sodium, Dissolved		27 mg/l				
	Sulphate, Dissolved		110 mg/l				
	Total Oxidised Nitrogen		5.1 mg/l				
	Chloride		34 mg/l				
	Fluoride		0.1 mg/l				
	Ammoniacal Nitrogen		0.07 mg/l				
	Total Organic Carbon		3.3 mg/l				
	pH		7.4 pH Units				
	Nitrate		5.1 mg/l				
	Ionic Balance		4.9 %				
	Electrical Conductivity		776 µS/cm	Field Measurements			
	Temperature		12.3 deg C				
	Dissolved Oxygen		0.7 mg/l				
	pH		7.4 pH Units				
	Groundwater Level		26.40 mAOD				

	Substance/ Emission point	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E09_02B	Aluminium, Dissolved		4.2 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		0.41 ug/l				
	Boron, Dissolved		151 ug/l				
	Cadmium, Dissolved		0.02 ug/l				
	Calcium, Dissolved		200 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		19 mg/l				
	Manganese, Dissolved		1.8 ug/l				
	Molybdenum, Dissolved		<2.50 ug/l				
	Nickel, Dissolved		7.4 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		0.89 ug/l				
	Mercury, Dissolved		0.02 ug/l				
	Total Alkalinity as CaCO3		426 mg/l				
	Electrical Conductivity at 25C		1020 uS/cm				
	Potassium, Dissolved		1.5 mg/l				
	Sodium, Dissolved		30 mg/l				
	Sulphate, Dissolved		131 mg/l				
	Total Oxidised Nitrogen		9.4 mg/l				
	Chloride		30.3 mg/l				
	Fluoride		0.1 mg/l				
	Ammoniacal Nitrogen		<0.06 mg/l				
	Total Organic Carbon		3.2 mg/l				
	pH		7.4 pH Units				
	Nitrate		9.4 mg/l				
	Ionic Balance		3.1 %				
	Electrical Conductivity		885 µS/cm	Field Measurements			
	Temperature		13.0 deg C				
	Dissolved Oxygen		2.5 mg/l				
	pH		7.1 pH Units				
	Groundwater Level		27.97 mAOD				



	Substance/ Emission point	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E05_03	Aluminium, Dissolved	50	<3.5 ug/l		01/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved	10	0.36 ug/l				
	Boron, Dissolved	2800	1690 ug/l				
	Cadmium, Dissolved	0.4	0.34 ug/l				
	Calcium, Dissolved		400 mg/l				
	Chromium, Dissolved	50	<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		256 mg/l				
	Manganese, Dissolved		34 ug/l				
	Molybdenum, Dissolved	50	1160 ug/l				
	Nickel, Dissolved		2.8 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved	20	1.0 ug/l				
	Mercury, Dissolved	0.03	<0.01 ug/l				
	Total Alkalinity as CaCO3		183 mg/l				
	Electrical Conductivity at 25C		5990 uS/cm				
	Potassium, Dissolved		12 mg/l				
	Sodium, Dissolved		750 mg/l				
	Sulphate, Dissolved	400	513 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		1880 mg/l				
	Fluoride		0.8 mg/l				
	Ammoniacal Nitrogen	1.6	0.86 mg/l				
	Total Organic Carbon		1.1 mg/l				
	pH		7.5 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		4.6 %				
	Electrical Conductivity		5194 µS/cm	Field Measurements			
	Temperature		13.2 deg C				
	Dissolved Oxygen		7.1 mg/l				
	pH		7.8 pH Units				
	Groundwater Level		18.15 mAOD				

	Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E05_03	Aluminium, Dissolved	50	<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved	10	0.25 ug/l				
	Boron, Dissolved	2800	1660 ug/l				
	Cadmium, Dissolved	0.4	0.23 ug/l				
	Calcium, Dissolved		350 mg/l				
	Chromium, Dissolved	50	<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		228 mg/l				
	Manganese, Dissolved		55 ug/l				
	Molybdenum, Dissolved	50	1470 ug/l				
	Nickel, Dissolved		3.2 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved	20	0.38 ug/l				
	Mercury, Dissolved	0.03	0.05 ug/l				
	Total Alkalinity as CaCO3		212 mg/l				
	Electrical Conductivity at 25C		6540 uS/cm				
	Potassium, Dissolved		13 mg/l				
	Sodium, Dissolved		930 mg/l				
	Sulphate, Dissolved	400	673 mg/l				
	Total Oxidised Nitrogen		1.4 mg/l				
	Chloride		2010 mg/l				
	Fluoride		1.1 mg/l				
	Ammoniacal Nitrogen	1.6	0.62 mg/l				
	Total Organic Carbon		1.7 mg/l				
	pH		7.8 pH Units				
	Nitrate		1.3 mg/l				
	Ionic Balance		1.3 %				
	Electrical Conductivity		5885 µS/cm	Field Measurements			
	Temperature		14.6 deg C				
	Dissolved Oxygen		6.1 mg/l				
	pH		8.1 pH Units				
	Groundwater Level		18.82 mAOD				

	Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E05_04	Aluminium, Dissolved	50	<3.5 ug/l		01/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved	10	0.96 ug/l				
	Boron, Dissolved	2800	2460 ug/l				
	Cadmium, Dissolved	0.4	<0.02 ug/l				
	Calcium, Dissolved		9.5 mg/l				
	Chromium, Dissolved	50	<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		6.5 mg/l				
	Manganese, Dissolved		3.8 ug/l				
	Molybdenum, Dissolved	50	28 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved	20	0.26 ug/l				
	Mercury, Dissolved	0.03	<0.01 ug/l				
	Total Alkalinity as CaCO3		367 mg/l				
	Electrical Conductivity at 25C		1040 uS/cm				
	Potassium, Dissolved		2.9 mg/l				
	Sodium, Dissolved		250 mg/l				
	Sulphate, Dissolved	400	81.9 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		95.4 mg/l				
	Fluoride		6 mg/l				
	Ammoniacal Nitrogen	1.6	0.24 mg/l				
	Total Organic Carbon		0.7 mg/l				
	pH		8.5 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		0.9 %				
	Electrical Conductivity		933 µS/cm	Field Measurements			
	Temperature		14.0 deg C				
	Dissolved Oxygen		0.1 mg/l				
	pH		8.7 pH Units				
	Groundwater Level		18.76 mAOD				

	Substance/ Emission point	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E05_04	Aluminium, Dissolved	50	<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved	10	0.95 ug/l				
	Boron, Dissolved	2800	1850 ug/l				
	Cadmium, Dissolved	0.4	<0.02 ug/l				
	Calcium, Dissolved		23 mg/l				
	Chromium, Dissolved	50	<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		9 mg/l				
	Manganese, Dissolved		5.3 ug/l				
	Molybdenum, Dissolved	50	128 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved	20	0.2 ug/l				
	Mercury, Dissolved	0.03	0.01 ug/l				
	Total Alkalinity as CaCO3		350 mg/l				
	Electrical Conductivity at 25C		1130 uS/cm				
	Potassium, Dissolved		4.9 mg/l				
	Sodium, Dissolved		280 mg/l				
	Sulphate, Dissolved	400	85.1 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		126 mg/l				
	Fluoride		6 mg/l				
	Ammoniacal Nitrogen	1.6	0.53 mg/l				
	Total Organic Carbon		0.9 mg/l				
	pH		8.6 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		7.0 %				
	Electrical Conductivity		994 µS/cm	Field Measurements			
	Temperature		15.0 deg C				
	Dissolved Oxygen		0.4 mg/l				
	pH		8.7 pH Units				
	Groundwater Level		18.13 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_01	Aluminium, Dissolved	50	# ug/l		01/09/2021	Sampling Amec / Testing ALS # Spurious AI result of 580ppb queried with GW contractor.	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved	10	0.7 ug/l				
	Boron, Dissolved	2800	1990 ug/l				
	Cadmium, Dissolved	0.4	<0.02 ug/l				
	Calcium, Dissolved		4 mg/l				
	Chromium, Dissolved	50	<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		2 mg/l				
	Manganese, Dissolved		1.4 ug/l				
	Molybdenum, Dissolved	50	<2.50 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved	20	1.6 ug/l				
	Mercury, Dissolved	0.03	<0.01 ug/l				
	Total Alkalinity as CaCO3		388 mg/l				
	Electrical Conductivity at 25C		868 uS/cm				
	Potassium, Dissolved		2 mg/l				
	Sodium, Dissolved		220 mg/l				
	Sulphate, Dissolved	400	84 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		36 mg/l				
	Fluoride		3.3 mg/l				
	Ammoniacal Nitrogen	1.6	0.07 mg/l				
	Total Organic Carbon		1.6 mg/l				
	pH		8.60 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		2.7 %				
	Electrical Conductivity		748 µS/cm	Field Measurements			
Temperature		12.8 deg C					
Dissolved Oxygen		0.7 mg/l					
pH		9.0 pH Units					
Groundwater Level		18.86 mAOD					

	Substance/ Emission point	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_01	Aluminium, Dissolved	50	8.2 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved	10	1.0 ug/l				
	Boron, Dissolved	2800	2000 ug/l				
	Cadmium, Dissolved	0.4	<0.02 ug/l				
	Calcium, Dissolved		7.2 mg/l				
	Chromium, Dissolved	50	<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		4.8 mg/l				
	Manganese, Dissolved		3.5 ug/l				
	Molybdenum, Dissolved	50	4.9 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved	20	1.0 ug/l				
	Mercury, Dissolved	0.03	0.01 ug/l				
	Total Alkalinity as CaCO3		381 mg/l				
	Electrical Conductivity at 25C		861 uS/cm				
	Potassium, Dissolved		2.4 mg/l				
	Sodium, Dissolved		220 mg/l				
	Sulphate, Dissolved	400	87 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		32 mg/l				
	Fluoride		3.1 mg/l				
	Ammoniacal Nitrogen	1.6	0.32 mg/l				
	Total Organic Carbon		1.8 mg/l				
	pH		8.70 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		0.2 %				
	Electrical Conductivity		763 µS/cm	Field Measurements			
	Temperature		13.9 deg C				
	Dissolved Oxygen		0.6 mg/l				
	pH		8.8 pH Units				
	Groundwater Level		18.68 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_02	Aluminium, Dissolved		<3.5 ug/l		01/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		0.55 ug/l				
	Boron, Dissolved		1040 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		89 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		48 mg/l				
	Manganese, Dissolved		11 ug/l				
	Molybdenum, Dissolved		22.4 ug/l				
	Nickel, Dissolved		<1.0 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		1.4 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		241 mg/l				
	Electrical Conductivity at 25C		1070 uS/cm				
	Potassium, Dissolved		7.5 mg/l				
	Sodium, Dissolved		110 mg/l				
	Sulphate, Dissolved		358 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		35.5 mg/l				
	Fluoride		0.6 mg/l				
	Ammoniacal Nitrogen		0.25 mg/l				
	Total Organic Carbon		1.3 mg/l				
	pH		7.90 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		0.3 %				
	Electrical Conductivity		355 µS/cm	Field Measurements			
	Temperature		13.4 deg C				
	Dissolved Oxygen		2.4 mg/l				
	pH		8.4 pH Units				
	Groundwater Level		20.51 mAOD				

	Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_02	Aluminium, Dissolved		<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		0.63 ug/l				
	Boron, Dissolved		550 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		140 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		44 mg/l				
	Manganese, Dissolved		7.5 ug/l				
	Molybdenum, Dissolved		21.3 ug/l				
	Nickel, Dissolved		1.5 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		1.8 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		173 mg/l				
	Electrical Conductivity at 25C		1050 uS/cm				
	Potassium, Dissolved		7.7 mg/l				
	Sodium, Dissolved		59 mg/l				
	Sulphate, Dissolved		423 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		32.3 mg/l				
	Fluoride		0.4 mg/l				
	Ammoniacal Nitrogen		0.13 mg/l				
	Total Organic Carbon		2.3 mg/l				
	pH		8.00 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		0.7 %				
	Electrical Conductivity		986 µS/cm	Field Measurements			
	Temperature		13.7 deg C				
	Dissolved Oxygen		5.3 mg/l				
	pH		8.4 pH Units				
	Groundwater Level		20.78 mAOD				



	Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_03	Aluminium, Dissolved		<3.5 ug/l		02/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		2 ug/l				
	Arsenic Dissolved		1.2 ug/l				
	Boron, Dissolved		420 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		120 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		65 mg/l				
	Manganese, Dissolved		12 ug/l				
	Molybdenum, Dissolved		10 ug/l				
	Nickel, Dissolved		1.8 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		2.2 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		155 mg/l				
	Electrical Conductivity at 25C		1080 uS/cm				
	Potassium, Dissolved		8 mg/l				
	Sodium, Dissolved		40 mg/l				
	Sulphate, Dissolved		451 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		32 mg/l				
	Fluoride		0.5 mg/l				
	Ammoniacal Nitrogen		0.1 mg/l				
	Total Organic Carbon		1.3 mg/l				
	pH		7.7 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		0.5 %				
	Electrical Conductivity		974 µS/cm	Field Measurements			
	Temperature		13.4 deg C				
	Dissolved Oxygen		8.7 mg/l				
	pH		8.0 pH Units				
	Groundwater Level		21.99 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_03	Aluminium, Dissolved		<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		1.1 ug/l				
	Boron, Dissolved		469 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		100 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		71 mg/l				
	Manganese, Dissolved		21 ug/l				
	Molybdenum, Dissolved		12 ug/l				
	Nickel, Dissolved		1.9 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		1.7 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		164 mg/l				
	Electrical Conductivity at 25C		1070 uS/cm				
	Potassium, Dissolved		7.9 mg/l				
	Sodium, Dissolved		59 mg/l				
	Sulphate, Dissolved		450 mg/l				
	Total Oxidised Nitrogen		1.1 mg/l				
	Chloride		32 mg/l				
	Fluoride		0.6 mg/l				
	Ammoniacal Nitrogen		0.3 mg/l				
	Total Organic Carbon		2.6 mg/l				
	pH		8.1 pH Units				
	Nitrate		1.1 mg/l				
	Ionic Balance		0.2 %				
	Electrical Conductivity		906 µS/cm	Field Measurements			
	Temperature		13.7 deg C				
	Dissolved Oxygen		7.9 mg/l				
	pH		8.1 pH Units				
	Groundwater Level		21.57 mAOD				

	Substance/ Emission point Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_04	Aluminium, Dissolved		<3.5 ug/l		02/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		0.5 ug/l				
	Boron, Dissolved		355 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		330 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		105 mg/l				
	Manganese, Dissolved		132 ug/l				
	Molybdenum, Dissolved		13 ug/l				
	Nickel, Dissolved		4.3 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		<0.15 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		162 mg/l				
	Electrical Conductivity at 25C		1800 uS/cm				
	Potassium, Dissolved		43 mg/l				
	Sodium, Dissolved		49 mg/l				
	Sulphate, Dissolved		985 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		61 mg/l				
	Fluoride		0.5 mg/l				
	Ammoniacal Nitrogen		0.14 mg/l				
	Total Organic Carbon		3.1 mg/l				
	pH		7.60 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		51.6 %				
	Electrical Conductivity		1489 µS/cm	Field Measurements			
Temperature		13.7 deg C					
Dissolved Oxygen		2.6 mg/l					
pH		7.7 pH Units					
Groundwater Level		21.11 mAOD					

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_04	Aluminium, Dissolved		<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		0.4 ug/l				
	Boron, Dissolved		517 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		260 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		73.0 mg/l				
	Manganese, Dissolved		106.0 ug/l				
	Molybdenum, Dissolved		22 ug/l				
	Nickel, Dissolved		5.4 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		0.17 ug/l				
	Mercury, Dissolved		0.02 ug/l				
	Total Alkalinity as CaCO3		157 mg/l				
	Electrical Conductivity at 25C		1650 uS/cm				
	Potassium, Dissolved		46.0 mg/l				
	Sodium, Dissolved		40.0 mg/l				
	Sulphate, Dissolved		865 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		51 mg/l				
	Fluoride		0.5 mg/l				
	Ammoniacal Nitrogen		0.1 mg/l				
	Total Organic Carbon		2.6 mg/l				
	pH		7.70 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		51.6 %				
	Electrical Conductivity		1430 µS/cm	Field Measurements			
	Temperature		14.0 deg C				
	Dissolved Oxygen		2.8 mg/l				
	pH		7.8 pH Units				
	Groundwater Level		22.76 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_05	Aluminium, Dissolved		<3.5 ug/l		02/09/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		<0.20 ug/l				
	Boron, Dissolved		414 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		200 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		75 mg/l				
	Manganese, Dissolved		19 ug/l				
	Molybdenum, Dissolved		6.3 ug/l				
	Nickel, Dissolved		1.3 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		<0.15 ug/l				
	Mercury, Dissolved		<0.01 ug/l				
	Total Alkalinity as CaCO3		184 mg/l				
	Electrical Conductivity at 25C		1200 uS/cm				
	Potassium, Dissolved		5 mg/l				
	Sodium, Dissolved		21 mg/l				
	Sulphate, Dissolved		567 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		29 mg/l				
	Fluoride		0.1 mg/l				
	Ammoniacal Nitrogen		0.1 mg/l				
	Total Organic Carbon		1.1 mg/l				
	pH		7.60 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		2.6 %				
	Electrical Conductivity		1111 µS/cm	Field Measurements			
	Temperature		14.5 deg C				
	Dissolved Oxygen		0.8 mg/l				
	pH		8.0 pH Units				
	Groundwater Level		24.94 mAOD				

Emission point	Substance/ Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
E06_05	Aluminium, Dissolved		<3.5 ug/l		19/10/2021	Sampling Amec / Testing ALS	
	Antimony, Dissolved		<1.3 ug/l				
	Arsenic Dissolved		<0.20 ug/l				
	Boron, Dissolved		601 ug/l				
	Cadmium, Dissolved		<0.02 ug/l				
	Calcium, Dissolved		190 mg/l				
	Chromium, Dissolved		<0.20 ug/l				
	Copper, Dissolved		<4.0 ug/l				
	Iron, Dissolved		<20 ug/l				
	Magnesium, Dissolved		78 mg/l				
	Manganese, Dissolved		18 ug/l				
	Molybdenum, Dissolved		10.1 ug/l				
	Nickel, Dissolved		1.4 ug/l				
	Selenium Dissolved		n/s ug/l				
	Vanadium, Dissolved		<0.15 ug/l				
	Mercury, Dissolved		0.03 ug/l				
	Total Alkalinity as CaCO3		175 mg/l				
	Electrical Conductivity at 25C		1270 uS/cm				
	Potassium, Dissolved		4.9 mg/l				
	Sodium, Dissolved		22 mg/l				
	Sulphate, Dissolved		610 mg/l				
	Total Oxidised Nitrogen		<0.7 mg/l				
	Chloride		29 mg/l				
	Fluoride		0.5 mg/l				
	Ammoniacal Nitrogen		0.1 mg/l				
	Total Organic Carbon		1.3 mg/l				
	pH		7.90 pH Units				
	Nitrate		<0.7 mg/l				
	Ionic Balance		0.1 %				
	Electrical Conductivity		1168 µS/cm	Field Measurements			
	Temperature		15.0 deg C				
	Dissolved Oxygen		0.7 mg/l				
	pH		7.8 pH Units				
	Groundwater Level		25.33 mAOD				

Substance/ Emission point	Parameter	Emission Limit Value	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Accreditation/ Certification <sup>[4]</sup>	Uncertainty <sup>[5]</sup>
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[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. colorimetry.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements, or flow/time proportional samples, the percentage of the process operating time covered by the monitoring is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

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

[6] The emission limit values for all substances is expressed as a maximum individual value, unless otherwise stated.

Signed .....  .....

(authorised to sign as representative of the Operator)

Date 26/01/2022