ENVIRONMENT
& HEALTH

Martyn Grant
Environmental Manager
The Royal Mint
Llantrisant
Pontyclun
CF72 8YT

Dear Martyn

FACTUAL REPORT ON GROUNDWATER SAMPLING IN JUNE 2018

Date 20/07/2018

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Ref 1700002116_1 June 2018
GW Monitoring Report

Ramboll Environment & Health UK Ltd ('Ramboll') has been instructed by The Royal Mint to carry out groundwater monitoring during 2018 to 2019 at its site in Llantrisant, South Wales (Ramboll Quote ref: LQ1700002116, dated 13th April 2018). This letter presents a factual report on groundwater sampling from selected boreholes in the area of Building 9A, the Coin Press Room ("CPR"), the COMAH area and the southern site boundary, undertaken in June 2018.

Background

Ramboll has carried out groundwater sampling at the site which previously identified elevated concentrations of metals in several areas. Elevated concentrations of nickel, copper and zinc have been identified in all boreholes monitored throughout 2017/18. The pH was also below [more acidic than] the acceptable EQS range in several locations across the site. It was recommended that monitoring should continue from selected boreholes.

Natural Resources Wales (NRW) issued a Compliance Assessment Report (CAR), (Ref: KP3135KV CAR_NRW0033153) in relation to surface and groundwater monitoring results at the site. NRW recommended that monitoring of groundwater should continue every four months for a further twelve-month period, at which time the frequency can be reviewed, (following a Compliance Review of Building 9A).

Groundwater Sampling

Groundwater samples were collected from the following boreholes: BH9, BH901R, BH10, BH13, BH32, and BH801 (shown on Figure 1, Appendix 3). It was not possible to collect a sample from borehole BH8, as initially planned, due to temporary storage of site materials preventing access to the borehole.

Ramboll Environment and Health UK Limited
Registered in England
Company No: 2331163
Registered Office:
240 Blackfriars Road
London
SE1 8NW

Samples were analysed for a range of metals, pH and alkalinity at a UKAS accredited laboratory. *SPMP boreholes CBH6 and BHNP2D have been omitted from future monitoring rounds given the reduction in volatile organic compound (VOC) concentrations recorded during previous monitoring. VOC analysis has also been omitted from the suite of analysis based on no detections above the laboratory reporting limit.*

The laboratory certificates of analysis are included in Appendix 1, which provide the method of analysis for each determinand. The analysis results are summarised in the table in Appendix 2 and represented graphically in Appendix 3.

The results have been benchmarked against previous analytical results from these monitoring wells and screened against EQS for freshwater. The results are summarised as follows:

- Samples were collected from boreholes BH9 and the borehole installed in 2015 (referred to as BH901R), that is acting as a replacement for borehole BH901. Concentrations of nickel, copper and zinc have decreased in each borehole since February 2018; however, they all remain in excess of their respective EQS values.
- Concentrations of nickel, copper and zinc have all slightly decreased in borehole BH10 since the previous round of monitoring in February 2018; however, they were all recorded in excess of the relevant EQS values.
- In BH32, concentrations of nickel, copper, and zinc have all decreased since the previous round of monitoring in February 2018. However, concentrations remain above the relevant EQS.
- Concentrations of nickel, copper, and zinc in borehole BH13 have all increased slightly since the previous round of monitoring in February 2018. Concentrations remain above the relevant EQS for these determinands.
- Borehole BH801, located in the north of the site (adjacent to the copper plating building) and included within ongoing SPMP groundwater sampling, has been included again for the 2018-19 monitoring programme. Concentrations of copper and nickel remained at concentrations below their respective EQS values. The concentration of zinc had decreased slightly since the previous round of monitoring, remaining at a concentration that exceeds the relevant EQS.
- Total chromium was not recorded above the laboratory limit of detection in any boreholes during the most recent monitoring round. Therefore, all concentrations were below the EQS value of 0.0047mg/l.
- The concentration of cadmium was recorded above the laboratory LOD (0.0001mg/l) in all boreholes, with a maximum recorded value of 0.0004mg/l in boreholes BH9 and BH901R. All recorded values are above the EQS value of 0.00008mg/l.
- The following determinands did not exceed the screening criteria in any of the boreholes: lead, arsenic, boron, mercury, selenium and vanadium.
- Low (acidic) pH values (<pH 6) were detected in samples from BH9 (pH 5.0), BH13 (pH 4.9), and BH901R (pH 5.7). Samples from these and several other locations have regularly recorded low pH values throughout the monitoring programme.

The next round of groundwater monitoring is due to be carried out in October 2018. Please do not hesitate to contact me if there is anything you wish to discuss.

Yours sincerely

Lucy Cleverley
Managing Consultant
Site Solutions

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Encl. Appendix 1, Laboratory Test Report

Appendix 2, Results Summary Table

Appendix 3, Figures and Graphs

Appendix 1

Laboratory Test Report

Our Ref: EXR/265245 (Ver. 1)
Your Ref: 1700002116

July 7, 2018

Environmental Chemistry
SOCOTEC UK Limited
Bretby Business Park
Ashby Road
Burton-on-Trent
Staffordshire
DE15 0YZ

Telephone: 01283 554400
Facsimile: 01283 554422

Rob Hodgson
Ramboll Environ
8 Village Way
Cardiff
CF15 7NE

For the attention of Rob Hodgson

Dear Rob Hodgson

Sample Analysis - Royal Mint Monitoring 2018/19

Samples from the above site have been analysed in accordance with the schedule supplied.
The sample details and the results of analyses for these samples are given in the appended report.

An invoice for this work will follow under a separate cover.

Please be aware that our policy for the retention of paper based laboratory records and analysis reports is 6 years.

The work was carried out in accordance with SOCOTEC UK Limited (Multi-Sector Services) Standard Terms and Conditions of Contract.

If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

for SOCOTEC UK Limited

C Lamb
Project Co-ordinator
01283 554463

TEST REPORT

1252

Report No. EXR/265245 (Ver. 1)

Ramboll Environ
8 Village Way
Cardiff
CF15 7NE

Site: Royal Mint Monitoring 2018/19

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 27-Jun-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 07-Jul-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

On behalf of
SOCOTEC UK Lim
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 07-Jul-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :			mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Method Codes :			Calc_HD	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPWATVAR	ICPWATVAR	ICPWATVAR	ICPWATVAR	KONENS
Method Reporting Limits :			7	0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.002	0.01	0.01	1	1	0.003
UKAS Accredited :			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
LAB ID Number EXR	**Client Sample Description**	**Sample Date**	**Total Hardness as CaCO3**	**Arsenic as As (Dissolved)**	**Cadmium as Cd (Dissolved)**	**Chromium as Cr (Dissolved)**	**Copper as Cu (Dissolved)**	**Lead as Pb (Dissolved)**	**Mercury as Hg (Dissolved)**	**Nickel as Ni (Dissolved)**	**Selenium as Se (Dissolved)**	**Vanadium as V (Dissolved)**	**Zinc as Zn (Dissolved)**	**Beryllium as Be (Dissolved) a**	**Boron as B (Dissolved) a**	**Calcium as Ca (Dissolved) a**	**Magnesium as Mg (Dissolved) a**	**Chromium VI as Cr**
1897378	BH901R	25-Jun-18 09:30	73	<0.001	0.0004	<0.001	0.344	<0.001	<0.0001	0.146	<0.001	<0.001	0.412	<0.01	0.05	21	5	<0.003
1897379	BH9	25-Jun-18 10:00	44	<0.001	0.0004	<0.001	0.497	<0.001	<0.0001	0.167	<0.001	<0.001	0.354	<0.01	0.05	11	4	<0.003
1897380	BH32	25-Jun-18 10:30	76	<0.001	0.0003	<0.001	0.007	<0.001	<0.0001	0.163	<0.001	<0.001	0.362	<0.01	0.03	22	5	<0.003
1897381	BH13	25-Jun-18 11:15	68	<0.001	0.0003	<0.001	0.029	<0.001	<0.0001	0.075	<0.001	<0.001	0.068	<0.01	0.03	19	5	<0.003
1897382	BH801	25-Jun-18 12:15	51	<0.001	0.0001	<0.001	0.014	<0.001	<0.0001	0.013	<0.001	<0.001	0.141	<0.01	<0.01	9	7	<0.003
1897383	BH10	25-Jun-18 13:15	63	<0.001	0.0002	<0.001	0.086	<0.001	<0.0001	0.074	<0.001	<0.001	0.117	<0.01	0.02	17	5	<0.003

SOCOTEC

Bretby Business Park, Ashby Road

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Client Name Ramboll Environ

Contact Rob Hodgson

Royal Mint Monitoring 2018/19

Sample Analysis

Date Printed	**07-Jul-2018**
Report Number	**EXR/265245**
Table Number	**1**

Where individual results are flagged see report notes for status.

		Units :	pH units																
		Method Codes :	WSLM3																
		Method Reporting Limits :																	
		UKAS Accredited :	Yes																
LAB ID Number EXR	**Client Sample Description**	**Sample Date**	**pH units w**																
1897378	BH901R	**25-Jun-18 09:30**	5.7																
1897379	BH9	**25-Jun-18 10:00**	5																
1897380	BH32	**25-Jun-18 10:30**	6.1																
1897381	BH13	**25-Jun-18 11:15**	4.9																
1897382	BH801	**25-Jun-18 12:15**	6.5																
1897383	BH10	**25-Jun-18 13:15**	6																

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Client Name	**Ramboll Environ**
Contact	Rob Hodgson

Royal Mint Monitoring 2018/19

Sample Analysis

Date Printed	**07-Jul-2018**
Report Number	**EXR/265245**
Table Number	**1**

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

Customer Ramboll Environ
Site Royal Mint Monitoring 2018/19
Report No W265245

Consignment No W139580
Date Logged 27-Jun-2018
In-House Report Due 04-Jul-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	Total Hardness as CaCO3 (CALC)	Report A	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Vanadium as V MS (Dissolved)	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Boron as B (Dissolved) VAR	Beryllium as Be (Dissolved) VAR	Chromium VI. as Cr (Kone)	pH units
MethodID				Calc_HD	CUSTSERV	ICPMSW										ICPWATVAR				KONENS	WSLM3
				✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
EX/1897378	BH901R	Groundwater	25/06/18																		
EX/1897379	BH9	Groundwater	25/06/18																		
EX/1897380	BH32	Groundwater	25/06/18																		
EX/1897381	BH13	Groundwater	25/06/18																		
EX/1897382	BH801	Groundwater	25/06/18																		
EX/1897383	BH10	Groundwater	25/06/18																		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	Calc_HD	As Received	Calculation based on Dissolved metals analysis by ICPOES
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : Ramboll Environ

Site : Royal Mint Monitoring 2018/19

Report Number : W26_5245

Lab ID Number	Client ID	Description
EX/1897378	BH901R	Groundwater
EX/1897379	BH9	Groundwater
EX/1897380	BH32	Groundwater
EX/1897381	BH13	Groundwater
EX/1897382	BH801	Groundwater
EX/1897383	BH10	Groundwater

Appendix 2

Results Summary table

Groundwater Monitoring - Summary of Results

		Analysis												
Borehole	Date	pH	CaCO3 (mg/l)	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l
Guideline Value		6-9 (1)	NG	0.02 (1)	0.0047(1)	0.00008(1)	0.001-0.028* (1)	0.0072 (1)	0.008 - 0.125* (1)	0.05(1)	2 (1)	0.00005(1)	0.01(2)	0.02 - 0.06* (1)
BH801	01-Mar-06	6.5	120	0.23	<0.005	<0.001	<0.005	<0.005	0.042	<0.005	<0.005	<0.00005	<0.005	NT
	01-May-06	6.7	85	0.077	<0.005	<0.001	0.017	<0.005	0.18	<0.005	0.05	<0.00005	<0.005	NT
	01-Dec-06	6.6	76	0.014	<0.005	<0.001	0.14	<0.005	0.13	<0.005	0.006	<0.00005	<0.005	NT
	01-Aug-07	6.8	59	0.017	<0.005	<0.001	<0.005	<0.005	0.047	<0.005	0.006	<0.00005	<0.005	NT
	01-Aug-08	6.9	120	0.37	<0.005	<0.001	1.8	<0.005	0.66	<0.005	0.021	<0.00005	<0.005	NT
	01-Sep-09	7.63	235	0.01	0.005	<0.001	15.9	<0.005	0.467	<0.005	<0.018	<0.00005	<0.005	NT
	01-Oct-09	6.3	88	0.06	0.002	<0.001	0.362	<0.001	0.464	<0.001	0.03	0.0002	<0.001	NT
	01-Aug-10	6.5	68	0.048	0.001	<0.001	0.369	<0.001	0.819	<0.001	0.03	<0.00005	<0.001	NT
	01-Aug-11	6.7	80	0.058	0.002	0.0002	0.482	<0.001	1.312	<0.001	0.02	<0.0001	<0.001	NT
	20-Aug-12	7	72	0.017	<0.001	<0.0001	0.066	<0.001	0.347	<0.001	0.01	<0.0001	<0.001	NT
	30-Aug-13	6.9	100	0.043	0.002	0.0002	0.767	<0.001	3.119	<0.001	<0.01	<0.0001	<0.001	NT
	04-Sep-14	7.2	79	0.057	<0.001	0.0002	0.302	<0.001	1.37	<0.001	0.04	<0.0001	<0.001	NT
	04-Jun-15	7	113	0.079	<0.001	0.0007	2.627	<0.001	4.669	<0.001	<0.01	<0.0001	<0.001	<0.001
	12-Oct-15	6.6	52	0.031	<0.001	<0.0001	0.101	<0.001	0.776	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	6.3	47	0.018	<0.001	<0.0001	0.098	<0.001	0.629	<0.001	<0.01	<0.0001	<0.001	<0.001
	30-Jun-16	6.5	66	0.075	<0.001	0.0003	0.422	<0.001	2.253	<0.001	0.01	<0.0001	<0.001	<0.001
	25-Oct-16	6.4	43	0.013	<0.001	<0.0001	0.029	<0.001	0.232	<0.001	<0.01	<0.0001	<0.001	<0.001
	14-Feb-17	6.3	54	0.009	<0.001	<0.0001	0.005	<0.001	0.053	<0.001	<0.01	<0.0001	<0.001	<0.001
	16-Jun-17	6.2	52	0.022	<0.001	0.001	0.086	<0.001	0.784	<0.001	0.01	<0.0001	<0.001	<0.001
	31-Oct-17	6.4	51	0.008	<0.001	<0.0001	0.002	<0.001	0.045	<0.001	<0.01	<0.0001	<0.001	<0.001
	07-Feb-18	6.6	54	0.012	<0.001	<0.0001	0.005	<0.001	0.166	<0.001	<0.01	<0.0001	<0.001	<0.001
	25-Jun-18	6.5	51	0.013	<0.001	0.0001	0.014	<0.001	0.141	<0.001	<0.01	<0.0001	<0.001	<0.001
BH8	01-Oct-09	4.5	NT	0.571	0.001	0.0021	0.22	0.002	0.45	<0.001	0.05	<0.0001	0.002	<0.002
	01-Feb-10	4.3	NT	0.315	0.002	0.0027	0.239	0.002	0.68	<0.001	0.06	<0.0001	0.003	<0.002
	01-Apr-10	4.4	NT	0.141	<0.001	<0.0001	0.17	<0.001	0.952	<0.001	0.03	<0.0001	0.001	<0.002
	01-Jun-10	4.6	NT	0.57	0.001	0.0019	0.195	0.002	1.368	<0.001	0.04	<0.0001	0.001	<0.002
	25-Jan-13	5.2	14	0.162	<0.001	0.0013	0.283	0.002	0.379	<0.001	0.05	<0.0001	<0.001	0.001
	03-Apr-13	5.4	5	0.19	<0.001	0.0014	0.293	0.002	0.482	<0.001	<0.01	<0.0001	0.001	<0.001
	31-May-13	5.9	<30	0.307	0.001	0.0009	0.452	<0.001	1.325	<0.001	<0.01	<0.0001	<0.001	<0.001
	26-Jul-13	4.9	<2	0.176	<0.001	0.0017	0.262	0.004	0.703	<0.001	0.02	<0.0001	<0.001	<0.001
	07-Oct-13	5.4	0	0.111	<0.001	0.001	0.225	0.003	0.323	<0.001	0.02	<0.0001	<0.001	<0.001
	25-Nov-13	6.6	7	0.103	0.001	0.0007	0.152	<0.001	0.232	<0.001	0.03	<0.0001	<0.001	<0.001
	30-Jan-14	5.9	8	0.08	<0.001	0.0007	0.099	<0.001	0.205	<0.001	0.03	<0.0001	<0.001	<0.001
	04-Jun-14	4.8	6	0.085	<0.001	0.0007	0.132	0.001	0.23	<0.001	<0.01	<0.0001	<0.001	<0.001
	08-Oct-14	6.5	<2	0.235	<0.001	0.0014	0.285	0.003	0.564	<0.001	0.03	<0.0001	<0.001	<0.001
	10-Feb-15	5.3	5	0.104	<0.001	0.0006	0.112	<0.001	0.21	<0.001	0.03	<0.0001	0.001	<0.001
	04-Jun-15	6.2	0	0.243	<0.001	0.0012	0.258	0.002	0.487	<0.001	0.04	<0.0001	0.003	<0.001
	12-Oct-15	5.6	59	0.135	0.001	0.0008	0.168	<0.001	0.28	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	4.7	71	0.101	<0.001	0.0007	0.122	0.001	0.195	<0.001	<0.01	<0.0001	0.001	<0.001
	30-Jun-16	4.4	82	0.154	<0.001	0.0009	0.179	0.002	0.316	<0.001	0.03	<0.0001	<0.001	<0.001
	25-Oct-16	4.5	67	0.127	<0.001	0.0008	0.139	0.002	0.27	<0.001	0.02	<0.0001	<0.001	<0.001
	14-Feb-17	4.9	61	0.097	<0.001	0.0007	0.105	0.001	0.214	<0.001	0.02	<0.0001	<0.001	<0.001
	16-Jun-17	4.3	77	0.19	<0.001	0.0009	0.197	0.002	0.346	<0.001	0.06	<0.0001	<0.001	<0.001
	31-Oct-17	4.8	56	0.086	<0.001	0.0006	0.09	<0.001	0.166	<0.001	<0.01	<0.0001	<0.001	<0.001
	07-Feb-18	Not Sampled						Not Sampled						Not Sampled
	25-Jun-18	Not Sampled						Not Sampled						Not Sampled
BH9	15-Oct-09	7.5	NA	0.002	0.001	<0.0001	0.001	<0.001	0.005	<0.001	0.05	<0.0001	<0.001	<0.002
	06-Sep-11	4.5	NA	1.011	0.006	0.0012	1.11	<0.001	5.872	0.001	0.07	<0.0001	<0.001	<0.001
	27-Sep-11	4.5	NA	3.96	0.004	0.0049	2.081	<0.001	19.61	<0.001	0.07	<0.0001	0.002	0.001
	31-Oct-11	4.4	0	7.402	0.02	0.0022	9.91	0.002	31.02	0.001	NA	<0.0001	<0.001	NA
	14-Dec-11	4.7	0	10.4	0.013	0.0059	9.567	<0.001	40.3	<0.001	0.3	<0.0001	0.003	<0.001
	13-Mar-12	6.1	3	2.57	0.027	0.0017	3.452	0.005	22.99	0.001	<0.01	<0.0001	<0.001	0.014
	14-May-12	4.7	0	2.254	0.012	0.0015	4.592	0.002	7.107	<0.001	0.08	<0.0001	<0.001	<0.001
	10-Jul-12	4.5	0	1.122	0.014	0.0011	2.581	0.002	5.178	0.001	0.08	<0.0001	<0.001	0.002
	18-Sep-12	6.7	0	0.458	0.003	0.0006	1.41	<0.001	1.921	<0.001	0.06	<0.0001	<0.001	<0.001
	27-Nov-12	6.8	9	0.679	0.002	0.0009	1.29	<0.001	2.205	<0.001	0.09	<0.0001	<0.001	<0.001
	25-Jan-13	7.5	24	0.546	<0.001	0.0008	0.771	<0.001	1.765	<0.001	0.11	<0.0001	<0.001	0.001
	03-Apr-13	6.2	17	0.522	0.001	0.0008	2.185	<0.001	1.806	<0.001	0.04	<0.0001	<0.001	<0.001
	31-May-13	5.1	117	0.754	0.006	0.0014	2.888	0.001	2.901	<0.001	0.08	<0.0001	<0.001	<0.001
	26-Jul-13	5.4	<2	0.329	0.002	0.0009	1.397	<0.001	1.313	<0.001	0.04	<0.0001	<0.001	<0.001
	07-Oct-13	5.1	10	1.176	0.005	0.0014	1.906	<0.001	2.568	<0.001	0.1	<0.0001	<0.001	<0.001
	25-Nov-13	6.7	104	0.227	<0.001	0.0005	0.123	0.006	0.575	<0.001	0.07	<0.0001	<0.001	<0.001
	30-Jan-14	6.7	111	0.121	<0.001	0.0002	0.051	<0.001	0.154	<0.001	0.05	<0.0001	<0.001	<0.001
	04-Jun-14	6.2	115	0.066	0.001	0.0003	0.054	<0.001	0.192	<0.001	0.01	<0.0001	<0.001	<0.001
	08-Oct-14	8	83	0.107	0.001	0.0004	0.048	<0.001	0.264	<0.001	0.02	<0.0001	<0.001	0.001
	10-Feb-15	6.4	134	0.16	<0.001	0.0004	0.115	<0.001	0.315	<0.001	0.05	<0.0001	<0.001	<0.001
	04-Jun-15	6.4	0	0.27	0.002	0.0006	0.72	<0.001	0.558	<0.001	0.11	<0.0001	0.001	<0.001
	12-Oct-15	Not Sampled						Not Sampled						Not Sampled
	17-Feb-16	6.1	109	0.31	<0.001	0.0007	0.384	<0.001	0.675	<0.001	0.05	<0.0001	<0.001	<0.001
	30-Jun-16	5.3	79	0.283	<0.001	0.0006	0.736	<0.001	0.626	<0.001	0.1	<0.0001	<0.001	<0.001
	25-Oct-16	5.2	49	0.224	<0.001	0.0005	0.564	<0.001	0.508	<0.001	0.03	<0.0001	<0.001	<0.001
	14-Feb-17	4.9	58	0.307	0.001	0.0006	0.763	<0.001	0.658	<0.001	0.1	<0.0001	<0.001	<0.001
	16-Jun-17	5.2	39	0.108	<0.001	0.0003	0.448	<0.001	0.274	<0.001	0.03	<0.0001	<0.001	<0.001
	31-Oct-17	5.5	66	0.25	<0.001	0.0005	0.479	<0.001	0.566	<0.001	0.05	<0.0001	<0.001	<0.001
	07-Feb-18	5.8	77	0.298	<0.001	0.0006	0.533	<0.001	0.689	<0.001	0.07	<0.0001	<0.001	<0.001
	25-Jun-18	5.0	44	0.167	<0.001	0.0004	0.497	<0.001	0.354	<0.001	0.05	<0.0001	<0.001	<0.001

Groundwater Monitoring - Summary of Results

		Analysis												
Borehole	Date	pH	CaCO3 (mg/l)	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l
Guideline Value		6-9 (1)	NG	0.02 (1)	0.0047(1)	0.00008(1)	0.001-0.028* (1)	0.0072 (1)	0.008 - 0.125* (1)	0.05(1)	2 (1)	0.00005(1)	0.01(2)	0.02 - 0.06* (1)
BH10	01-Jun-10	4.6	NA	0.176	<0.001	0.0003	0.184	<0.001	0.314	<0.001	0.02	<0.0001	<0.001	<0.002
	06-Sep-11	5.6	NA	0.097	<0.001	0.0001	0.044	<0.001	0.428	<0.001	NA	<0.0001	<0.001	<0.001
	27-Sep-11	5.8	NA	0.052	<0.001	<0.0001	0.012	<0.001	0.154	<0.001	0.02	<0.0001	<0.001	<0.001
	31-Oct-11	6.8	13	0.073	0.001	<0.0001	0.032	<0.001	0.291	<0.001	NA	<0.0001	<0.001	NA
	14-Dec-11	7.2	50	0.009	0.001	<0.0001	0.009	<0.001	0.027	<0.001	0.07	<0.0001	0.001	<0.001
	13-Mar-12	5	0	4.727	0.001	0.0034	0.686	0.003	20.9	<0.001	0.01	<0.0001	0.002	0.001
	14-May-12	5.2	0	1.558	<0.001	0.0017	0.709	0.002	5.341	<0.001	0.04	<0.0001	<0.001	<0.001
	10-Jul-12	4.7	0	0.998	0.001	0.002	1.117	0.003	6.488	<0.001	0.05	<0.0001	0.001	<0.001
	18-Sep-12	5.1	0	0.755	0.001	0.0013	1.806	0.002	3.781	<0.001	0.04	<0.0001	<0.001	<0.001
	27-Nov-12	4.8	<2	0.752	<0.001	0.0013	0.728	0.002	3.319	<0.001	0.07	<0.0001	<0.001	<0.001
	25-Jan-13	5.4	16	0.617	<0.001	0.0011	0.984	0.002	2.05	<0.001	0.1	<0.0001	<0.001	<0.001
	03-Apr-13	5.6	4	0.596	<0.001	0.0011	1.537	0.002	1.898	<0.001	0.02	<0.0001	<0.001	<0.001
	31-May-13	5.7	49	0.464	<0.001	0.0009	1.244	0.002	1.704	<0.001	0.02	<0.0001	<0.001	<0.001
	26-Jul-13	5.4	<2	0.203	<0.001	0.0005	0.491	0.001	0.726	<0.001	<0.01	0.0002	<0.001	<0.001
	07-Oct-13	5.9	0	0.221	<0.001	0.0006	0.435	0.001	0.801	<0.001	0.03	<0.0001	<0.001	<0.001
	25-Nov-13	6.3	0	0.34	<0.001	0.0006	0.531	0.001	1.003	<0.001	0.05	<0.0001	<0.001	<0.001
	30-Jan-14	5.3	3	0.277	<0.001	0.0006	0.434	<0.001	0.945	<0.001	0.06	<0.0001	<0.001	<0.001
	04-Jun-14	4.8	4	0.138	<0.001	0.0004	0.352	0.001	0.38	<0.001	0.01	<0.0001	<0.001	<0.001
	08-Oct-14	8.1	38	0.003	<0.001	<0.0001	0.006	<0.001	0.007	<0.001	0.01	<0.0001	<0.001	<0.001
	10-Feb-15	6.8	53	0.002	<0.001	<0.0001	0.009	<0.001	0.011	<0.001	<0.01	<0.0001	<0.001	<0.001
	04-Jun-15	7.3	36	0.013	0.001	<0.0001	0.008	<0.001	0.015	<0.001	<0.01	<0.0001	<0.001	<0.001
	12-Oct-15	6.7	85	0.02	0.001	<0.0001	0.015	<0.001	0.048	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	6.1	83	0.046	<0.001	0.0001	0.026	<0.001	0.076	<0.001	<0.01	<0.0001	<0.001	<0.001
	30-Jun-16	6.1	71	0.029	<0.001	<0.0001	0.021	<0.001	0.059	<0.001	0.03	<0.0001	<0.001	<0.001
	25-Oct-16	5.9	67	0.097	<0.001	0.0002	0.084	<0.001	0.194	<0.001	0.03	<0.0001	<0.001	<0.001
	14-Feb-17	6.2	71	0.064	<0.001	0.0001	0.06	<0.001	0.151	<0.001	0.03	<0.0001	<0.001	<0.001
	16-Jun-17	6.2	59	0.027	<0.001	<0.0001	0.03	<0.001	0.055	<0.001	0.02	<0.0001	<0.001	<0.001
	31-Oct-17	6.3	85	0.047	<0.001	0.0001	0.03	<0.001	0.085	<0.001	<0.01	<0.0001	<0.001	<0.001
	07-Feb-18	6.3	113	0.121	<0.001	0.0003	0.105	<0.001	0.186	<0.001	<0.01	<0.0001	<0.001	<0.001
	25-Jun-18	6.0	63	0.074	<0.001	0.0002	0.086	<0.001	0.117	<0.001	0.02	<0.0001	<0.001	<0.001
BH32	01-Jun-10	6.6	NA	0.004	0.001	<0.0001	0.002	<0.001	<0.002	<0.001	0.02	<0.0001	<0.001	<0.002
	06-Sep-11	5.6	NA	2.18	0.003	0.0023	0.029	<0.001	4.856	<0.001	0.06	<0.0001	<0.001	<0.001
	27-Sep-11	6.3	NA	1.992	0.004	0.0014	0.006	<0.001	2.702	<0.001	0.06	<0.0001	0.001	0.001
	31-Oct-11	5.8	18	6.396	0.003	0.0042	0.04	<0.001	16.36	<0.001	NA	<0.0001	0.002	NA
	14-Dec-11	6.9	177	0.247	0.004	0.0002	0.003	<0.001	0.265	<0.001	0.07	<0.0001	0.002	0.002
	13-Mar-12	7.2	80	0.688	0.003	0.0006	0.003	<0.001	0.963	<0.001	<0.01	<0.0001	0.001	0.002
	14-May-12	7.2	166	0.465	0.004	0.0003	0.004	<0.001	0.871	<0.001	0.03	<0.0001	0.002	0.002
	10-Jul-12	6.8	13	1.96	0.001	0.0031	0.03	<0.001	4.906	<0.001	0.07	0.0001	<0.001	<0.001
	18-Sep-12	6.6	9	2.488	0.002	0.004	0.038	<0.001	6.379	<0.001	0.11	<0.0001	<0.001	<0.001
	27-Nov-12	7.2	67	0.834	0.001	0.001	0.009	<0.001	1.657	<0.001	0.06	<0.0001	<0.001	<0.001
	25-Jan-13	7	20	0.862	<0.001	0.0013	0.012	<0.001	1.903	<0.001	0.08	<0.0001	<0.001	0.001
	03-Apr-13	7.2	26	0.952	<0.001	0.001	0.006	<0.001	1.767	<0.001	0.04	<0.0001	<0.001	<0.001
	31-May-13	6.9	52	1.87	0.001	0.0028	0.044	<0.001	3.44	<0.001	0.06	<0.0001	<0.001	<0.001
	26-Jul-13	5.4	8	2.461	0.001	0.0043	0.069	<0.001	7.082	<0.001	0.08	<0.0001	<0.001	<0.001
	07-Oct-13	5.7	13	2.991	0.001	0.0051	0.136	<0.001	6.877	<0.001	0.1	<0.0001	<0.001	<0.001
	25-Nov-13	6.7	82	0.511	<0.001	0.0007	0.005	<0.001	1.32	<0.001	0.07	<0.0001	0.003	<0.001
	30-Jan-14	6.4	66	0.298	<0.001	0.0004	0.008	<0.001	0.785	<0.001	0.05	<0.0001	0.002	<0.001
	04-Jun-14	5.8	40	0.512	<0.001	0.0008	0.005	<0.001	1.157	<0.001	0.04	<0.0001	0.001	<0.001
	08-Oct-14	7.2	7	1.349	<0.001	0.0025	0.119	<0.001	2.669	<0.001	0.08	<0.0001	<0.001	<0.001
	10-Feb-15	6.4	156	0.085	<0.001	0.0002	0.037	<0.001	0.248	<0.001	0.01	<0.0001	0.003	<0.001
	04-Jun-15	6.9	54	0.097	<0.001	0.0001	0.003	<0.001	0.226	<0.001	0.03	<0.0001	0.001	<0.001
	12-Oct-15	6.4	87	0.2	0.001	0.0003	0.005	<0.001	0.459	<0.001	0.03	<0.0001	<0.001	<0.001
	17-Feb-16	6	113	0.362	<0.001	0.0008	0.022	<0.001	0.699	<0.001	<0.01	<0.0001	<0.001	<0.001
	30-Jun-16	5.8	111	0.236	<0.001	0.0004	0.005	<0.001	0.585	<0.001	0.06	<0.0001	<0.001	<0.001
	25-Oct-16	5.7	145	0.391	<0.001	0.0007	0.009	<0.001	0.85	<0.001	0.06	<0.0001	<0.001	<0.001
	14-Feb-17	6.4	115	0.242	<0.001	0.0004	0.005	<0.001	0.581	<0.001	0.05	<0.0001	<0.001	<0.001
	16-Jun-17	5.5	96	0.345	<0.001	0.0007	0.025	<0.001	0.811	<0.001	0.07	<0.0001	<0.001	<0.001
	31-Oct-17	6.1	85	0.173	<0.001	0.0004	0.01	<0.001	0.423	<0.001	<0.01	<0.0001	<0.001	<0.001
	07-Feb-18	6.3	147	0.306	<0.001	0.0006	0.017	<0.001	0.711	<0.001	<0.01	<0.0001	0.002	<0.001
	25-Jun-18	6.1	76	0.163	<0.001	0.0003	0.007	<0.001	0.362	<0.001	0.03	<0.0001	<0.001	<0.001
BH13	01-Oct-09	5.2	NA	0.721	0.001	0.002	0.243	<0.001	0.611	<0.001	0.04	0.0001	<0.001	<0.002
	01-Feb-10	5.5	NA	0.263	0.001	0.0008	0.24	<0.001	0.055	<0.001	0.03	<0.0001	<0.001	<0.002
	01-Apr-10	5.5	NA	0.214	<0.001	0.0006	0.092	<0.001	0.154	<0.001	0.01	<0.0001	<0.001	<0.002
	01-Jun-10	4.6	NA	0.244	<0.001	0.0008	0.243	0.001	0.285	<0.001	0.02	0.0001	<0.001	<0.002
	01-Nov-11	6.4	0	0.193	<0.001	0.0004	0.111	<0.001	0.528	<0.001	NA	<0.0001	<0.001	NA
	16-Dec-11	7.4	47	0.128	0.001	0.0004	0.021	<0.001	0.287	<0.001	<0.01	<0.0001	<0.001	<0.001
	13-Mar-12	6.9	198	0.009	0.006	0.0004	0.001	<0.001	0.002	<0.001	<0.01	<0.0001	0.001	0.002
	14-May-12	6.7	0	0.214	<0.001	0.0005	0.104	<0.001	0.761	<0.001	0.01	<0.0001	<0.001	<0.001
	10-Jul-12	5.9	0	0.387	<0.001	0.0008	0.14	0.001	1.228	<0.001	0.02	<0.0001	<0.001	<0.001
	18-Sep-12	5.5	0	1.907	0.001	0.0037	0.138	0.002	1.851	<0.001	0.09	<0.0001	<0.001	<0.001
	27-Nov-12	7.3	12	0.249	<0.001	0.0006	0.034	<0.001	0.615	<0.001	0.02	<0.0001	<0.001	0.001
	25-Jan-13	6.5	20	0.306	<0.001	0.0007	0.114	<0.001	0.839	<0.001	0.06	<0.0001	<0.001	0.001
	03-Apr-13	6.8	12	0.276	<0.001	0.0006	0.098	<0.001	0.774	<0.001	<0.01	<0.0001	<0.001	<0.001
	31-May-13	6.9	50	0.553	<0.001	0.0011	0.091	0.001	0.681	<0.001	0.02	<0.0001	<0.001	<0.001
	26-Jul-13	5	<2	1.746	<0.001	0.0027	0.098	0.001	0.924	<0.001	0.09	<0.0001	<0.001	<0.001
	07-Oct-13	6.1	14	0.4	<0.001	0.0009	0.109	0.001	0.625	<0.001	0.04	<0.0001	<0.001	<0.001
	25-Nov-13	6.6	8	0.169	<0.001	0.0006	0.075	<0.001	0.43	<0.001	0.03	<0.0001	<0.001	<0.001
	30-Jan-14	6.3	30	0.124	<0.001	0.0005	0.004	<0.001	0.133	<0.001	0.05	<0.0001	<0.001	<0.001
	04-Jun-14	4.8	234	0.168	<0.001	0.0005	0.054	<0.001	0.373	<0.001	<0.01	<0.0001	<0.001	<0.001
	08-Oct-14	7.4	<2	0.644	<0.001	0.0015	0.115	0.001	0.594	<0.001	0.06	<0.0001	<0.001	<0.001
	10-Feb-15	5.4	4	0.075	<0.001	0.0003	0.041	<0.001	0.14	<0.001	0.02	0.0004	<0.001	<0.001
	04-Jun-15	5.8	4	0.164	0.017	0.0003	0.04	<0.001	0.198	<0.001	0.02	<0.0001	<0.001	<0.001
	12-Oct-15	6.1	40	0.102	<0.001	0.0003	0.059	<0.001	0.227	<0.001	<0.01	<0.0001	<0.001	<0.001
	17-Feb-16	4.8	61	0.096	<0.001	0.0003	0.041	<0.001	0.128	<0.001	<0.01	<0.0001	<0.001	<0.001
	30-Jun-16	4.7	53	0.077	<0.001	0.0003	0.053	<0.001	0.162	<0.001	0.03	<0.0001	<0.001	<0.001
	25-Oct-16	4.6	75	0.069	<0.001	0.0004	0.074	<0.001	0.148	<0.001	0.03	<0.0001	<0.001	<0.001
	14-Feb-17	5.0	61	0.052	<0.001	0.0002	0.052	<0.001	0.109	<0.001	0.02	<0.0001	<0.001	<0.001
	16-Jun-17	5.2	47	0.038	<0.001	0.0002	0.032	<0.001	0.068	<0.001	0.03	<0.0001	<0.001	<0.001
	31-Oct-17	4.9	45	0.037	<0.001	0.0002	0.04	<0.001	0.081	<0.001	<0.01	<0.0001	<0.001	<0.001
	07-Feb-18	5.7	61	0.032	<0.001	0.0002	0.016	<0.001	0.07	<0.001	<0.01	<0.0001	<0.001	<0.001
	25-Jun-18	4.9	68	0.075	<0.001	0.0003	0.029	<0.001	0.068	<0.001	0.03	<0.0001	<0.001	<0.001

Groundwater Monitoring - Summary of Results

		Analysis												
Borehole	Date	pH	CaCO3 (mg/l)	Nickel (dissolved) mg/l	Chromium (dissolved) mg/l	Cadmium (dissolved) mg/l	Copper (dissolved) mg/l	Lead (dissolved) mg/l	Zinc (dissolved) mg/l	Arsenic (dissolved) mg/l	Boron (dissolved) mg/l	Mercury (dissolved) mg/l	Selenium (dissolved) mg/l	Vanadium (dissolved) mg/l
Guideline Value		6-9 (1)	NG	0.02 (1)	0.0047(1)	0.00008(1)	0.001-0.028* (1)	0.0072 (1)	0.008 - 0.125* (1)	0.05(1)	2 (1)	0.00005(1)	0.01(2)	0.02 - 0.06* (1)
BH901	01-Mar-06	5.8	<20	0.076	0.008	<0.001	0.074	<0.005	0.031	<0.005	<0.005	<0.00005	<0.005	NA
	01-May-06	4.3	<20	2.7	<0.005	0.002	2.2	<0.005	0.89	<0.005	0.032	<0.00005	<0.005	NA
	01-Dec-06	3.5	<20	3.8	0.006	0.005	2.3	<0.005	1.6	<0.005	0.140	<0.00005	<0.005	NA
	01-Aug-07	6.70	62	0.09	<0.005	<0.001	0.013	<0.005	0.018	<0.005	0.031	<0.00005	<0.005	NA
	01-Aug-08	3.3	<20	2.1	<0.005	0.003	0.96	<0.005	2.5	<0.005	0.060	<0.00005	<0.005	NA
	01-Sep-09	5.36	6.5	0.342	<0.005	<0.001	0.401	<0.005	0.522	<0.005	<0.018	<0.00005	<0.005	NA
	01-Aug-10	6.40	41	0.035	0.001	<0.001	0.019	<0.001	0.142	<0.001	0.030	<0.00005	<0.005	NA
	01-Aug-11	6.70	11	0.185	<0.001	0.0003	0.067	<0.001	0.749	<0.001	0.030	<0.0001	<0.001	NA
	14-Dec-11	6	<2	0.608	<0.001	0.0008	0.3	<0.001	2.682	<0.001	0.11	<0.0001	0.001	<0.001
	13-Mar-12	5.2	0	0.44	0.002	0.0011	2.143	0.002	2.89	<0.001	<0.01	<0.0001	<0.001	0.001
	14-May-12	6.7	0	3.982	0.007	0.0031	6.873	0.003	17.55	<0.001	0.03	<0.0001	0.003	<0.001
	10-Jul-12	4.9	0	0.279	0.002	0.0005	0.834	<0.001	1.561	<0.001	0.02	<0.0001	<0.001	<0.001
	18-Sep-12	6.1	0	0.212	0.001	0.0006	0.394	<0.001	0.815	<0.001	0.04	<0.0001	<0.001	<0.001
	27-Nov-12	4.7	<0	0.283	0.001	0.0006	0.523	0.002	1.196	<0.001	0.04	<0.0001	<0.001	<0.001
	25-Jan-13	6.4	13	0.319	<0.001	0.0008	0.536	0.002	1.19	<0.001	0.05	<0.0001	<0.001	0.001
	03-Apr-13	7.1	24	0.136	<0.001	0.0003	0.234	<0.001	0.462	<0.001	<0.01	<0.0001	<0.001	<0.001
	31-May-13	5.9	<30	0.307	0.001	0.0009	0.452	<0.001	1.325	<0.001	<0.01	<0.0001	<0.001	<0.001
	26-Jul-13	4.7	<2	0.316	<0.001	0.0013	0.272	0.002	1.394	<0.001	0.03	<0.0001	<0.001	<0.001
	07-Oct-13	5.4	0	0.36	<0.001	0.0014	0.437	<0.001	1.474	<0.001	0.04	<0.0001	<0.001	<0.001
	25-Nov-13	6	2	0.738	<0.001	0.0015	0.777	0.001	2.073	<0.001	0.1	<0.0001	<0.001	<0.001
	30-Jan-14	4.2	<2	0.553	<0.001	0.0009	1.356	0.003	1.592	<0.001	0.11	<0.0001	<0.001	<0.001
	04-Jun-14	4.3	0	0.521	<0.001	0.0036	1.612	0.003	2.457	<0.001	0.04	<0.0001	<0.001	<0.001
	08-Oct-14	6.3	<2	1.048	0.001	0.008	0.772	0.003	2.042	<0.001	0.04	<0.0001	<0.001	<0.001
	10-Feb-15	4.6	0	0.386	<0.001	0.0009	1.219	<0.001	1.098	<0.001	0.12	0.0002	<0.001	<0.001
	04-Jun-15	5.5	0	0.58	0.002	0.0028	1.03	0.001	1.482	<0.001	0.06	<0.0001	0.002	<0.001
	12-Oct-15	Not Sampled						Not Sampled						Not Sampled
BH901R	17-Feb-16	5.9	114	0.447	<0.001	0.0011	0.633	<0.001	1.214	<0.001	0.06	<0.0001	<0.001	<0.001
	30-Jun-16	5.9	131	0.266	<0.001	0.0006	0.184	<0.001	0.702	<0.001	0.05	<0.0001	<0.001	<0.001
	25-Oct-16	5.6	49	0.167	<0.001	0.0003	0.402	<0.001	0.448	<0.001	0.03	<0.0001	<0.001	<0.001
	14-Feb-17	6.2	125	0.202	<0.001	0.0004	0.252	<0.001	0.497	<0.001	0.06	<0.0001	<0.001	<0.001
	16-Jun-17	6.2	45	0.13	<0.001	0.0004	0.319	<0.001	0.392	<0.001	0.05	<0.0001	<0.001	<0.001
	31-Oct-17	6.3	103	0.158	<0.001	0.0003	0.222	<0.001	0.368	<0.001	0.09	<0.0001	<0.001	<0.001
	07-Feb-18	6.4	134	0.394	<0.001	0.0008	0.519	<0.001	1.154	<0.001	0.08	<0.0001	<0.001	<0.001
	25-Jun-18	5.7	73	0.146	<0.001	0.0004	0.344	<0.001	0.412	<0.001	0.05	<0.0001	<0.001	<0.001

Notes:

Yellow cells indicate elevated concentrations compared with Environmental Quality Standards and UK Drinking Water Standards.

Blue cells are results obtained from the Site Protection Monitoring Programme (SPMP).

NG = No Guideline

NA = Not Available

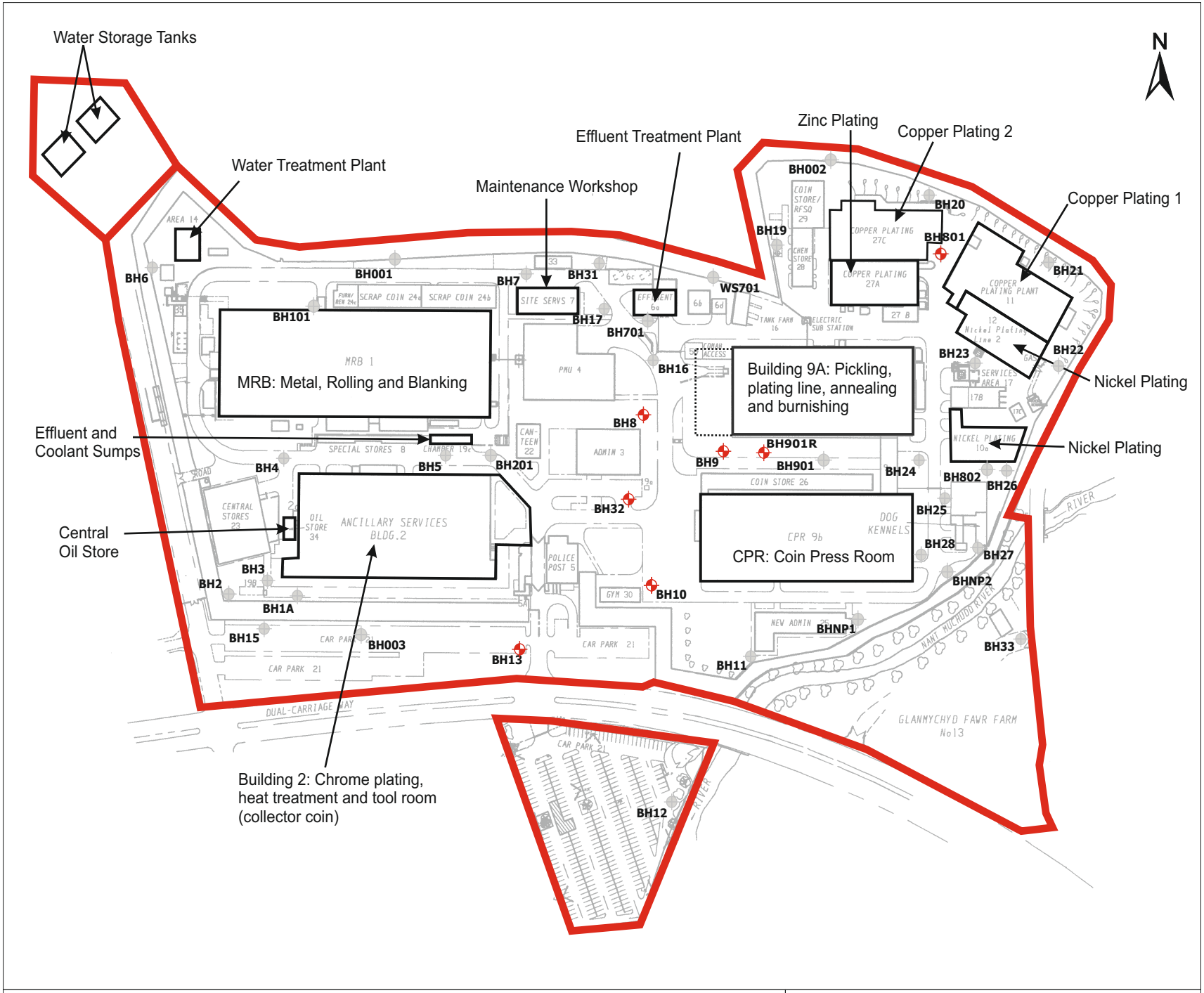
(1)= European Environmental Quality Standard (EQS): The River Basin Districts Typology, Standards and Groundwater threshold Values (Water Framework Directive (England and Wales) Directions 2010

(2)= Water Supply (Water Quality) (England and Wales) Regulations 2000 (SI 2000/3184) (as amended); Water Supply (Water Quality) (Wales) Regulations 2001 (SI 3911 W.323) (as amended)

* = Range determined by alkalinity

Appendix 3

Figures and Graphs

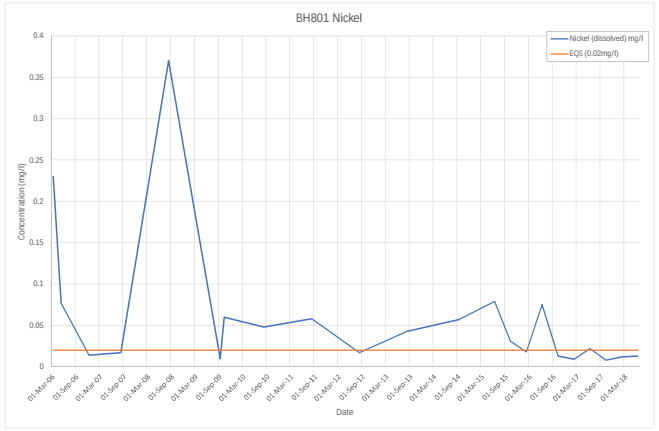


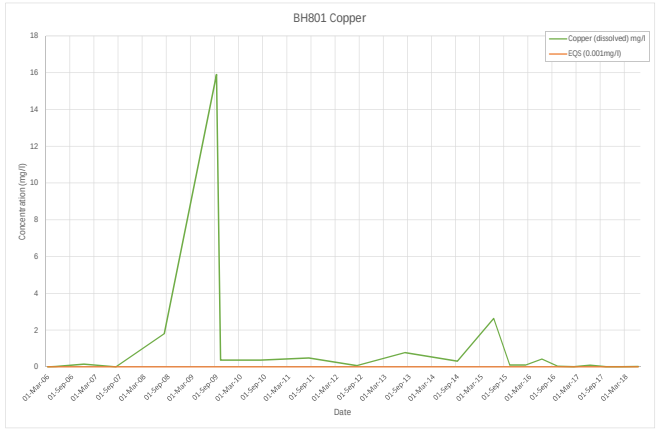
Legend

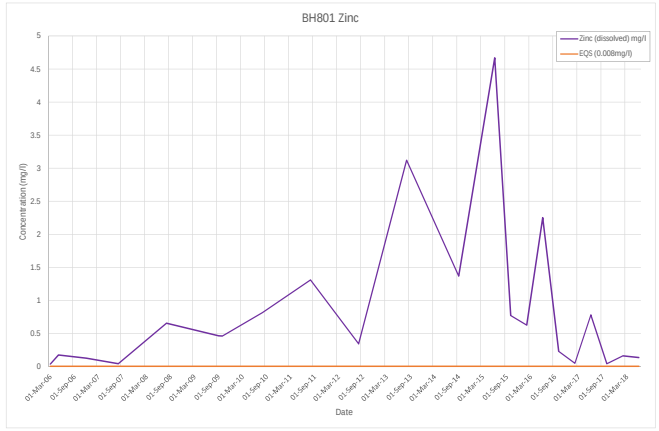
- Site Boundary
- Sampled Boreholes

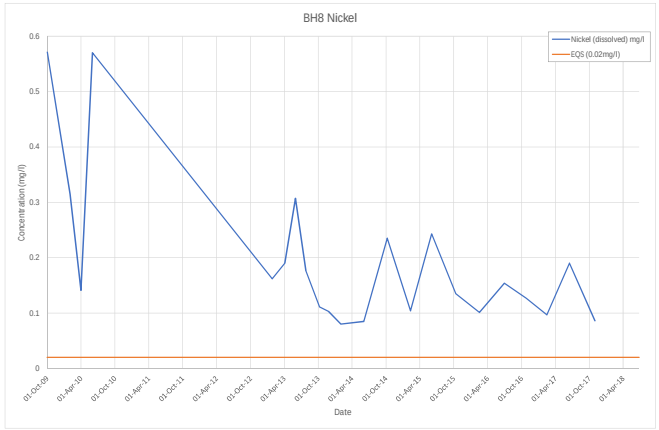
Title	**Figure 1: Borehole Location Plan**
Site	**The Royal Mint, Llantrisant Pontyclun, Mid Glamorgan, CF72 8YT**
Client	**The Royal Mint**
Project No.	**1700002116**
Issue	**1**
Date	**June 2018**
Drawn by	**RH**
Scale	**NTS**

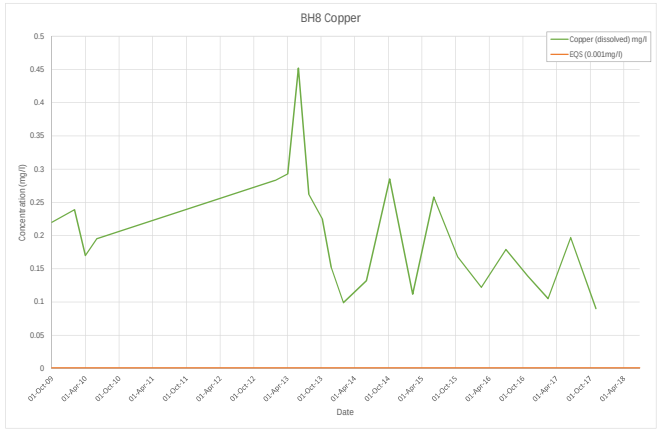
RAMBOLL

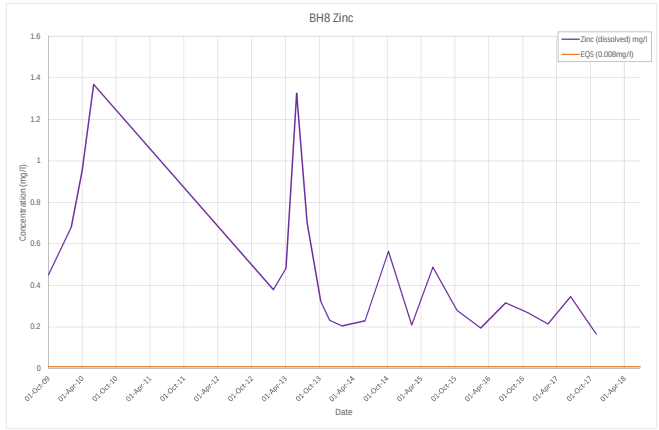

BH801 Nickel
Nickel (dissolved) mg/l
EQS (0.02mg/l)
Concentration (mg/l)
Date

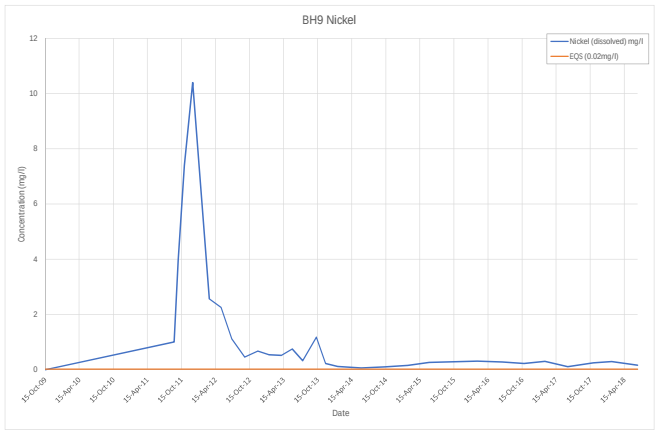

BH801 Copper
Copper (dissolved) mg/l
EQS (0.001mg/l)
Concentration (mg/l)
Date

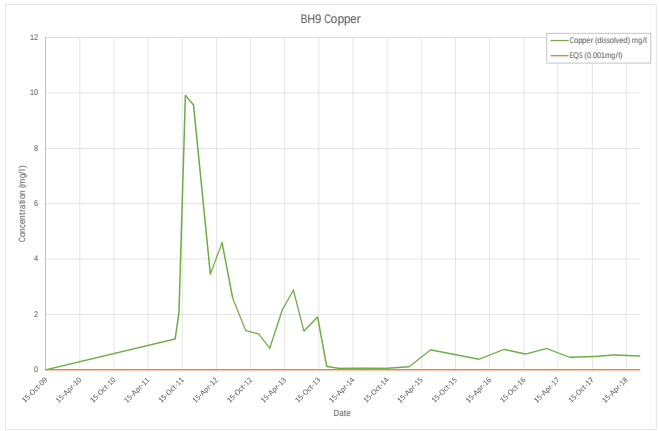

BH801 Zinc
Zinc (dissolved) mg/l
EQS (0.008mg/l)
Concentration (mg/l)
Date

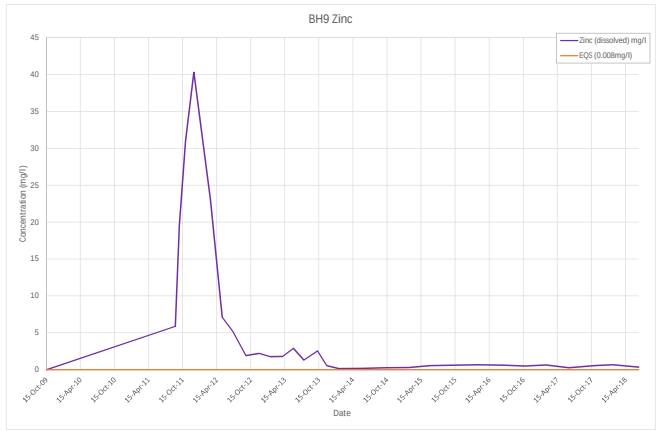

BH8 Nickel
Nickel (dissolved) mg/l
EQS (0.02mg/l)
Concentration (mg/l)
Date

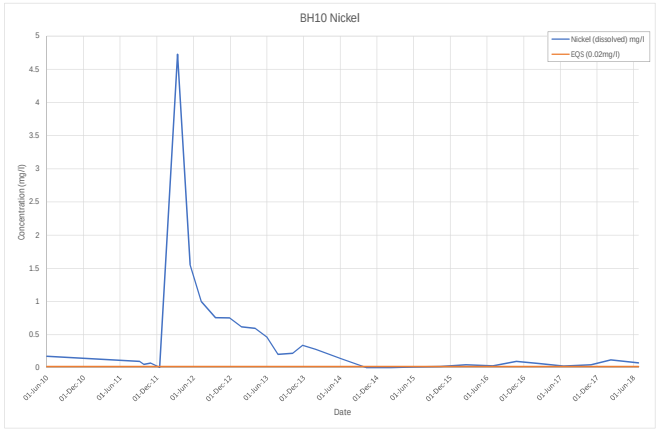

BH8 Copper
Copper (dissolved) mg/l
EQS (0.001mg/l)
Concentration (mg/l)
Date

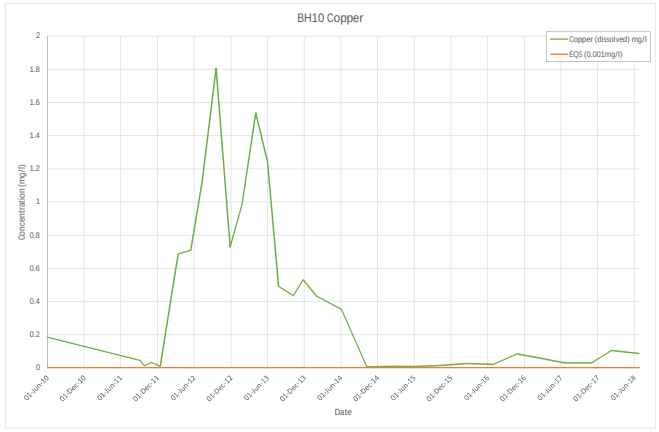

BH8 Zinc
Zinc (dissolved) mg/l
EQS (0.008mg/l)
Concentration (mg/l)
Date

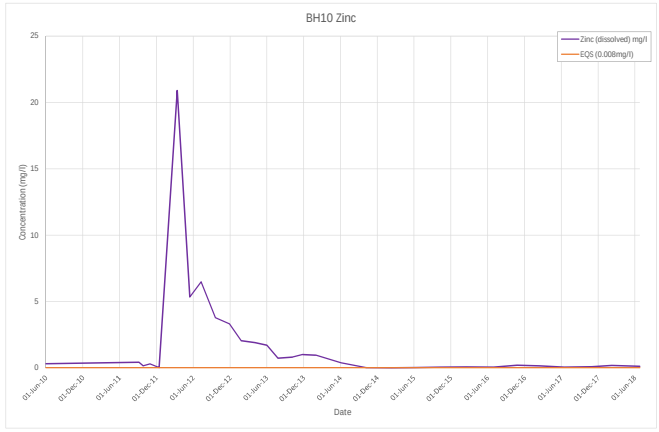

BH9 Nickel
Nickel (dissolved) mg/l
EQS (0.02mg/l)
Concentration (mg/l)
Date

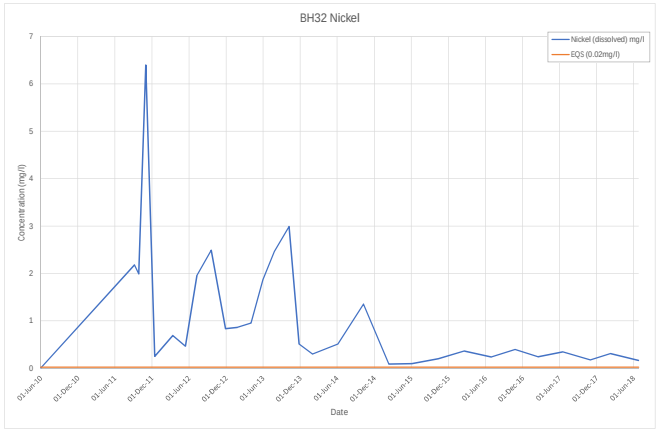

BH9 Copper
Copper (dissolved) mg/l
EQS (0.001mg/l)
Concentration (mg/l)
Date

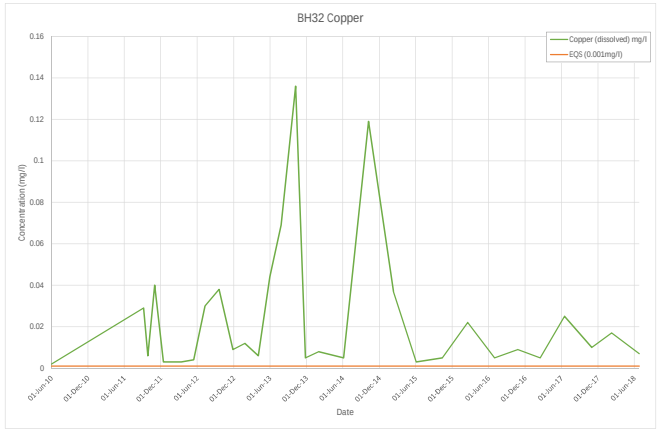

BH9 Zinc
Zinc (dissolved) mg/l
EQS (0.008mg/l)
Concentration (mg/l)
Date

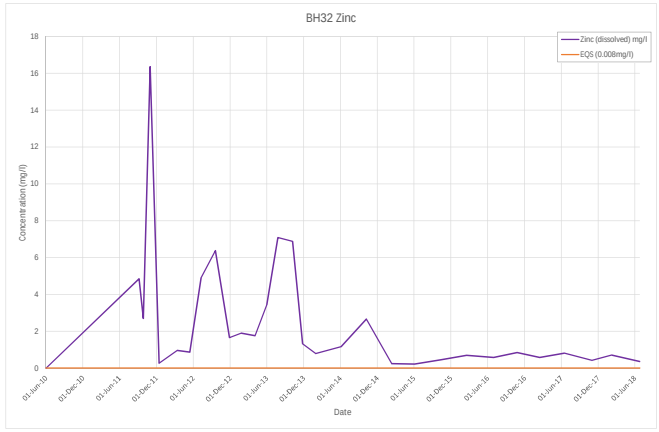

BH10 Nickel
Nickel (dissolved) mg/l
EQS (0.02mg/l)
Concentration (mg/l)
Date

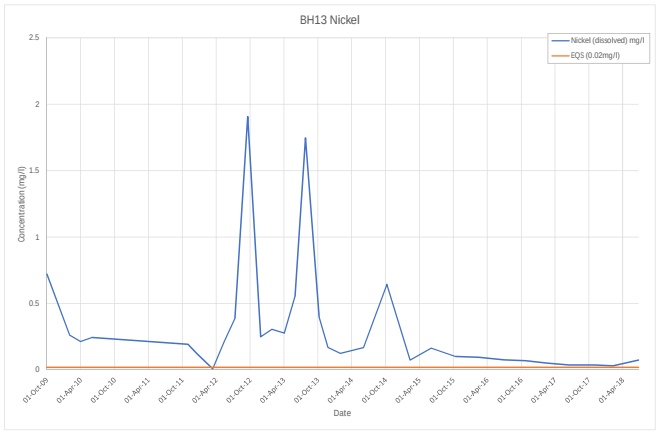

BH10 Copper
Copper (dissolved) mg/l
EQS (0.001mg/l)
Concentration (mg/l)
Date

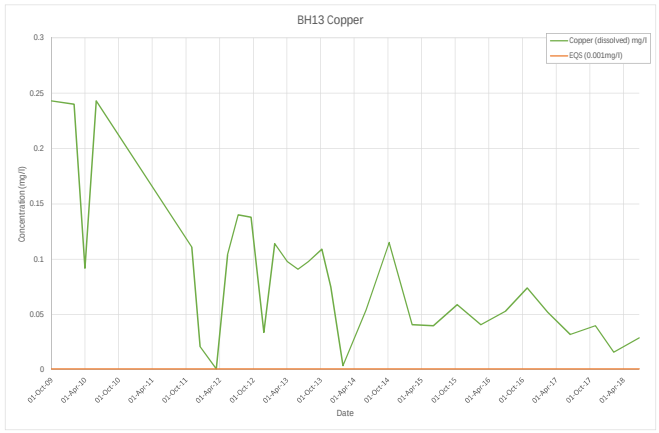

BH10 Zinc
Zinc (dissolved) mg/l
EQS (0.008mg/l)
Concentration (mg/l)
Date

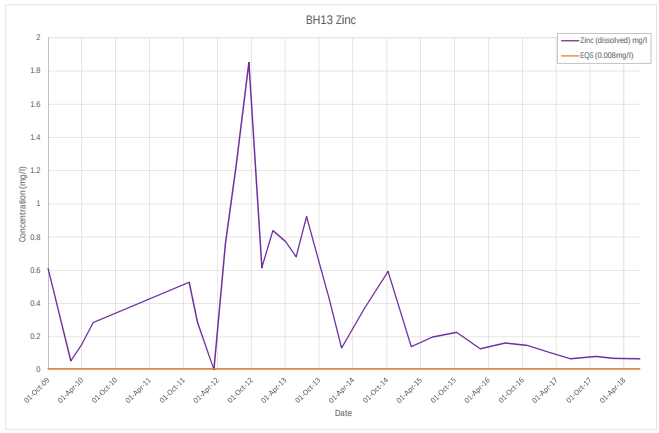

BH32 Nickel
Nickel (dissolved) mg/l
EQS (0.02mg/l)
Concentration (mg/l)
Date

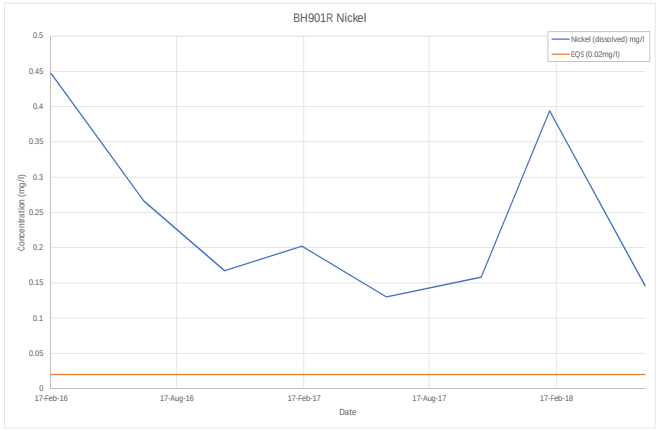

BH32 Copper
Copper (dissolved) mg/l
EQS (0.001mg/l)
Concentration (mg/l)
Date

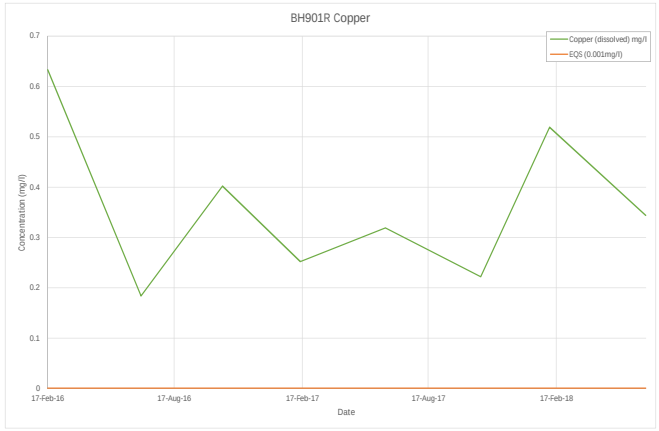

BH32 Zinc
Zinc (dissolved) mg/l
EQS (0.008mg/l)
Concentration (mg/l)
Date

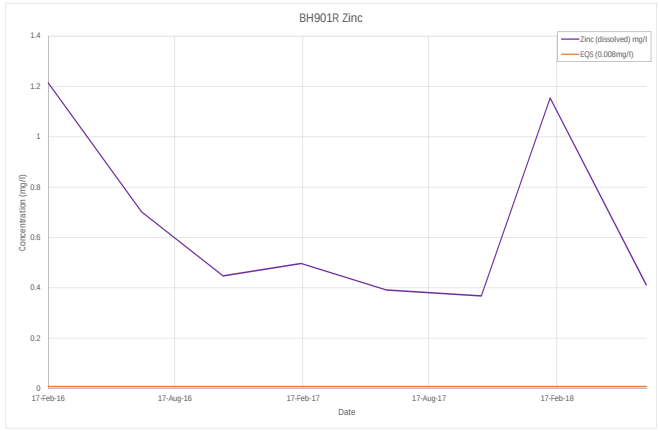

BH13 Nickel
Nickel (dissolved) mg/l
EQS (0.02mg/l)
Concentration (mg/l)
Date


BH13 Copper
Copper (dissolved) mg/l
EQS (0.001mg/l)
Concentration (mg/l)
Date


BH13 Zinc
Zinc (dissolved) mg/l
EQS (0.008mg/l)
Concentration (mg/l)
Date


BH901R Nickel
Nickel (dissolved) mg/l
EQS (0.02mg/l)
Concentration (mg/l)
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
17-Feb-16
17-Aug-16
17-Feb-17
17-Aug-17
17-Feb-18
Date


BH901R Copper
Copper (dissolved) mg/l
EQS (0.001mg/l)
Concentration (mg/l)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
17-Feb-16
17-Aug-16
17-Feb-17
17-Aug-17
17-Feb-18
Date


BH901R Zinc
Zinc (dissolved) mg/l
EQS (0.008mg/l)
Concentration (mg/l)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
17-Feb-16
17-Aug-16
17-Feb-17
17-Aug-17
17-Feb-18
Date