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Mr Lloyd
Caerphilly County B.C.
Caerphilly County Borough
Council
Unit B5
Tiryberth Depot
Hengoed CF82 8AU
Caerphilly

09 April 2018

Test Report: COV/1523721/2018

Dear Mr Lloyd

Analysis of your sample(s) submitted on 20 March 2018 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

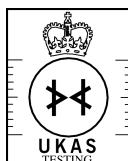
Signed: 

Name: R. Stocks

Title: Inorganic Team Leader



Report Summary



1314
0897
4409



**Mr Rhodri Lloyd
Caerphilly County B.C.
Caerphilly County Borough
Council
Unit B5
Tiryberth Depot
Hengoed
Caerphilly**

Date of Issue: **09 April 2018**

Report Number: **COV/1523721/2018**

Issue **1**

This issue replaces
all previous issues

Job Description: Trehir Landfill Site

Job Location: Caerphilly

Number of Samples
included in this report **21**

Job Received: **20 March 2018**

Number of Test Results
included in this report **469**

Analysis Commenced: **20 March 2018**

Signed: 

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

ALS Environmental Ltd was responsible for sampling.

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office:
ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

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Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953489**

Sample **1** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **03**

Sample Description: **03**

Sample Matrix: **Land Leachate**

Sample Date/Time: **20 March 2018 12:35**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	17.0	Deg C	20/03/2018	N Cov	FIELD
Calcium , Total as Ca	77.6	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	25.3	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	55.3	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	106	mg/l	29/03/2018	Y Cov	WAS049
pH	7.2	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1710	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	410	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	80.5	mg/l	22/03/2018	Y Cov	WAS055
Nitrogen, Total Oxidised as N	11.3	mg/l	23/03/2018	Y Cov	WAS036
Sulphate as SO4	25.1	mg/l	22/03/2018	N Cov	WAS036
BOD + ATU (5 day)	7	mg/l	27/03/2018	Y Cov	WAS001
COD (Total)	96.0	mg/l	24/03/2018	Y Cov	WAS040
TOC (Filtered)	27.0	mg/l	05/04/2018	Y Cov	WAS005
Chloride as Cl, High Level	125	mg/l	21/03/2018	Y Cov	WAS036

Analyst Comments for 16953489:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised. {*/}Ammonia analysed by colorimetric analysis. {*/}

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

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Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953490**

Sample **2** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **08**

Sample Description: **08**

Sample Matrix: **Land Leachate**

Sample Date/Time: **20 March 2018 10:42**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.2	Deg C	20/03/2018	N Cov	FIELD
Calcium , Total as Ca	75.1	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	22.6	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	45.4	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	86.2	mg/l	29/03/2018	Y Cov	WAS049
pH	7.8	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1430	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	311	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	60.1	mg/l	22/03/2018	Y Cov	WAS055
Nitrogen, Total Oxidised as N	15.1	mg/l	23/03/2018	Y Cov	WAS036
Sulphate as SO4	16.4	mg/l	22/03/2018	N Cov	WAS036
BOD + ATU (5 day)	5	mg/l	27/03/2018	Y Cov	WAS001
COD (Total)	79.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	20.9	mg/l	05/04/2018	Y Cov	WAS005
Chloride as Cl, High Level	110	mg/l	21/03/2018	Y Cov	WAS036

Analyst Comments for 16953490:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised. {*/}Ammonia analysed by colorimetric analysis. {*/}

This issue replaces all previous issues

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Title: **Inorganic Team Leader**

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953491**

Sample **3** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **MHL28**

Sample Description: **MHL28**

Sample Matrix: **Land Leachate**

Sample Date/Time: **20 March 2018 11:10**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	15.2	Deg C	20/03/2018	N Cov	FIELD
Calcium , Total as Ca	79.5	mg/l	03/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	26.4	mg/l	03/04/2018	Y Cov	WAS049
Potassium , Total as K	56.1	mg/l	03/04/2018	Y Cov	WAS049
Sodium , Total as Na	111	mg/l	03/04/2018	Y Cov	WAS049
pH	7.7	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1790	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	526	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	85.4	mg/l	22/03/2018	Y Cov	WAS055
Nitrogen, Total Oxidised as N	10.4	mg/l	21/03/2018	Y Cov	WAS036
Sulphate as SO4	14.3	mg/l	21/03/2018	N Cov	WAS036
BOD + ATU (5 day)	20	mg/l	27/03/2018	Y Cov	WAS001
COD (Total)	103	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	28.8	mg/l	05/04/2018	Y Cov	WAS005
Chloride as Cl, High Level	136	mg/l	21/03/2018	Y Cov	WAS036

Analyst Comments for 16953491:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised. {*/}Ammonia analysed by colorimetric analysis. {*/}

This issue replaces all previous issues

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Title: **Inorganic Team Leader**

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953492**

Sample **4** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N2**

Sample Description: **N2**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 10:30**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.4	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	19.1	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	0.27	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	9.1	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	0.045	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.005	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	0.94	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	4.84	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	29/03/2018	Y Cov	WAS049
pH	6.6	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	187	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	71.6	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	9.9	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	1.6	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	8.2	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	4.7	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	<11.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	<0.7	mg/l	05/04/2018	Y Cov	WAS005
Water Level to top of Casing	4.50	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953492:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

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Signed: 

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953493**

Sample **5** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N5**

Sample Description: **N5**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 13:40**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.4	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	73.7	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	0.003	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	5.59	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	0.007	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	42.9	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	0.647	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.025	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	7.46	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	36.7	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	0.03	mg/l	29/03/2018	Y Cov	WAS049
pH	6.9	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	883	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	259	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	1.19	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	125	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	0.9	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	12.1	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	2.6	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	50.0	mg/l	24/03/2018	Y Cov	WAS040
TOC (Filtered)	7.3	mg/l	05/04/2018	Y Cov	WAS005
Water Level to top of Casing	4.60	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953493:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

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Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

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Signed: 

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953494**

Sample **6** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N6**

Sample Description: **N6**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 13:30**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.8	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	04/04/2018	Y Cov	WAS049
Calcium , Total as Ca	62.5	mg/l	04/04/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	04/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	04/04/2018	Y Cov	WAS049
Iron , Total as Fe	2.52	mg/l	04/04/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	04/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	37.6	mg/l	04/04/2018	Y Cov	WAS049
Manganese , Total as Mn	6.36	mg/l	04/04/2018	Y Cov	WAS049
Nickel, Total as Ni	0.025	mg/l	04/04/2018	Y Cov	WAS049
Potassium , Total as K	18.8	mg/l	04/04/2018	Y Cov	WAS049
Sodium , Total as Na	43.7	mg/l	04/04/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	04/04/2018	Y Cov	WAS049
pH	6.6	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	940	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	317	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	17.7	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	58.5	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	16.7	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	1.0	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	33.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	6.9	mg/l	05/04/2018	Y Cov	WAS005
Water Level to top of Casing	0.00	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953494:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

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Signed: 

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953495**

Sample **7** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N8**

Sample Description: **N8**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 14:10**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.0	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	04/04/2018	Y Cov	WAS049
Calcium , Total as Ca	70.0	mg/l	04/04/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	04/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	04/04/2018	Y Cov	WAS049
Iron , Total as Fe	2.70	mg/l	04/04/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	04/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	43.7	mg/l	04/04/2018	Y Cov	WAS049
Manganese , Total as Mn	1.15	mg/l	04/04/2018	Y Cov	WAS049
Nickel, Total as Ni	0.011	mg/l	04/04/2018	Y Cov	WAS049
Potassium , Total as K	2.85	mg/l	04/04/2018	Y Cov	WAS049
Sodium , Total as Na	13.8	mg/l	04/04/2018	Y Cov	WAS049
Zinc, Total as Zn	0.04	mg/l	04/04/2018	Y Cov	WAS049
pH	7.1	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	856	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	110	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	204	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	35.1	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	1.4	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	19.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	2.2	mg/l	06/04/2018	Y Cov	WAS005
Water Level to top of Casing	2.20	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953495:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

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Signed: 

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953496**

Sample **8** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH1**

Sample Description: **NBH1**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 13:08**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.8	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	120	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	0.012	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	0.014	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	24.4	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	0.021	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	45.7	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	3.31	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.047	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	42.1	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	101	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	0.08	mg/l	29/03/2018	Y Cov	WAS049
pH	6.9	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1740	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	377	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	31.9	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	248	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	4.0	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	7.5	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	<0.5	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	179	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	25.7	mg/l	05/04/2018	Y Cov	WAS005
Water Level to top of Casing	3.38	m	21/03/2018	N Cov	COM05

Analyst Comments for 16953496:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Signed: 

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953497**

Sample **9** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH2**

Sample Description: **NBH2**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 12:37**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.6	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	04/04/2018	Y Cov	WAS049
Calcium , Total as Ca	129	mg/l	04/04/2018	Y Cov	WAS049
Chromium , Total as Cr	0.004	mg/l	04/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	04/04/2018	Y Cov	WAS049
Iron , Total as Fe	21.2	mg/l	04/04/2018	Y Cov	WAS049
Lead , Total as Pb	0.009	mg/l	04/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	42.5	mg/l	04/04/2018	Y Cov	WAS049
Manganese , Total as Mn	1.96	mg/l	04/04/2018	Y Cov	WAS049
Nickel, Total as Ni	0.011	mg/l	04/04/2018	Y Cov	WAS049
Potassium , Total as K	58.1	mg/l	04/04/2018	Y Cov	WAS049
Sodium , Total as Na	88.7	mg/l	04/04/2018	Y Cov	WAS049
Zinc, Total as Zn	0.07	mg/l	04/04/2018	Y Cov	WAS049
pH	6.8	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	2020	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	795	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	91.2	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	110	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	1.5	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	<4.4	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	<0.5	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	72.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	17.3	mg/l	05/04/2018	Y Cov	WAS005
Water Level to top of Casing	2.64	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953497:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953498**

Sample **10** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH3**

Sample Description: **NBH3**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 11:40**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.6	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	132	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	0.003	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	1.98	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	22.4	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	1.15	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.01	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	20.7	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	32.8	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/03/2018	Y Cov	WAS049
pH	6.7	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1020	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	450	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	16.4	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	41.4	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	5.3	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	20.0	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	7.1	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	40.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	7.4	mg/l	04/04/2018	Y Cov	WAS005
Water Level to top of Casing	5.53	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953498:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953499**

Sample **11** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH4**

Sample Description: **NBH4**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 11:10**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.8	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	78.4	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	8.68	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	21.2	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	5.50	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.012	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	3.51	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	7.89	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/03/2018	Y Cov	WAS049
pH	6.4	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	563	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	259	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	15.2	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	51.9	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	5.7	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	29.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	2.4	mg/l	05/04/2018	Y Cov	WAS005
Water Level to top of Casing	16.28	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953499:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

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I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953500**

Sample **12** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH5**

Sample Description: **NBH5**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 10:20**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.4	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	04/04/2018	Y Cov	WAS049
Calcium , Total as Ca	67.7	mg/l	04/04/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	04/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	04/04/2018	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	04/04/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	04/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	14.6	mg/l	04/04/2018	Y Cov	WAS049
Manganese , Total as Mn	1.05	mg/l	04/04/2018	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	04/04/2018	Y Cov	WAS049
Potassium , Total as K	6.35	mg/l	04/04/2018	Y Cov	WAS049
Sodium , Total as Na	11.5	mg/l	04/04/2018	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	04/04/2018	Y Cov	WAS049
pH	6.4	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	589	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	188	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	20.3	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	7.1	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	29.8	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	2.0	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	31.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	3.7	mg/l	04/04/2018	Y Cov	WAS005
Water Level to top of Casing	5.84	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953500:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953501**

Sample **13** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH6**

Sample Description: **NBH6**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 10:45**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.8	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	11.2	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	1.83	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	4.4	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	0.153	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.010	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	0.83	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	5.92	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	29/03/2018	Y Cov	WAS049
pH	6.4	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	127	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	30.4	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	19.2	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	0.8	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	<4.4	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	9.4	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	27.0	mg/l	24/03/2018	Y Cov	WAS040
TOC (Filtered)	0.7	mg/l	04/04/2018	Y Cov	WAS005
Water Level to top of Casing	9.26	m	20/03/2018	N Cov	COM05

Analyst Comments for 16953501:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953502**

Sample **14** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W1**

Sample Description: **W1**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 09:52**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.3	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	03/04/2018	Y Cov	WAS049
Calcium , Total as Ca	28.9	mg/l	03/04/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	03/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	03/04/2018	Y Cov	WAS049
Iron , Total as Fe	0.32	mg/l	03/04/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	03/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	13.2	mg/l	03/04/2018	Y Cov	WAS049
Manganese , Total as Mn	0.041	mg/l	03/04/2018	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	03/04/2018	Y Cov	WAS049
Potassium , Total as K	5.39	mg/l	03/04/2018	Y Cov	WAS049
Sodium , Total as Na	19.5	mg/l	03/04/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	03/04/2018	Y Cov	WAS049
pH	7.6	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	370	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	87.2	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	37.9	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	1.1	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	50.5	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	12.5	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	<11.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	1.0	mg/l	04/04/2018	Y Cov	WAS005

Analyst Comments for 16953502:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953503**

Sample **15** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W2**

Sample Description: **W2**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 09:57**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.2	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	28.8	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	13.2	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	0.040	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	5.46	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	19.1	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/03/2018	Y Cov	WAS049
pH	7.8	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	370	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	87.2	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	37.4	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	1.1	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	50.0	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	12.1	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	<11.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	1.0	mg/l	04/04/2018	Y Cov	WAS005

Analyst Comments for 16953503:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

Certificate of Analysis



Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953504**

Sample **16** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W3**

Sample Description: **W3**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 10:07**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.5	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	04/04/2018	Y Cov	WAS049
Calcium , Total as Ca	29.3	mg/l	04/04/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	04/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	04/04/2018	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	04/04/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	04/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	13.2	mg/l	04/04/2018	Y Cov	WAS049
Manganese , Total as Mn	0.026	mg/l	04/04/2018	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	04/04/2018	Y Cov	WAS049
Potassium , Total as K	5.62	mg/l	04/04/2018	Y Cov	WAS049
Sodium , Total as Na	19.6	mg/l	04/04/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	04/04/2018	Y Cov	WAS049
pH	7.7	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	371	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	87.2	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	36.4	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	1.2	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	50.2	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	12.8	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	<11.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	0.9	mg/l	05/04/2018	Y Cov	WAS005

Analyst Comments for 16953504:

This sample has been analysed for Copper, Total as Cu, Magnesium, Total as Mg, Sodium Total as Na, TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953505**

Sample **17** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W5**

Sample Description: **W5**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 11:07**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.3	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	04/04/2018	Y Cov	WAS049
Calcium , Total as Ca	5.96	mg/l	04/04/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	04/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	04/04/2018	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	04/04/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	04/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	4.9	mg/l	04/04/2018	Y Cov	WAS049
Manganese , Total as Mn	0.022	mg/l	04/04/2018	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	04/04/2018	Y Cov	WAS049
Potassium , Total as K	0.97	mg/l	04/04/2018	Y Cov	WAS049
Sodium , Total as Na	5.89	mg/l	04/04/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	04/04/2018	Y Cov	WAS049
pH	7.3	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	119	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	17.0	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	21/03/2018	N Cov	WAS036
Chloride as Cl	15.6	mg/l	21/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	3.4	mg/l	21/03/2018	N Cov	WAS036
Sulphate as SO4	<4.4	mg/l	21/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	10.9	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	<11.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	0.9	mg/l	04/04/2018	Y Cov	WAS005

Analyst Comments for 16953505:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

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Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953506**

Sample **18** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Groundwater Sump**

Sample Description: **Sump**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 12:58**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.0	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	71.5	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	0.62	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	32.3	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	0.675	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.008	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	8.99	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	22.2	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	29/03/2018	Y Cov	WAS049
pH	7.0	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	762	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	208	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	0.45	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	109	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	5.8	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	25.6	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	3.1	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	19.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	3.5	mg/l	04/04/2018	Y Cov	WAS005

Analyst Comments for 16953506:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953507**

Sample **19** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Land Drain 1**

Sample Description: **Land Drain 1a**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 10:22**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	14.3	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/03/2018	Y Cov	WAS049
Calcium , Total as Ca	77.3	mg/l	29/03/2018	Y Cov	WAS049
Chromium , Total as Cr	0.006	mg/l	29/03/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/03/2018	Y Cov	WAS049
Iron , Total as Fe	2.03	mg/l	29/03/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/03/2018	Y Cov	WAS049
Magnesium, Total as Mg	25.5	mg/l	29/03/2018	Y Cov	WAS049
Manganese , Total as Mn	1.55	mg/l	29/03/2018	Y Cov	WAS049
Nickel, Total as Ni	0.015	mg/l	29/03/2018	Y Cov	WAS049
Potassium , Total as K	56.1	mg/l	29/03/2018	Y Cov	WAS049
Sodium , Total as Na	108	mg/l	29/03/2018	Y Cov	WAS049
Zinc, Total as Zn	0.03	mg/l	29/03/2018	Y Cov	WAS049
pH	7.8	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1780	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	513	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	86.6	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	135	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	13.2	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	15.4	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	4.7	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	101	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	28.7	mg/l	04/04/2018	Y Cov	WAS005

Analyst Comments for 16953507:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Name: **R. Stocks**

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953508**

Sample **20** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Land Drain 1b**

Sample Description: **Land Drain 1b**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 10:24**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.2	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	03/04/2018	Y Cov	WAS049
Calcium , Total as Ca	70.2	mg/l	03/04/2018	Y Cov	WAS049
Chromium , Total as Cr	0.003	mg/l	03/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	03/04/2018	Y Cov	WAS049
Iron , Total as Fe	1.39	mg/l	03/04/2018	Y Cov	WAS049
Lead , Total as Pb	0.007	mg/l	03/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	21.2	mg/l	03/04/2018	Y Cov	WAS049
Manganese , Total as Mn	1.05	mg/l	03/04/2018	Y Cov	WAS049
Nickel, Total as Ni	0.201	mg/l	03/04/2018	Y Cov	WAS049
Potassium , Total as K	41.4	mg/l	03/04/2018	Y Cov	WAS049
Sodium , Total as Na	80.5	mg/l	03/04/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	03/04/2018	Y Cov	WAS049
pH	7.7	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1420	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	291	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	61.3	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	106	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	14.2	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	16.2	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	6.7	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	70.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	21.7	mg/l	04/04/2018	Y Cov	WAS005

Analyst Comments for 16953508:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Report Number: **COV/1523721/2018**

Issue **1**

Laboratory Number: **16953509**

Sample **21** of **21**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Land Drain 2**

Sample Description: **Land Drain 2**

Sample Matrix: **Ground Water**

Sample Date/Time: **20 March 2018 10:48**

Sample Received: **20 March 2018**

Analysis Complete: **09 April 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.7	Deg C	20/03/2018	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	04/04/2018	Y Cov	WAS049
Calcium , Total as Ca	71.0	mg/l	04/04/2018	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	04/04/2018	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	04/04/2018	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	04/04/2018	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	04/04/2018	Y Cov	WAS049
Magnesium, Total as Mg	18.6	mg/l	04/04/2018	Y Cov	WAS049
Manganese , Total as Mn	0.019	mg/l	04/04/2018	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	04/04/2018	Y Cov	WAS049
Potassium , Total as K	14.7	mg/l	04/04/2018	Y Cov	WAS049
Sodium , Total as Na	39.0	mg/l	04/04/2018	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	04/04/2018	Y Cov	WAS049
pH	7.7	pH units	21/03/2018	Y Cov	WAS039
Conductivity- Electrical 20C	707	uS/cm	21/03/2018	Y Cov	WAS039
Alkalinity as CaCO3	239	mg/l	03/04/2018	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	22/03/2018	N Cov	WAS036
Chloride as Cl	56.5	mg/l	22/03/2018	N Cov	WAS036
Nitrogen, Total Oxidised as N	11.9	mg/l	23/03/2018	N Cov	WAS036
Sulphate as SO4	28.6	mg/l	22/03/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	12.6	mg/l	22/03/2018	Y Cov	WAS052
COD (Total)	12.0	mg/l	26/03/2018	Y Cov	WAS040
TOC (Filtered)	3.3	mg/l	04/04/2018	Y Cov	WAS005

Analyst Comments for 16953509:

This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

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Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

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Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**

ANALYST COMMENTS FOR REPORT COV/1523721/2018
Issue 1

This issue replaces
all previous issues

Date of Issue: 09 April 2018

Sample No	Analysis Comments
16953489	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*Ammonia analysed by colorimetric analysis.*{/}
16953490	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*Ammonia analysed by colorimetric analysis.*{/}
16953491	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*Ammonia analysed by colorimetric analysis.*{/}
16953492	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953493	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953494	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953495	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953496	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953497	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953498	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953499	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953500	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953501	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953502	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953503	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953504	This sample has been analysed for Copper, Total as Cu, Magnesium, Total as Mg, Sodium Total as Na, TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953505	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953506	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953507	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953508	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.
16953509	This sample has been analysed for TOC (Filtered) outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed: 

Name: **R. Stocks**

Date: **09 April 2018**

Title: **Inorganic Team Leader**


DETERMINAND COMMENTS FOR REPORT COV/1523721/2018

Date of Issue: 09 April 2018

ISSUE 1

This issue replaces
all previous issues

Sample No	Description	Determinand	Comments

Signed: 	Name: R. Stocks	Date: 09 April 2018
	Title: Inorganic Team Leader	