



**REPORT ON THE PERFORMANCE OF THE ACTIVITIES
DURING 2022 AT CWMRHYDYCEIRW QUARRY
LANDFILL PURSUANT TO CONDITION 4.2.1 OF THE
ENVIRONMENTAL PERMIT FOR THE SITE NUMBER
TP3835LV**

Report reference: SIG/CW/DFR/1392/01
March 2023

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APPENDICES

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This report has been prepared by MJCA with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between MJCA and the Client. This report is confidential to the client and MJCA accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by MJCA beforehand. Any such party relies upon the report at their own risk.

1. Introduction

- 1.1 This report has been prepared pursuant to Condition 4.2.1 of Environmental Permit (EP) reference TP3835LV (the permit) for the site. Condition 4.2.1 specifies that: -

‘A report or reports on the performance of the activities over the previous year shall be submitted to the Agency [Natural Resources Wales (NRW)] by 31 January (or other date agreed in writing by the Agency) each year.’

In an email dated 9 January 2023 National Resources Wales (NRW) agreed with the operator a date of 31 March 2023 for the submission in respect of Condition 4.2.1 of the permit.

- 1.2 The site is not accepting and will not accept waste under the permit with the exception of waste needed to complete the restoration of the former landfill. The restoration of the former landfill area as a recovery activity is the subject of a Waste Recovery Plan¹ (the WRP) which was submitted to NRW pursuant to Pre-Operational Measure J1 of the permit. The WRP was approved by NRW on 18 May 2020².
- 1.3 In January 2018 planning permission was granted to develop housing at and in proximity to Cwmrhydyceirw Quarry. To progress the built development the former landfill area has been capped and partially restored. Restoration works are ongoing as part of the wider development of the residential area. It is anticipated that the restoration works will be substantially completed in the Summer of 2023. An application to definitely close the landfill will be submitted to NRW on completion of the restoration works. Partial surrender application number EPR/TP3835LV/S005 was issued by NRW on 23 June 2020. The partial surrender removed from the area of the permit the majority of the areas of the site outside the area where waste was deposited previously and varied Table S1.5 of the permit to specify zero tonnes per year in respect of the disposal of inert and non-hazardous waste at the site.

¹ MJCA, March 2020. Waste Recovery Plan for the deposition of waste on land as a recovery activity for the restoration of Cwmrhydyceirw Quarry, Vicarage Road, Morriston, Swansea to public open space. Report reference SIG/CW/DFR/1392/01.

² Email from Neil Herbert of NRW at 12.31pm on 18 May 2020.

- 1.4** An Updated Management Report³ (the UMR) was provided to NRW on 7 January 2021. The UMR presents details of the leachate, landfill gas, groundwater and surface water management and monitoring infrastructure at the site and details of the monitoring programmes implemented at the site. As the permit was issued in 2008 to reflect the operation of the site as a non-hazardous waste landfill there are many conditions of the permit including those that relate to environmental monitoring which still reflect the proposals in 2008 to operate the site as a non-hazardous landfill. It was agreed with NRW to submit the UMR which reflects the current site circumstances. It is intended that until such time as the application to definitely close the landfill is resubmitted and then determined by NRW the UMR will provide information against which the site can be regulated. The information provided in this submission pursuant to Condition 4.2.1 makes reference, where relevant, to the details presented in the UMR. It is understood that NRW have instigated an application to vary the permit to incorporate the UMR as an operating technique specified in the permit.
- 1.5** Following a review of the UMR, NRW provided comments on the report in an email dated 4 March 2021⁴. NRW agree in their response to the report that the UMR provides a *“framework to develop an interim system to manage the site’s monitoring”*. The agreed changes to Table HRA 3, Table HRA 6 and the external landfill gas monitoring boreholes emission limit table⁵ are presented at Appendix A to this report. Further comments from NRW in respect of groundwater quality compliance limits were provided on 16 December 2021⁶ and were addressed in the report on the performance of the activities during 2021 (the 2021 report). The approach taken in the 2021 report in respect of groundwater quality compliance limits is repeated in this report of the 2022 results.
- 1.6** As explained in this report there have been changes to the external monitoring boreholes and in waste leachate monitoring and gas venting wells at the site. The changes with respect to the monitoring boreholes and wells at the site will not be

³ MJCA, January 2021. Cwmrhydyceirw Quarry Landfill the subject of Environmental Permit reference EPR/TP3835LV. Updated Management Report. Report reference SIG/CW/DFR/1392/01/UMR.

⁴ Email from Neil Herbert of NRW at 17:47pm on 4 March 2021.

⁵ Email from MJCA to Neil Herbert of NRW at 11:40am on 27 July 2021

⁶ Email from Neil Herbert of NRW at 16:35pm on 16 December 2021.

reflected in the UMR. The monitoring tables and plan included in the UMR will be updated shortly and submitted to NRW.

2. Emissions limits

- 2.1** Variation V003 of the permit which was issued by NRW on 30 April 2015 authorises the direct discharge of groundwater and surface water pumped from the sump in the east of the quarry to the Cwmrhydyceirw Stream. The application for variation V003 included an H1 risk assessment for the discharge to the Cwmrhydyceirw Stream and proposed emission limits relevant to the discharge which are included in Table S4.3 of variation V003 of the permit.
- 2.2** The results of the monthly analyses undertaken by Decus Research Limited for samples collected from monitoring point CWMS02 in the sump in the east of the quarry are provided at Appendix B to this report. The data show that, with the exception of an ammoniacal nitrogen concentration of 1.3mg/l recorded for a sample collected on 27 July 2022 and suspended solids concentrations of 55.3mg/l recorded for a sample collected on 27 October 2022 and 56.8mg/l recorded for a sample collected on 28 November 2022, the emission limits specified in Table S4.3 were not exceeded during 2022.
- 2.3** The ammoniacal nitrogen concentration of 1.3mg/l exceeds the emission limit of 1.2mg/l. The measurement uncertainty is not specified in the laboratory report. Following detection of the exceedance SI Green UK Limited implemented the action plan dated 29 June 2015 agreed with NRW pursuant to Improvement Programme Requirement 6 of the permit. Consistent with the action plan, as there is no short term EQS for ammoniacal nitrogen, the 3 point rolling average concentration for ammoniacal nitrogen was calculated from July 2022 using the results from the preceding two months and up to September 2022. The 3 point rolling average concentration has a maximum of 0.81mg/l calculated for July, August and September 2022 which did not exceed the emission limit of 1.2mg/l hence it was not necessary to divert the discharge to sewer and the discharge to Cwmrhydyceirw Stream continued. The ammoniacal nitrogen results for the monthly samples collected from monitoring point CWMS02 in the sump during the other monitoring occasions in 2022 were all below the emission limit.
- 2.4** The suspended solids concentrations of 55.3mg/l and 56.8mg/l both exceed the emission limit of 40mg/l. The measurement uncertainty is not specified in the

laboratory report. Following detection of the exceedances SI Green UK Limited implemented the action plan dated 29 June 2015 agreed with NRW pursuant to Improvement Programme Requirement 6 of the permit. Consistent with the action plan, as there is no short term EQS for suspended solids, the 3 point rolling average concentration for suspended solids was calculated from October 2022 using the results for the preceding two months and up to December. The 3 point rolling average concentration has a of 40.3mg/l calculated for October, November and December 2022. As the 3 point rolling average concentration for suspended solids calculated in December of 40.3mg/l only marginally exceeded the emission limit of 40mg/l the discharge to Cwmrhydyceirw Stream was not diverted to sewer. The suspended solids results for the monthly samples collected from monitoring point CWMS02 in the sump during the other monitoring occasions in 2022 were all below the emission limit.

- 2.5** The volume of groundwater and/or surface water discharged to the Cwmrhydyceirw Stream during the period January 2022 to December 2022 inclusive was 129,108m³. 129,108m³ is equivalent to an average discharge rate of 0.0041m³/sec which is consistent with the effluent flow rate used in the H1 risk assessment for the discharge to the Cwmrhydyceirw Stream.

3. Leachate, groundwater and surface water quality monitoring

- 3.1** From a review of the data, in general the concentrations of determinands recorded in the leachate, groundwater and surface water during 2022 are consistent with the data for 2015 to 2021.
- 3.2** In general, ammoniacal nitrogen concentrations in the leachate fluctuated between the same order of magnitude and an order of magnitude greater than those recorded in the groundwater and surface water at the site in 2022. Ammoniacal nitrogen concentrations in the leachate in February and June 2022 were recorded at one to two orders of magnitude greater than those recorded in the groundwater and surface water at the site. In general, chloride concentrations in the leachate remain one to two orders of magnitude greater than those recorded in the groundwater at the site and up to two orders of magnitude greater than those recorded in the surface water at the site.
- 3.3** Concentrations of ammoniacal nitrogen recorded in the groundwater to the west of the site remained similar to the concentrations recorded in the groundwater elsewhere across the site in 2022 consistent with 2019 to 2021. Groundwater quality to the west of the site is monitored at borehole CWMGW10. In general, ammoniacal nitrogen concentrations in the groundwater to the north of the site remained similar to or below the limit of detection (LOD) of the analytical method used in 2022 consistent with 2020 and 2021. Groundwater to the north of the site is monitored at boreholes CWMGW11 and CWMGW12. The ammoniacal nitrogen concentration of 0.87mg/l recorded in the groundwater at borehole CWMGW04 in September 2022 was the highest concentration recorded at the borehole since February 2018. The ammoniacal nitrogen concentration in the groundwater at borehole CWMGW04 had fallen back below the LOD of 0.01mg/l by in November 2022. Borehole CWMGW04 is located to the south of the landfill. CWMGW03 and CWMGW08 were decommissioned between September and November 2022 and replaced with CWMGW03R and CWMGW08R. Borehole CWMGW08R is located to the east-south east of the groundwater and surface water sump.

- 3.4** In general ammoniacal nitrogen and chloride concentrations recorded in the water in the groundwater and surface water sump are higher than those recorded in the groundwater at the monitoring boreholes at the site.
- 3.5** In general the nickel concentrations recorded in the groundwater at the site in 2022 were similar to or lower than the concentrations recorded in the leachate. The nickel concentrations in the groundwater at borehole CWMGW10 continued to fall over 2022 with concentrations similar to the concentrations recorded in the groundwater elsewhere across the site. The nickel concentrations recorded in the groundwater at borehole LFG9 to the south of the site had remained similar to the concentrations recorded in the groundwater elsewhere across the site with the exception of a concentration of 37.2 µg/l recorded in the groundwater at the borehole in September 2022.
- 3.6** In general the cadmium concentrations recorded in the groundwater at boreholes round the site in 2022 were below the LOD. Occasionally cadmium concentrations were recorded above the LOD in 2022 with a maximum concentration of 0.00018mg/l recorded in the groundwater at borehole CWMGW10 in the west of the site in February 2022. Consistent with nickel, the cadmium concentrations recorded in the groundwater at borehole LFG9 had remained similar to the concentrations recorded in the groundwater elsewhere across the site.
- 3.7** In general the concentrations of metals are higher in the groundwater compared with the water in the combined groundwater and surface water sump.
- 3.8** With the exception of chloride concentrations of 4,180mg/l and 3,830mg/l in June and September 2022 respectively, recorded at leachate well L9B/09 the concentrations of parameters in the leachate do not exceed the control level concentrations set in Table HRA 4 of the 2014 Hydrogeological Risk Assessment (HRA). As the concentration of chloride at leachate well L9B/09 exceeded the control level on two consecutive occasions only the assessment test in Table HRA 4 has been passed and no further action is needed. The chloride concentrations recorded at leachate well L9B/09 had fallen below the control level of 3,130mg/l in November 2022 when a concentration of 3,020mg/l was recorded.

- 3.9** As stated in our e-mail of 17 February 2016 comprising the response to CAR ID 6048 in respect of the 2014 HRA for the site and in our e-mail dated 13 June 2016 comprising the response to CAR ID 6126 in respect of the 2014 HRA for the site, the groundwater and surface water sump comprises the monitoring point down hydraulic gradient of the existing landfill area and as such should be the location of the water quality compliance monitoring point. Water from the sump currently is discharged to the Cwmrhydyceirw Stream and the discharge is the subject of variation V003 of the permit. The discharge to the stream is the subject of emission limits specified in Table S4.3 variation V003 of the permit. On this basis no compliance limits or control levels in respect of the 2014 HRA have been set at the groundwater and surface water sump because the quality of the water in the sump is controlled by the emission limits specified for the discharge to the Cwmrhydyceirw Stream. A comparison of the quality of the discharge to the Cwmrhydyceirw Stream with the emission limits specified in Table S4.3 variation V003 of the permit is presented in Section 2 of this report.
- 3.10** As set out in our submissions dated 17 February 2016 and 13 June 2016, the monitoring regime has continued whereby the quality of the water in the groundwater and surface water sump and the quality of the groundwater at monitoring boreholes located round the site are monitored together with the groundwater level. The data has been reviewed for the purpose of preparing this annual report required by Condition 4.2.1 of the permit.
- 3.11** It is considered that generally there is no evidence of deteriorating groundwater quality over time in the groundwater at the monitoring boreholes round the site as a result of the migration of leachate from the landfill. While across the monitoring record there is a falling trend in concentrations of ammoniacal nitrogen recorded in the water in the groundwater and surface water sump, the concentrations have remained relatively stable over 2015 to 2022 inclusive. The falling trend in concentrations of chloride recorded previously in the water in the groundwater and surface water sump continued during 2022.
- 3.12** NRW confirmed on 16 December 2021⁶ above that any changes to groundwater compliance limits beyond those set out in Table HRA 5 (Revised V2)⁴ above have not been agreed with NRW. This was the first time that NRW had responded to the

position set out in paragraphs 3.9 and 3.10 of this report despite the fact that this position has been reiterated in the annual monitoring review reports submitted to NRW for the data collected in 2016, 2017, 2018, 2019 and 2020. NRW have not responded any further since. It is proposed that the position set out in paragraphs 3.9 and 3.10 of this report comprises the “...*interim monitoring approach for all parties, until such time that the permit (including the limits) is reviewed properly*”⁶ above.

- 3.13** Irrespective of the position above, there are no exceedances of the groundwater compliance limits presented in Table HRA 5 (Revised V2)⁴ above during 2022 other than an isolated exceedance of ammoniacal nitrogen at borehole CWMGW04 in September 2022. Ammoniacal nitrogen concentrations recorded at this borehole on all other dates over 2022 have remained below the compliance limits presented in Table HRA 5 (Revised V2).

Annual suite of hazardous substances

- 3.14** In November 2022 leachate and groundwater samples were analysed for an annual suite of hazardous substances consistent with Table 2a and Table 4a in the UMR and consistent with conditions of the permit together with an extended suite of non-hazardous pollutants. From a review of the leachate data, with the exception of arsenic, antimony and selenium the concentrations of determinants recorded in the leachate were below the relevant LODs. Concentrations of arsenic, antimony and selenium of up to 0.012mg/l, 0.0097mg/l and 0.0032mg/l respectively were recorded in the leachate.
- 3.15** From a review of the groundwater data, with the exception of arsenic, antimony, selenium, fluoranthene, pyrene and 4-chloro,3-methylphenol the concentrations of determinands in the annual suite of analysis recorded in the groundwater were below the relevant LODs. The arsenic, antimony and selenium recorded in the groundwater were lower than albeit similar to those recorded in the leachate at concentrations up to 0.0028mg/l at monitoring borehole LFG2R in the south east of the site, 0.0013mg/l at monitoring borehole CWMGW03R also in the south east of the site and 0.0034mg/l at monitoring borehole LFG2R respectively.

- 3.16** Fluoride concentrations recorded in the groundwater were above the detection limit at all groundwater monitoring locations. The highest fluoride concentration of 2.3mg/l was recorded at monitoring borehole CWMGW03R. Fluoride had not been analysed for in the leachate. Fluoranthene and pyrene were recorded in the groundwater at concentrations of 0.0068mg/l and 0.0079mg/l at monitoring borehole CWMGW03R, respectively. 4-chloro,3-methylphenol concentrations were recorded in the groundwater above the detection limit at monitoring boreholes CWMGW03R, CWMGW08R in the west of the site and LFG6 in the south of the site. The highest 4-chloro,3-methylphenol concentration of 0.003mg/l was recorded at monitoring borehole CWMGW03R.

Monitoring network

- 3.17** Three groundwater monitoring boreholes (CWMGW03, CWMGW08 and LFG2 (combined gas and groundwater monitoring borehole)) were replaced at the site in 2022. The replacement boreholes were installed primarily to avoid conflict between the built development and existing borehole locations. Groundwater monitoring boreholes CWMGW03R, CWMGW08R and LFG2R (combined gas and groundwater monitoring borehole) were installed at the site between October and November 2022. Boreholes CWMGW03, CWMGW08 and LFG2 were decommissioned between September and October 2022. A record of the boreholes which were installed or decommissioned in 2022 is presented in Table 1.
- 3.18** In addition to the groundwater and combined gas and groundwater monitoring boreholes replaced in 2022, eight perimeter landfill gas monitoring boreholes were replaced and eleven new perimeter landfill gas monitoring boreholes were installed at the site in 2022. The perimeter landfill gas monitoring boreholes that were replaced were decommissioned in 2022 with the exception of boreholes LFG23 and LFG44. A blockage was recorded in borehole LFG23 at 0.80m below ground level (bgl). Furthermore, borehole LFG23 was located less than 2m from the edge of a steep cliff on the north side of the quarry and it was not considered safe nor practicable to over drill the borehole. The headworks were removed from the borehole, the standpipe was cut at a depth of 0.80mbgl and the hole was backfilled with 0.60m of 95:5 OPC/bentonite grout and 0.20m of soil. Borehole LFG44 could not be located for

decommissioning. A record of the boreholes which were installed or decommissioned in 2022 is presented in Table 1.

- 3.19** The Construction Quality Assurance (CQA) verification reports for the installation and decommissioning of the gas and groundwater monitoring boreholes in 2022 were submitted to NRW for review in February 2023^{7&8}. A record of the condition of the in-waste leachate monitoring and gas venting wells is presented in Table 1 together with the perimeter groundwater and external gas monitoring boreholes. The table includes a record of when wells or boreholes were installed or decommissioned in 2022.

Surface water quality

- 3.20** Surface water monitoring point CWMS02 has emission limits set for the following determinants: suspended solids, ammoniacal nitrogen, chloride, cadmium, nickel, naphthalene and pentachlorophenol. In 2022, with the exception of an ammoniacal nitrogen concentration recorded for a sample collected on 27 July 2022 (1.3mg/l) and suspended solid concentrations recorded for samples collected on 27 October 2022 (55.3mg/l) and 28 November 2022 (56.8mg/l), all concentrations recorded of these determinants were below the relevant emission limits.
- 3.21** With the exception of ammoniacal nitrogen, the concentrations of determinands with emission limits were similar in the surface water at CWMS02 sampled from the groundwater and surface water sump comprising the discharge from the site to Cwmrhydyceirw Stream, compared with the quality of surface water in the Cwmrhydyceirw Stream upstream of the site at CWMS01, at CWMLS03A and CWMS03B located upstream and downstream respectively of the discharge location and at CWMS05 in the drainage ditch to the south of the site before it enters the Cwmrhydyceirw Stream. Ammoniacal nitrogen concentrations recorded throughout 2022 were generally one order of magnitude higher in the groundwater and surface water sump at CWMS02 compared with the Cwmrhydyceirw Stream at CWMS01,

⁷ MJCA, February 2023. Construction Quality Assurance (CQA) Verification Report for the installation of gas and groundwater monitoring boreholes at Cwmrhydyceirw Quarry Landfill, Morriston, Swansea. Environmental Permit Number EPR/TP3835LV. Report reference SIG/CW/KE/20012/01/BHCQAVF.

⁸ MJCA, February 2023. Construction Quality Assurance (CQA) Verification Report for the decommissioning of gas and groundwater monitoring boreholes at Cwmrhydyceirw Quarry Landfill, Morriston, Swansea. Environmental Permit Number TP3835LV. Report reference SIG/CW/KE/20012/01/VER

CWMS03A and CWMS03B and CWMS05 in the drainage ditch to the south of the site.

- 3.22** In November 2022 a surface water sample from the groundwater and surface water sump at CWMS02 and samples from monitoring locations CWMS01 to CWMS05 were analysed for an annual suite of hazardous substances consistent with Table 5a in the UMR together with an extended suite of non-hazardous pollutants. From a review of the surface water data, with the exception of arsenic, antimony, selenium and 4-chloro,3-methylphenol, concentrations of determinands in the annual suite of analysis recorded in the surface water were below the relevant LODs. The arsenic, antimony, selenium and 4-chloro,3-methylphenol recorded in the surface water were similar to, albeit lower than, those recorded in the leachate and groundwater at concentrations of up to 0.0011mg/l at CWMS05, 0.00097mg/l at CWMS02, 0.0016mg/l at CWMS02 and 0.0028mg/l at CWMS01 of arsenic, antimony, selenium and 4-chloro,3-methylphenol respectively. The concentrations recorded in the water from the surface water and groundwater sump were similar to or lower than the concentrations recorded upstream of the site.

4. Groundwater and leachate level monitoring

- 4.1** The groundwater levels recorded in the monitoring boreholes are all above the groundwater level compliance level set in Table HRA 6 from the 2014 HRA (Revised July 2021) (Appendix A) below which the conceptual site model on which the HRA is based may have changed. The groundwater levels recorded in the monitoring boreholes are all above the groundwater level control level set in Table HRA 6 from the 2014 HRA (Revised July 2021) with the exception of at combined gas and groundwater monitoring borehole LFG9. Groundwater levels were recorded below the control level of 32.5mAOD at borehole LFG9 in April and May 2022 and above the control level on all other occasions in 2022 up to November 2022. The borehole was recorded as dry in December 2022, however, groundwater levels of 37.3mAOD and 38.29mAOD were recorded in adjacent boreholes LFG8 and LFG10 respectively in December 2022. The low groundwater levels recorded at borehole LFG9 in 2022 are outside of the normal range for the borehole. The condition of borehole LFG9 will be investigated in 2023.
- 4.2** The leachate level control level and compliance level are specified in Table HRA 3 from the 2014 HRA (revised July 2021) (Appendix A). Note 1 to Table HRA 3 specifies '*The compliance and assessment limits are based on the six month moving average of all leachate heads recorded at the site between June 2010 and May 2014*' and the assessment test in Table HRA 3 is "*Six month moving average of all leachate heads exceeds the control level on three consecutive occasions*".
- 4.3** Following the survey of the condition and suitability of landfill gas venting and leachate monitoring wells in February 2021, replacement and additional in waste landfill gas venting and leachate monitoring wells were installed in November 2021 and surveyed in January 2022 consistent with the 2021 Leachate Action Plan⁹. The locations of the previously existing and new monitoring wells were compared with the base of waste model prepared as part of the site investigation undertaken in November and December 2009 referenced in the UMR. The monitoring record for the pre-existing monitoring wells was reassessed based on the comparison of the

⁹ MJCA, February 2021. Leachate Action Plan for Cwmrhydyceirw Quarry Landfill Site the subject of Environmental Permit number EPR/TP3835LV. Provided to NRW as Schedule 3 to the email dated 12 February 2021 pursuant to Compliance Assessment Reports CAR_NRW0037308 and CAR_NRW0037428.

leachate levels recorded in metres above Ordnance datum (mAOD). The updated control levels and compliance limits are included on the graph at Appendix C. An updated version of Table HRA 3 with the updated leachate level and compliance limits is presented at Table 3 to this report.

- 4.4** The leachate levels recorded in mAOD since May 2014 are presented on graphs at Appendix C. As reported in the 2021 annual report, the leachate levels recorded at well L21/09 are considered to be spurious between January 2020 and the date the borehole was replaced in November 2021 (L21/09R). Versions of the leachate level and leachate level moving average graphs are presented at Appendix C including and excluding this data for well L21/09. Other spurious leachate levels are recorded over limited time periods over 2020 at wells L1C/09, L06/09, L11/09 and L23/09, however, these have not been excluded from the graphs presented at Appendix C.
- 4.5** As can be seen from the graphs at Appendix C, the six month moving average control level for leachate was below the compliance limit and control limit in 2022. As reported in the 2021 annual report, the leachate levels at the site in 2021 returned to those recorded previously and assumed in the 2014 HRA. The groundwater levels are consistent with those recorded previously at the site and confirm the conceptual model in the 2014 HRA which is based on the assumption that groundwater in proximity to the existing landfill area flows to the combined groundwater and surface water sump.
- 4.6** A CQA Plan was submitted to NRW for approval in December 2022¹⁰ for the replacement of in waste landfill gas venting and leachate monitoring wells including those with spurious results in 2020. NRW have approved¹¹ the CQA Plan and the wells will be installed at the site in 2023. It will be necessary to re-survey the leachate wells at the site once the landfill restoration levels have been achieved and the rotating cowl headworks are installed on the wells.

¹⁰ MJCA, February 2022. Construction Quality Assurance (CQA) Plan for the installation of replacement in waste landfill gas venting wells at Cwmrhydyceirw Quarry Landfill, Morriston, Swansea. Environmental Permit number EPR/TP3835LV. Report reference SIG/CW/KE/20012/01/BHCQA/L.

¹¹ Email from Neil Herbert of NRW to MJCA at 15:56 on 14 December 2022.

5. Landfill gas monitoring

- 5.1** The monitoring scheme external to the waste incorporates a series of gas and combined gas and groundwater monitoring boreholes drilled at the site during February and March 2010 and February 2011. A series of new gas monitoring boreholes (LFG2R, LFG18R, LFG23R, LFG24R-A, LFG24R-B, LFG25R-A, LFG25R-B, LFG26R-A, LFG26R-B, LFG27R-A, LFG27R-B, LFG35R, LFG43R, LFG44R, LFG46R, LFG47R, LFG48R, LFG49, LFG50 and LFG51) were installed at the site between September and November 2022. The new boreholes were installed primarily to avoid conflict between the locations of the built development and to replace boreholes that were decommissioned as the built development progressed. Boreholes LFG24R-A, LFG24R-B, LFG25R-A, LFG25R-B, LFG26R-A, LFG26R-B, LFG27R-A and LFG27R-B were drilled to monitor the shallower ground as the existing boreholes at these locations which were drilled to levels consistent with the base of the landfill were flooding hence were not providing effective gas monitoring facilities. As described in Section 3 above and in Table 1 boreholes LFG2, LFG18, LFG35, LFG43, LFG46, LFG47 and LFG48 were decommissioned between September and November 2022. A blockage was recorded in borehole LFG23 at 0.80mbgl. Furthermore, borehole LFG23 was located less than 2m from the edge of a steep cliff on the north side of the quarry and it was not considered safe nor practicable to over drill the borehole. The headworks were removed from the borehole, the standpipe was cut at a depth of 0.80mbgl and the hole was backfilled with 0.60m of 95:5 OPC/bentonite grout and 0.20m of soil. LFG44 could not be located for decommissioning. The Construction Quality Assurance (CQA) verification reports for the installation and decommissioning of the gas and groundwater monitoring boreholes in 2022 were submitted to NRW for review in February 2023 ^{7 above & 8 above}. The locations of the retained and the new boreholes are shown on Figure 1 (drawing reference SIG/CW/03-23/23645).
- 5.2** Landfill gas monitoring undertaken currently at the site is based on the monitoring scheme presented in Table 3a of the UMR and includes monitoring of boreholes external to the waste generally on a monthly basis. The changes above with respect to the monitoring boreholes at the site will not be reflected in Table 3a of the UMR. The monitoring tables included in the UMR will be updated shortly and submitted to NRW. The methane concentrations recorded in the boreholes external to the waste

during 2022 generally were at or below the limit of detection of 0.1% volume/volume (v/v) of the GA5000 gas monitoring instrument.

- 5.3** With the exception of boreholes LFG27R-A LFG50 and LFG51, no methane concentrations above 1.0% by volume were recorded in any of the boreholes external to the waste during 2022.
- 5.4** As shown on Figure 1, boreholes LFG50 and LFG51 are located to the south of the landfill site. Following the installation of the boreholes in October 2022 a methane concentration of 5.4% v/v was recorded in borehole LFG50 on 27 October 2022. On 28 November 2023 a methane concentration of 24.6% v/v was recorded in borehole LFG50 and on 25 November 2023 a methane concentration of 2.4% v/v was recorded in borehole LFG51. Similarly elevated methane concentrations were recorded in boreholes LFG50 and LFG51 throughout December 2022 up to 20.9% v/v and 2.6% v/v respectively after the monitoring frequency had been increased. Elevated carbon dioxide and low oxygen concentrations were recorded in boreholes LFG50 and LFG51 in October, November and December 2022. The elevated methane concentrations recorded in boreholes LFG50 and LFG51 were reported to Natural Resources Wales (NRW) on 5 and 12 December 2022, gas samples were taken and monitoring at the increased frequency continued. The monitoring at the increased frequency continued into 2023 and has been the subject of separate correspondence with NRW.
- 5.5** A methane concentration of 1.8% v/v was recorded in borehole LFG27R-A¹² on 15 December 2022. As shown on Figure 1 borehole LFG27R-A is located approximately 45m to the north east of the landfill site in the land which is at a significantly higher elevation than the landfill site and between the landfill site and the new housing development. Repeat monitoring was carried out in borehole LFG27R-A on 16 December 2023 and a methane concentration of 2.9% v/v was recorded. Similarly elevated methane concentrations were not recorded in boreholes close to borehole LFG27R-A. Slightly elevated carbon dioxide concentrations and low oxygen concentrations were also recorded in borehole LFG27R-A. Methane concentrations

¹² Note that borehole LFG27R-A was mistakenly identified as borehole LFG27R-B in late 2022. This has been corrected and the monitoring database has been updated so that the data reflect the correct location.

in the range 0.4% v/v to 2.4% v/v were recorded subsequently in December 2022 in borehole LFG27R-A. The elevated methane concentrations recorded in borehole LFG27R-A were reported to NRW on 19 and 21 December 2022, gas samples were taken in early 2023 and monitoring at an increased frequency continued. The results of further assessment will be reported to NRW shortly.

- 5.6** The locations of the combined leachate monitoring and gas venting wells located in the former landfill, including new and replacement wells that will be installed in early 2023 are shown on Figure 1. A CQA plan for the installation of the combined leachate monitoring and gas venting wells **Error! Bookmark not defined.** was agreed with NRW. The combined leachate and gas venting wells will be converted to facilitate wind assisted passive gas venting in the 2023 following the completion of the placement of restoration soils at the site. Wind assisted passive gas venting will be provided by fitting new headworks with rotating cowls.
- 5.7** The concentrations of methane recorded internal to the waste between January 2022 and December 2022 generally were similar to the concentrations recorded during 2021. With the exception of wells L1C/09, L11/09, L16/09, L5/20 and L6/20 generally low methane concentrations were recorded in the wells located in the waste. The highest methane concentrations were recorded generally in well L11/09 in the central western part of the former landfill area. Methane concentrations in excess of 70% have been recorded in well L11/09. The high methane concentrations are uncharacteristic of normal landfill gas for which the methane concentration generally does not exceed 65% by volume. Possible mechanisms occurring in the waste which may explain the data are that components of the gas mixture generated in the waste matrix are being removed by passing into solution in the leachate or by absorption onto solid components in the waste thereby increasing the proportion of the remaining components of the landfill gas. Also, the presence of other gaseous hydrocarbons in waste can give a reading on the gas monitoring instrument for methane higher than the true concentration of methane in the gas being measured. It is understood that SI Green and the appointed monitoring contractor use a Geotechnical Instruments GA5000 instrument for gas monitoring at the site. Carbon dioxide is measured by the GA5000 by infrared absorption at a wavelength specific to carbon dioxide so the carbon dioxide reading is not affected by any other gases present in typical landfill gas. The oxygen sensor is a galvanic cell type which Geotechnical Instruments state

“...suffers virtually no influence from CO₂, CO, H₂S, NO₂, SO₂ or H₂...”. Methane is measured by dual beam infrared absorption which is affected by other hydrocarbon gases such as ethane, propane and butane if present in the gas being measured. The effect is dependent on the relative concentrations of methane and other hydrocarbons and is non-linear. The effect of other hydrocarbons is to give a reading on the instrument for methane higher than the true concentration of methane in the gas being measured. Samples of gas collected from well L11/09 in 2014 and in 2019 for analysis in a laboratory confirm that higher hydrocarbons including ethane, propane, iso-butane, n-butane, iso-pentane and n-hexane were recorded in gas samples from this well.

6. Other reporting requirements**6.1** Condition 4.2.1(b) of the permit states:

where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;

6.2 There are no improvement targets against which to summarise progress. Consistent with the approved CQA Plans, replacement and new external monitoring boreholes were installed at the site in 2022, external monitoring boreholes were decommissioned in 2022 and replacement in waste landfill gas venting and leachate monitoring wells will be installed at the site in 2023.

6.3 Condition 4.2.1(c) of the permit states:

The report shall include... the energy consumed at the site, reported in the format set out in schedule 5 table S5.3

6.4 The landfill currently is not operating hence the energy consumed at the site is minimal. The only mains powered activity at the site is the pump associated with the combined groundwater and surface water sump. The energy usage at the site for the calendar year 2022 was 80,363kWh (80.363MWh) which is a small decrease in the energy usage at the site compared with the calendar year 2021 which was 101,890kWh (101.89MWh). A small quantity of leachate was pumped from the leachate chamber in November 2022. The leachate was removed by suction tanker and discharged to the on-site sewer hence the energy usage was minimal.

6.5 Condition 4.2.1(d) of the permit states:

The report shall include...the annual production/treatment set out in schedule 5 table S5.2;

6.6 There was no leachate discharged to sewer in the period January 2022 to September 2022. The volume of leachate discharged to sewer during the period October 2022 to December 2022 inclusive was 4,750 litres (4.75 m³). There are no emission limits specified in Table S4.4 of the permit in respect of the discharge of leachate to sewer.

The volume of groundwater and/or surface water discharged to the Cwmrhydyceirw Stream during the period January 2022 to December 2022 inclusive was 129,108m³ which is lower than the volume of 147,132m³ discharged in 2021. No discharge rate is specified in Table S4.3 of variation V003 of the permit in respect of the discharge of groundwater and surface water to Cwmrhydyceirw Stream. The comparison of discharge water quality with the emission limits specified in Table S4.3 of variation V003 of the permit in respect of the discharge of groundwater and surface water to Cwmrhydyceirw Stream are presented in Section 2 of this report.

6.7 Condition 4.2.1(e) of the permit states:

The report shall include... details of any contamination or decontamination of the site which has occurred;

6.8 It is understood that there has been no contamination or decontamination of the site undertaken during the reporting period.

6.9 Condition 4.2.1(f), (g), (h) and (i) of the permit states:

The report shall include...

- (f) the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;*
- (g) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;*
- (h) an assessment of the settlement behaviour of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;*

- (i) *a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey.*

- 6.10** Points f, g, h and i are addressed together. The site is not accepting and will not accept waste under the permit with the exception of waste needed to complete the restoration of the former landfill. Restoration soils were imported to the site in 2022 for deposit as a recovery operation to restore the former landfill site consistent with the WRP approved by NRW. Planning permission was granted In January 2018 to develop housing at and in proximity to the quarry. To progress the built development the former landfill area remains insitu and was capped by SI Green UK Limited in late 2018 and early 2019 in accordance with construction proposals which were agreed by NRW pursuant to conditions of the permit.
- 6.11** Topographical surveys of different areas of the site have been carried out previously and reported to NRW. As the landfill currently is not operating no additional topographic surveys have been undertaken with respect to Condition 3.6.3 in 2022. As the landfill site is not operating no waste has been landfilled at the site during 2022 hence no additional volume of the landfill is occupied by waste. As no waste has been landfilled at the site since the permit was issued in 2008 no assessment of the settlement behaviour of the waste at the site has been carried out. As the site will not be developed as a landfill site and has been capped it is considered that there is no remaining void at the site for waste disposal. The waste input rate for disposal specified in Table S1.5 in the permit is zero. Consistent with the WRP approved by NRW it is proposed that further waste soils will be imported to the site for deposit as a recovery operation in order to complete the restoration of the former landfill site. It is proposed that a topographical survey is carried out when the importation of restoration materials is complete.

Table 1
Status of in waste monitoring/venting wells and external monitoring boreholes

Borehole/ well	Condition¹
In waste leachate and gas monitoring wells	
CWMLS01	
CWMLS02	
L1C/09	To be replaced with L1C/09R in 2023
L3/09R	
L6/09	To be replaced with L6/09R in 2023
L9B/09	
L11/09	To be replaced with L11/09R in 2023
L13/09	To be replaced with L13/09R in 2023
L14/09R	
L16/09	To be replaced with L16/09R in 2023
L19/09	To be replaced with L19/09R in 2023
L21/09R	
L23/09	To be replaced with L23/09R in 2023
L26/09	To be replaced with L26/09R in 2023
L1/20	
L2/20	To be replaced with L2/20R in 2023
L3/20	
L4/20	
L5/20	
L6/20	
L7/20	
L8/20	
L9/20	To be replaced with L9/20R in 2023
L27/23	To be installed in 2023
L28/23	To be installed in 2023
L29/23	To be installed in 2023
L30/23	To be installed in 2023
L31/23	To be installed in 2023
Groundwater and external gas monitoring boreholes	
CWMGW03	Decommissioned in October 2022. Replaced with CWMGW03R in November 2022.
CWMGW04	
CWMGW08	Decommissioned and replaced with CWMGW08R in October 2022.
CWMGW09	
CWMGW10	
CWMGW11	
CWMGW12	
LFG2	Decommissioned in September 2022. Replaced with LFG2R in October 2022.
LFG3	
LFG4	
LFG5	

Borehole/ well	Condition ¹
LFG6	
LFG7BG	
LFG8	
LFG9	To be investigated in 2023 following spurious groundwater levels in 2022.
LFG10	
LFG11	
LFG11A	
LFG12BG	
LFG13	
LFG17	
LFG18	Decommissioned and replaced with LFG18R in October 2022.
LFG19	
LFG20	
LFG21BG	
LFG22	
LFG23	Replaced with LFG23R in November 2022. LFG23 was not decommissioned as it was blocked and too close to the steep quarry face.
LFG24	
LFG24R-A	Installed in November 2022
LFG24R-B	Installed in November 2022
LFG25	
LFG25R-A	Installed in November 2022
LFG25R-B	Installed in November 2022
LFG26	
LFG26R-A	Installed in November 2022
LFG26R-B	Installed in November 2022
LFG27	
LFG27R-A	Installed in October 2022
LFG27R-B	Installed in October 2022
LFG35	Decommissioned and replaced with LFG35R in October 2022.
LFG39	
LFG40	
LFG41	
LFG42	
LFG43	Decommissioned and replaced with LFG43R in October 2022.
LFG44	Replaced with LFG44R in October 2022. Could not be located for decommissioning.
LFG45	
LFG46	Decommissioned and replaced with LFG46R in October 2022.

Borehole/ well	Condition ¹
LFG47	Decommissioned and replaced with LFG47R in October 2022.
LFG48	Decommissioned and replaced with LFG48R in October 2022.
LFG49	Installed in October 2022.
LFG50	Installed in October 2022.
LFG51	Installed in October 2022.

¹ Notes from monitoring records. If cell is blank monitoring location is fully operational.

Table 2
Locations and elevations of in-waste monitoring/venting wells

Borehole reference	Easting	Northing	Ground level (mAOD)¹	Estimated base of waste (mAOD)²
L1/20	266497.02	199365.17	43.59	31.84
L2/20	266517.30	199363.11	41.51	32.26
L3/20	266431.27	199341.52	47.74	38.05
L4/20	266511.96	199337.27	43.15	31.94
L5/20	266440.58	199322.27	47.96	31.76
L6/20	266495.50	199329.82	44.73	31.86
L7/20	266424.39	199298.36	47.68	41.57
L8/20	266495.75	199304.16	44.98	33.85
L9/20	266485.29	199259.20	45.66	35.20
L1C/09	266476.05	199290.16	47.30	33.93
L3/09R	266459.31	199276.69	46.51	35.08
L6/09	266442.85	199290.43	46.83	31.27
L9B/09	266474.81	199308.55	47.32	33.92
L11/09	266450.37	199308.71	47.12	31.96
L13/09	266409.39	199309.89	46.85	41.30
L14/09R	266522.04	199309.33	39.00	33.99
L16/09R	266470.67	199330.27	47.35	31.84
L19/09	266417.61	199320.32	47.18	40.60
L21/09R	266494.65	199350.37	44.78	31.70
L23/09	266450.07	199350.73	46.01	31.33
L26/09	266469.88	199370.16	44.24	35.63

NS Not Surveyed

¹ No highlight: Ground levels taken from January 2023 topographical survey
 Yellow highlight: Ground levels taken from January 2022 topographical survey
 Orange highlight: Ground levels taken from June 2019 topographical survey

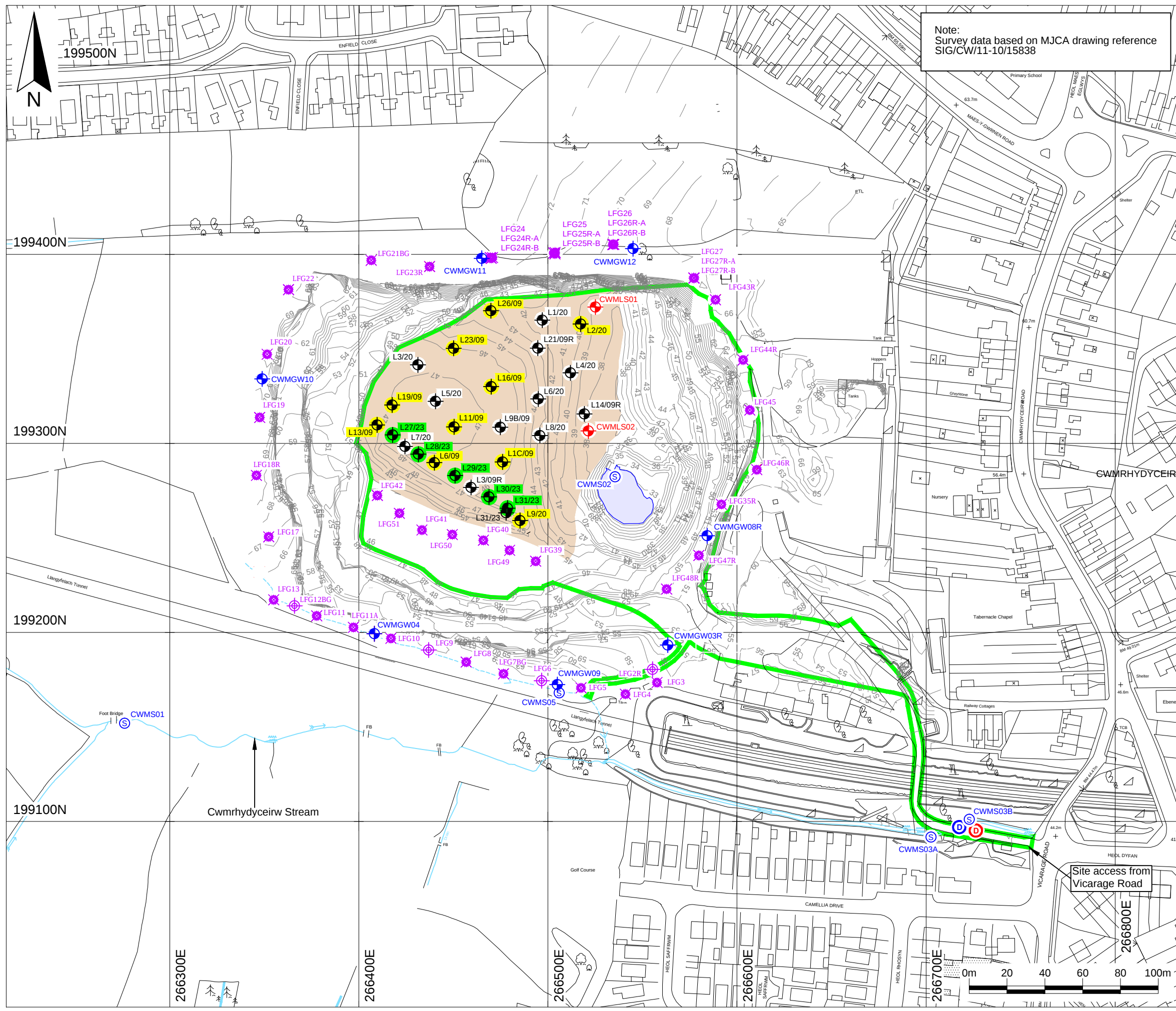
² Estimated base of waste taken from the base of waste model (SIG-CW-10041revA.LSS) presented in the report of the site investigation undertaken at the site in 2009

Table 3
Table HRA 3 from the 2014 HRA (Revised April 2022)

Proposed compliance limits for the leachate level at Cwmrhydyceirw Quarry Landfill

Criterion objectives		
To detect a permanent rise in leachate levels in the landfill above the levels recorded between June 2010 and May 2014.		
Measurement	Leachate level	
Frequency	Monthly	
Monitoring points	L1C/09, L3/09R, L6/09, L9B/09, L11/09, L14/09R, L16/09, L19/09, L21/09R, L23/09, L26/09, L1/20, L2/20, L3/20, L4/20, L5/20, L6/20, L7/20, L8/20 and L9/20	
Compliance limit¹	4.5m above the base of the waste	
Control level¹	4.0m above the base of the waste	
Assessment test	Six month moving average of all leachate heads exceeds the control level on three consecutive occasions.	
Contingency action	Response time	Responsibility
Advise Natural Resources Wales	24 hours from detection. (Notification via Schedule 6 Part A form)	Environmental manager
Check efficiency of leachate removal systems and initiate contingency actions	One month	Environmental manager
Report to Natural Resources Wales on the appraisal of risks and options for corrective measures.	Three months	Environmental manager
If the risks are acceptable re-evaluate the assessment criteria	Six months	Environmental manager
If the risks are unacceptable implement agreed corrective action	Six months	Environmental manager

¹ The compliance and assessment limits are based on the six month moving average of all leachate heads recorded at the site between November 2010 and May 2014.



Key / Notes

- Approximate of boundary of Environmental Permit reference EPR/TP3835LV
- Approximate area of the former landfill that has been capped
- Approximate route of a watercourse which outfalls to Cwmrhydyceirw Stream
- Watercourse external to the site
- Ground level contour (mAOD) (Pre-development)
- Approximate location of the groundwater and surface water sump
- CWMLS02** Approximate location of a leachate collection sump
- LFG1** Approximate location of an existing gas monitoring borehole
- LFG2** Approximate location of an existing combined gas and groundwater monitoring borehole
- L1/09** Approximate location of an existing combined leachate monitoring and gas venting well
- L2/20** Approximate location of a combined leachate monitoring and gas venting well which will be replaced
- L3/23** Approximate location of a proposed combined leachate monitoring and gas venting well
- CWMGW08** Approximate location of an existing groundwater monitoring borehole
- CWMS01** Approximate location of a surface water monitoring point
- Approximate location of the discharge to the Cwmrhydyceirw Stream
- Approximate location of the discharge to sewer

Note:
The locations of boreholes LFG23R and LFG43R are to be confirmed during the next topographical survey of the site.

	Final	KR	JAD	GT	03/04/23
Rev	Status	Drn	App	Chk	Date

Site
CWMRHYDYCEIRW QUARRY LANDFILL

Client
SI Green (UK) Ltd

Title
Plan showing the locations of the gas and groundwater monitoring boreholes and the existing and proposed leachate monitoring and gas venting wells

Figure 1
Scale: 1:2,000@A3

Drawing Ref
SIG/CW/03-23/23645

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Technical advisers on environmental issues Fax: 01827 718507

APPENDIX A

**REVISED TABLE HRA 3, REVISED TABLE HRA 6 AND THE EXTERNAL LANDFILL
GAS MONITORING BOREHOLES EMISSION LIMIT TABLE AGREED WITH NRW IN
JULY 2021**

Table HRA 3 from the 2014 HRA (Revised July 2021)

Proposed compliance limits for the leachate level at Cwmrhydyceirw Quarry Landfill

Criterion objectives		
To detect a permanent rise in leachate levels in the landfill above the levels recorded between June 2010 and May 2014.		
Measurement	Leachate level	
Frequency	Monthly	
Monitoring points	L1C/09, L3/09R, L6/09, L9B/09, L11/09, L13/09R, L14/09R, L16/09, L19/09, L21/09R, L23/09, L26/09 and CWMLS02 <i>(Note that monitoring points L3/09, L13/09, L14/09 and L21/09 are not functional and will be replaced in the Summer/Autumn 2021. Monitoring points L1/20 to L9/20 will be installed in the Summer/Autumn 2021.)</i>	
Compliance limit ¹	3.0m above the base of the landfill	
Control level ¹	2.5m above the base of the landfill	
Assessment test	Six month moving average of all leachate heads exceeds the control level on three consecutive occasions.	
Contingency action	Response time	Responsibility
Advise Natural Resources Wales	24 hours from detection. (Notification via Schedule 6 Part A form)	Environmental manager
Check efficiency of leachate removal systems and initiate contingency actions	One month	Environmental manager
Report to Natural Resources Wales on the appraisal of risks and options for corrective measures.	Three months	Environmental manager
If the risks are acceptable re-evaluate the assessment criteria	Six months	Environmental manager
If the risks are unacceptable implement agreed corrective action	Six months	Environmental manager

¹ The compliance and assessment limits are based on the six month moving average of all leachate heads recorded at the site between June 2010 and May 2014.

Table HRA 6 from the 2014 HRA (Revised July 2021)

**Contingency action plan for groundwater levels recorded below
the control and compliance limits**

Criterion objectives		
To detect groundwater elevations below the level of the groundwater and surface water sump		
Measurement	Groundwater level	
Frequency	Monthly	
Monitoring points¹	CWMGW03 (replacement), CWMGW04 (replacement), CWMGW08, CWMGW09, LFG2, LFG6, LFG9, LFG12BG, CWMGW10 (replaces monitoring points CWMGW07a and CWMGW07b), CWMGW11 (replaces monitoring point CWMGW06A (shallow)) and CWMGW12 (replaces monitoring point CWMGW01B (shallow)).	
Compliance limit²	32.0mAOD	
Control level³	32.5mAOD	
Assessment test	Groundwater levels recorded below the control level on three consecutive occasions. Groundwater levels recorded below the compliance limit on one occasion.	
Contingency action	Response time	Responsibility
Advise Natural Resources Wales	Within 24 hours of the exceedance. (Notification via Schedule 6 Part A form)	Environmental manager
Report to Natural Resources Wales on the appraisal of risks and options for corrective measures.	Three months	Environmental manager
If the risks are acceptable re-evaluate the assessment criteria	Six months	Environmental manager
If the risks are unacceptable implement agreed corrective action	Six months	Environmental manager

¹ Note that monitoring points CWMGW01B (shallow), CWMGW06A (shallow) and CWMGW07a are no longer functional and have been replaced in the monitoring schedule as has monitoring point CWMGW07b as detailed in the table above.

² The compliance limit comprises the water level for the groundwater and surface water sump as reported in the drainage statement for the revised proposals at the site.

³ The control level is set at the minimum groundwater level recorded round the site between January 2010 and May 2014.

Landfill gas in external monitoring boreholes – limits and requirements

Monitoring point reference /description	Parameter	Limit (including units)	Monitoring frequency	Monitoring standard or method
LFG1 , LFG2, LFG3, LFG4, LFG5, LFG6, LFG7BG, LFG8, LFG9, LFG10, LFG11, LFG11A, LFG12BG, LFG13, LFG14 , LFG15 , LFG16BG , LFG17, LFG18, LFG19, LFG20, LFG21BG, LFG22, LFG23, LFG24, LFG25, LFG26, LFG27, LFG28 , LFG29BG , LFG30 , LFG31 , LFG32BG , LFG33 , LFG34 , LFG35, LFG36 , LFG37 , LFG38 , LFG39, LFG40, LFG41 LFG42, LFG43, LFG44, LFG45, LFG46, LFG47 and LFG48 as shown on drawing reference: SIG/CW/12-20/22162 (dated 6 th Jan 2021). Proposed landfill gas monitoring boreholes LFG49, LFG50 and LFG51 – location as agreed with Natural Resources Wales.	Methane	1.5%	Monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “Guidance on the management of landfill gas LFTGN03”. Note:*1 A control level of 1.5% is applicable, unless otherwise agreed in writing with Natural Resources Wales.
	Carbon Dioxide	No Limit*1		
	Oxygen	No Limit		
	Atmospheric pressure	No Limit		
	Gas Pressure	No Limit		
	Water Level	No Limit		

The boreholes [identified in blue and underlined](#) will be decommissioned. The replacement boreholes have been installed and are included in the table.

APPENDIX B

**RESULTS OF THE MONTHLY ANALYSES UNDERTAKEN BY DECUS RESEARCH
LIMITED FOR SAMPLES COLLECTED FROM MONITORING POINT CWMS02 IN THE
SUMP OVER 2022**

Beth Jones
SI Green UK Ltd
Suite 1 Killfield House
Viking Way
Llansamlet
Swansea
SA1 7AD

Decus Research Limited
ExCAL House
Capel Hendre Industrial Estate
Ammanford
Carmarthenshire
SA18 3SJ

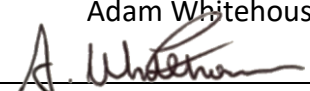
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 5432

Project/Site name:	SI Green	Samples Taken:	26-01-2022
Job Number:	-	Samples Received:	27-01-2022
Order Number:	Signed PAS	Date Instructed:	27-01-2022
Quotation Number:	DS 150606	Analysis Complete:	18-02-2022
Sample Matrix:	Surface Water	Report Issued:	22-02-2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager

Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 5432

Results of analysis of 1 samples received
on the 27/01/22

Report Date
22nd February 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				270122001	-	-	-
Client Sample Reference:				CWM SWMS 02	-	-	-
Sample Date:				26/01/22	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.1	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	509	-	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.43	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	45.6	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	4.0	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	5.1	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	44.6	-	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	282	-	-	-
INORG-L11	TON	mg.l^{-1}	A	0.20	-	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	<0.01	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	90.9	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	11.6	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	20.3	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	196	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	43.4	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	125	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	3.1	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	8.2	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	-	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	-	-	-

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 5432

Results of analysis of 1 samples received
on the 27/01/22

Report Date
22nd February 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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FAO: B. Jones

CERTIFICATE OF ANALYSIS 5432

Results of analysis of 1 samples received
on the 27/01/22

Report Date
22nd February 2022

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

*****END OF REPORT*****

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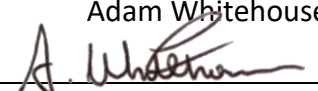
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 5519

Project/Site name:	SI Green	Samples Taken:	24-02-2022
Order Number:	Email Confirmation	Samples Received:	25-02-2021
Quotation Number:	DS210303	Date Instructed:	25-02-2021
Sample Matrix:	Surface Water, Groundwater	Analysis Complete:	15-03-2022
		Report Issued:	15-03-2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
on the 24/02/22

Report Date
15th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				250222001	250222002	250222003	250222004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				24/02/22	24/02/22	24/02/22	24/02/22
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.3	7.1	7.0	7.1
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	240	386	474	430
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	232	167	272	230
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.01	0.02	0.17	0.05
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	15.4	33.5	15.1	16.6
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	3.1	7.0	2.0	4.5
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	16.7	21.1	20.5	24.6
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	43.3	31.7	50.3	46.9
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	2.1	0.86	0.99	2.3
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	61.4	57.0	69.9	58.6
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.4	<1.0	<1.0	<1.0
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	<0.8	<0.8	<0.8	<0.8
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	23.7	17.6	371	20.3
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	56.3	287	906	270
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	56.3	287	906	270
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	1.9	<1.5	1.9
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	4.5	4.4	3.9	4.3
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	13.4	20.1	18.7	12.3
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	1.6	<1.1	<1.1

#

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CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
on the 24/02/22

Report Date
15th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				250222005	250222006	250222007	250222008
Client Sample Reference:				CWM GW10	CWM GW12	LFG2	LFG6
Sample Date:				24/02/22	24/02/22	24/02/22	24/02/22
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.5	7.4	7.4	6.7
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	559	501	538	251
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	318	279	300	120
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.06	0.02	0.02	0.21
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	18.9	27.5	13.1	18.0
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	4.7	3.7	5.0	2.0
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	18.6	21.7	20.6	18.6
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	64.9	35.9	58.8	15.6
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	2.2	1.6	1.3	1.2
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.18	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	94.0	77.3	112	38.6
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	<1.0	<1.0	<1.0
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	<0.8	<0.8	8.1	<0.8
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	10.2	2.6	27.6	360
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	4.2	<4.1	<4.1
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	28.1	24.6	11.2	9.9
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	1,190	242	150	377
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	7.0	<1.5	<1.5	2.8
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	4.6	3.7	11.5	2.8
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	11.9	13.4	10.4	11.2
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	<1.1	10.5	<1.1

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CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
on the 24/02/22

Report Date
15th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				250222009	250222010	-	-
Client Sample Reference:				LFG9	LFG12BG	-	-
Sample Date:				24/02/22	24/02/22	-	-
Sample Matrix:				Groundwater	Groundwater	-	-
INORG-L01	pH	pH units	A	6.9	6.7	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	311	299	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	141	112	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	<0.01	<0.01	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	26.1	28.5	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	4.1	7.1	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	15.4	11.7	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	29.0	29.7	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	2.2	2.3	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	<0.11	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	45.8	44.0	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	5.8	4.1	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.7	<0.8	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	183	36.9	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	<4.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	14.7	11.8	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	13.5	10.3	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	<1.5	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	3.2	1.9	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	14.4	17.1	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.7	<1.1	-	-

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CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
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Report Date
15th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				250222011	250222012	250222013	250222014
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				24/02/22	24/02/22	24/02/22	24/02/22
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L01	pH	pH units	A	7.7	7.5	7.9	7.9
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	240	532	242	249
INORG-L06.1	BOD	$\text{mg.l}^{-1} \text{O}_2$	A	0.8	4.3	0.4	1.4
INORG-L05	COD	$\text{mg.l}^{-1} \text{O}_2$	A	11	12	24	29
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{as CaCO}_3$	A	63.4	225	66.4	68.4
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{as N}$	A	0.01	0.27	0.01	0.07
INORG-L13	Chloride	mg.l^{-1}	A	36.4	40.7	35.7	34.9
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	10.4	6.4	10.7	10.3
-	Total Oxidised Nitrogen	$\text{mg.l}^{-1} \text{as N}$	A	2.3	1.2	0.89	2.5
METALS-L	Sulphate	mg.l^{-1}	A	18.7	59.4	20.0	22.6
1450	Cadmium	$\mu\text{g.l}^{-1}$	S-N	0.21	<0.11	0.15	0.14
METALS-L	Calcium	mg.l^{-1}	A	32.1	82.7	33.7	34.7
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	9.2	<1.0	7.5	7.9
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	5.2	<0.8	4.2	4.1
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	125	46.4	121	148
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	4.2	<4.1	<4.1	<4.1
METALS-L	Magnesium	mg.l^{-1}	A	4.1	18.3	4.1	4.0
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	20.0	114	16.6	17.2
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	4.3	<1.5	3.2	3.6
METALS-L	Potassium	mg.l^{-1}	A	2.7	10.6	2.8	3.6
METALS-L	Sodium	mg.l^{-1}	A	22.7	18.6	22.2	21.5
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	27.4	3.6	20.6	18.7
INORG-L10	Suspended Solids	mg.l^{-1}	A	<1.5 [B]	<1.5 [B]	<1.5 [B]	4.0 [B]
INORG-L31	Cyanide	mg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
INORG-L20	Total Phenols	mg.l^{-1}	A	<0.01	<0.01	<0.01	<0.01
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l^{-1}	N	<0.2	<0.2	<0.2	<0.2
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	12.6	13.3	14.7	15.6

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CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
on the 24/02/22

Report Date
15th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				250222015	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				24/02/22	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.8	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	195	-	-	-
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	1.1	-	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	15	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	75.0	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.07	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	23.1	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	9.7	-	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	1.1	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	12.4	-	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	32.9	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	8.0	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.0	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	135	-	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	3.1	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	3.5	-	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	1.8	-	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	12.6	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	-	-	-
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	3.0 [B]	-	-	-
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	-	-	-
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	<0.01	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	16.7	-	-	-

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CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
on the 24/02/22

Report Date
15th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				250222016	250222017	-	-
Client Sample Reference:				L9B/09	LS02	-	-
Sample Date:				24/02/22	24/02/22	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L01	pH	pH units	N	7.6	7.8	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	N	16,160	1,995	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	N	139	24	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.44	20.6	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	N	3,980	463	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	<0.07	1.0	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	N	25.4	311	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	N	33.9	107	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	0.14	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	N	68.8	208	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	N	30.3	1.1	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	N	5.2	1.3	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	N	4,100	12.8	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	N	<4.1	<4.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	N	89.5	14.6	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	N	281	195	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	N	55.2	<1.5	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	N	575	59.4	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	N	1,490	96.9	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	N	11.8	<1.1	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	N	3,300	208	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
on the 24/02/22

Report Date
15th March 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5519
Results of analysis of 17 samples received
on the 24/02/22

Report Date
15th March 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

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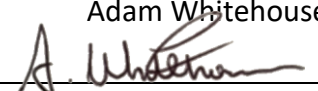
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 5600

Project/Site name:	SI Green	Samples Taken:	23-03-2022
Order Number:	Email Confirmation	Samples Received:	23-03-2022
Quotation Number:	DS210303	Date Instructed:	23-03-2022
Sample Matrix:	Surface Water, Groundwater	Analysis Complete:	24-04-2022
		Report Issued:	12-05-2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5600
Results of analysis of 2 samples received
on the 23/03/22

Report Date
12th May 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				240322003	-	-	-
Client Sample Reference:				CWM GW11	-	-	-
Sample Date:				23/03/22	-	-	-
Sample Matrix:				Groundwater	-	-	-
INORG-L01	pH	pH units	A	7.2	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	664	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	263	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.02	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	39.7	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	7.5	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	16.7	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	55.8	-	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	<0.07	-	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	0.14	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	108	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.1	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.2	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	15.8	-	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.8	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	26.7	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	663	-	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.7	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	3.0	-	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	16.5	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	-	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5600
Results of analysis of 2 samples received
on the 23/03/22

Report Date
12th May 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				240322004	-	-	-
Client Sample Reference:				CWM S02	-	-	-
Sample Date:				23/03/22	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.5	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	603	-	-	-
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	2.5 [B]	-	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	32	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	208	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.13	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	56.8	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	9.4	-	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.38	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	46.6	-	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	92.0	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.1	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	43.3	-	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.8	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	18.9	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.0	-	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	10.6	-	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	19.3	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	-	-	-
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	<1.5 [B]	-	-	-
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	-	-	-
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	<0.01	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	22.4	-	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5600
Results of analysis of 2 samples received
on the 23/03/22

Report Date
12th May 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5600
Results of analysis of 2 samples received
on the 23/03/22

Report Date
12th May 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

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A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

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[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

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SA18 3SJ

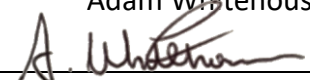
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 5699

Project/Site name:	SI Green	Samples Taken:	28-04-2022
Order Number:	Email Confirmation	Samples Received:	29-04-2022
Quotation Number:	DS210303	Date Instructed:	29-04-2022
Sample Matrix:	Surface Water, Groundwater	Analysis Complete:	31-05-2022
		Report Issued:	31-05-2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5699

Results of analysis of 1 sample received on
the 28/04/22

Report Date
31st May 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				290422004	-	-	-
Client Sample Reference:				CWM S02	-	-	-
Sample Date:				28/04/22	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.4	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	662	-	-	-
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	208	-	-	-
INORG-L12	Ammonia	mg.l^{-1} as N	A	0.15	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	79.7	-	-	-
INORG-L08	Dissolved Oxygen	mg.l^{-1} O_2	A	11.9	-	-	-
INORG-L11	Total Oxidised Nitrogen	mg.l^{-1} as N	A	1.2	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	57	-	-	-
1455	Cadmium	$\mu\text{g.l}^{-1}$	S-A	<0.11	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	82.2	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	8.2	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	2.8	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	7.9	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	21.0	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	<1.0	-	-	-
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	0.83	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	12.0	-	-	-
METALS-L	Sodium	mg.l^{-1}	A	23.1	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	4.0	-	-	-
INORG-L31	Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L20	Total Phenols	mg.l^{-1}	A	0.02	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
INORG-L18	Total Organic Carbon	mg.l^{-1} C	A	12.3	-	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5699

Results of analysis of 1 sample received on
the 28/04/22

Report Date
31st May 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1455	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

*** Accreditation Status**

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Any comments or interpretations are beyond the scope of UKAS accreditation



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5699
Results of analysis of 1 sample received on
the 28/04/22

Report Date
31st May 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

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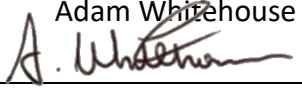
Tel: 01269 844558
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Email: info@decusuk.co.uk

Certificate of Analysis Number: 5794

Project/Site name:	SI Green	Samples Taken:	01-06-2022
Order Number:	Email Confirmation	Samples Received:	01-06-2022
Quotation Number:	DS210303	Date Instructed:	01-06-2022
Sample Matrix:	Surface Water, Groundwater	Analysis Complete:	06-07-2022
		Report Issued:	31-07-2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5794

Results of analysis of 1 sample received on
the 01/06/22

Report Date
31st July 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				060622055	-	-	-
Client Sample Reference:				CWM S02	-	-	-
Sample Date:				01/06/22	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.6	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	552	-	-	-
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	213	-	-	-
INORG-L12	Ammonia	mg.l^{-1} as N	A	0.25	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	63.3	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	10.7	-	-	-
INORG-L11	Total Oxidised Nitrogen	mg.l^{-1} as N	A	1.5	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	57.1	-	-	-
1455	Cadmium	$\mu\text{g.l}^{-1}$	S-A	<0.11	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	86.7	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	9.5	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	14.4	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	18.2	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	5.8	-	-	-
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	10.5	-	-	-
METALS-L	Sodium	mg.l^{-1}	A	21.2	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	4.0	-	-	-
INORG-L31	Cyanide	mg.l^{-1}	N	0.05	-	-	-
INORG-L20	Total Phenols	mg.l^{-1}	A	0.02	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	15.8	-	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5794

Report Date
31st July 2022

Results of analysis of 1 sample received on
the 01/06/22

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1455	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5794
Results of analysis of 1 sample received on
the 01/06/22

Report Date
31st July 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

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A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

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[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

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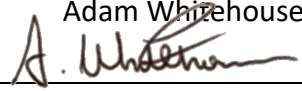
Tel: 01269 844558
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Email: info@decusuk.co.uk

Certificate of Analysis Number: 5828

Project/Site name:	SI Green	Samples Taken:	17-06-2022
Order Number:	Email Confirmation	Samples Received:	20-06-2021
Quotation Number:	DS210303	Date Instructed:	20-06-2021
Sample Matrix:	Surface Water, Groundwater	Analysis Complete:	15-07-2022
		Report Issued:	31-07-2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5828
Results of analysis of 16 samples received
on the 20/06/22

Report Date
31th July 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				200622001	200622002	200622003	200622004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				17/06/22	17/06/22	17/06/22	17/06/22
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.0	6.9	6.8	6.7
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	469	506	498	589
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	214	203	227	275
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.01	0.03	0.36	0.02
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	15.7	40.5	17.5	16.9
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	9.9	8.6	7.2	8.2
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	15.7	11.6	14.8	15.7
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	40.8	27.8	45.1	60.8
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.09	0.44	<0.07	0.12
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	63.4	60.5	64.0	70.8
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.4	1.7	1.3	1.4
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	<0.8	<0.8	<0.8	<0.8
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	38.8	28.7	420	23.0
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	9.6	6.0	11.6
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	23.6	23.5	22.1	35.1
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	60.1	406	927	33.8
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	2.9	<1.5	<1.5
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	4.0	4.4	3.2	3.5
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	12.3	15.7	17.7	12.2
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	<1.1	1.5	<1.1

#

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5828
Results of analysis of 16 samples received
on the 20/06/22

Report Date
31th July 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				200622005	200622006	200622007	200622008
Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				17/06/22	17/06/22	17/06/22	17/06/22
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.4	7.2	7.2	7.2
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	573	712	508	548
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	280	289	224	257
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.07	0.05	0.05	0.13
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	21.1	37.8	28.0	14.6
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	9.5	8.6	9.6	7.7
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	21.3	16.6	16.0	9.8
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	44.4	79.7	31.0	49.2
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	<0.07	0.12	<0.07	0.08
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	82.6	110	71.7	96.7
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.4	1.4	<1.0	<1.0
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	<0.8	<0.8	<0.8	<0.8
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	12.1	34.6	19.6	45.9
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	7.1	5.1	7.6	5.0
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	25.8	27.1	22.7	14.8
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	1220	950	397	328
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	5.9	1.8	<1.5	3.1
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	3.6	2.8	3.1	9.7
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	11.7	15.8	12.6	10.4
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	<1.1	<1.1	36.2

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CERTIFICATE OF ANALYSIS 5828
Results of analysis of 16 samples received
on the 20/06/22

Report Date
31th July 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				200622009	200622010	-	-
Client Sample Reference:				LFG6	LFG12BG	-	-
Sample Date:				17/06/22	17/06/22	-	-
Sample Matrix:				Groundwater	Groundwater	-	-
INORG-L01	pH	pH units	A	6.5	6.7	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	259	286	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	108	96.9	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.17	0.01	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	18.8	22.7	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	7.3	9.7	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	11.7	14.3	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	17.8	29.5	-	-
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	<0.07	0.97	-	-
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	28.9	35.3	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	6.8	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	<0.8	<0.8	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	500	47.5	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.3	<4.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	11.3	9.0	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	697	4.5	-	-
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.1	<1.5	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	2.1	1.3	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	10.5	14.1	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	<1.1	-	-

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Client: JPCE Ltd (SI Green)
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CERTIFICATE OF ANALYSIS 5828
Results of analysis of 16 samples received
on the 20/06/22

Report Date
31th July 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				200622011	200622012	200622013	200622014
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				17/06/22	17/06/22	17/06/22	17/06/22
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L01	pH	pH units	A	7.9	7.3	8.0	8.0
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	390	595	383	381
INORG-L06.1	BOD	$\text{mg.l}^{-1} \text{O}_2$	A	1.2	2.0	2.0	1.9
INORG-L05	COD	$\text{mg.l}^{-1} \text{O}_2$	A	15	34	22	16
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{as CaCO}_3$	A	95.9	242	96.5	95.0
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{as N}$	A	0.03	0.16	0.03	0.01
INORG-L13	Chloride	mg.l^{-1}	A	51.9	35.3	48.5	49.0
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	9.8	6.1	10.0	10.3
INORG-L11	Total Oxidised Nitrogen	$\text{mg.l}^{-1} \text{as N}$	A	2.0	0.57	2.0	1.9
METALS-L	Sulphate	mg.l^{-1}	A	29.6	57.0	28.7	28.3
1455	Cadmium	$\mu\text{g.l}^{-1}$	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	mg.l^{-1}	A	46.9	84.0	47.3	47.9
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	7.9	4.6	7.8	8.2
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	<0.8	<0.8	<0.8
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	61.6	467	56.8	58.6
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	4.7	7.5	4.8	<4.1
METALS-L	Magnesium	mg.l^{-1}	A	4.9	20.9	4.8	4.9
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	5.3	274	1.5	1.5
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	<1.5	<1.5	<1.5
METALS-L	Potassium	mg.l^{-1}	A	2.7	7.5	2.7	2.6
METALS-L	Sodium	mg.l^{-1}	A	32.2	18.5	30.4	31.1
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	6.0	5.3	7.3	6.8
INORG-L10	Suspended Solids	mg.l^{-1}	A	<1.5	2.0	4.0	1.6
INORG-L31	Cyanide	mg.l^{-1}	N	0.05	0.07	<0.05	<0.05
INORG-L20	Total Phenols	mg.l^{-1}	A	0.03	0.04	0.06	0.06
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l^{-1}	N	<0.2	<0.2	<0.2	<0.2
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	11.7	12.6	12.8	13.4

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5828
Results of analysis of 16 samples received
on the 20/06/22

Report Date
31th July 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				200622015	200622016	-	-
Client Sample Reference:				CWMLS02	L9B/09	-	-
Sample Date:				17/06/22	17/06/22	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L01	pH	pH units	N	7.7	7.4	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	N	4715	16927	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	N	18.8	0.09	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	N	1490	4180	-	-
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	N	1.5	0.2	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	N	297	28.9	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	N	190	32.3	-	-
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	N	538	68.2	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	N	1.7	37.1	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	N	16.6	40.7	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	N	58.5	9200	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	N	<4.1	7.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	N	41.1	101	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	N	2070	570	-	-
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.5	71.3	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	N	141	603	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	N	248	1730	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.1	8.4	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	N	157	2910	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5828
Results of analysis of 16 samples received
on the 20/06/22

Report Date
31th July 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1455	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5828
Results of analysis of 16 samples received
on the 20/06/22

Report Date
31th July 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

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A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

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[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

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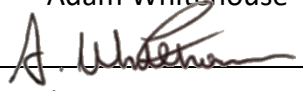
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 5934

Project/Site name:	SI Green	Samples Taken:	27/07/2022
Quotation Number:	DS150606	Samples Received:	27/07/2022
Order Number:	-	Date Instructed:	27/07/2022
Sample Matrix:	Surface Water	Analysis Complete:	05/08/2022
		Report Issued:	08/08/2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



4303

Client: SI Green
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5934
Results of analysis of 1 sample received on
the 27/07/2022

Report Date
08/08/2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				270722030	-	-	-
Client Sample Reference:				CWM SWMS 02	-	-	-
Sample Date:				27/07/2022	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.6	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	680	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as HCO_3	A	274	-	-	-
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	2.4	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as NH_4	A	1.3	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	81.5	-	-	-
INORG-L20	Total Phenol	$\text{mg}\cdot\text{l}^{-1}$	A	0.02	-	-	-
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ as O_2	A	14.4	-	-	-
INORG-L10	Total Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	2.8	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ as O_2	A	24.3	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	70.4	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.9	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	7.9	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.7	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	-	-	-
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	686	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	167	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	86.2	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	17.3	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	10.6	-	-	-
METALS-L	Phosphate total	$\text{mg}\cdot\text{l}^{-1}$	A	<0.2	-	-	-
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-

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Client: SI Green
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5934
Results of analysis of 1 sample received on
the 27/07/2022

Report Date
08/08/2022

Analytical Method	Method Code	Accreditation Status
Determination of Cyanide in water by discrete analyser (Sub-contracted method)	1300	ISO 17025
Determination of Metals in water by ICP-MS (Sub-contracted method)	1450	ISO 17025
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Conductivity in water by ECM discrete analyser (In-house method)	INORG-L02	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser Photometer (In-house method)	INORG-L11	ISO 17025
Determination of ammonia in waters by Discrete Analyser (In-house method)	INORG-L12	ISO 17025
Determination of Chloride in water by Discrete Analyser (In-house method)	INORG-L13	ISO 17025
Determination of total organic carbon in waters by photometer (In-house method)	INORG-L18	ISO 17025
Determination of Phenol in water by Discrete Analyser (In-house method)	INORG-L20	ISO 17025
Determination of metals in waters by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of PAHs in water by GC-MS (In-house method)	ORG-L02	None

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Client: SI Green
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5934
Results of analysis of 1 sample received on
the 27/07/2022

Report Date
08/08/2022

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

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[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

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Beth Jones

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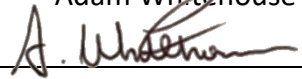
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 6037

Project/Site name:	SI Green	Samples Taken:	30/08/2022
Quotation Number:	DS150606	Samples Received:	30/08/2022
Order Number:	-	Date Instructed:	30/08/2022
Sample Matrix:	Surface Water	Analysis Complete:	14/09/2022
		Report Issued:	14/09/2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



4303

Client: SI Green
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 6037
Results of analysis of 1 sample received on
the 30/08/2022

Report Date
14/09/2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				300822002	-	-	-
Client Sample Reference:				CWM SWMS 02	-	-	-
Sample Date:				30/08/22	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.3	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	633	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as HCO_3	A	282	-	-	-
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	1.2	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as NH_4	A	0.57	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	48.1	-	-	-
INORG-L20	Total Phenol	$\text{mg}\cdot\text{l}^{-1}$	A	<0.01	-	-	-
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ as O_2	A	16.5	-	-	-
INORG-L10	Total Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	<1.5	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ as O_2	A	25.2	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	73.4	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.7	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.1	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.8	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.2	-	-	-
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	313	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	108	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	83.5	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	18.4	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	9.0	-	-	-
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-

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Client: SI Green
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 6037
Results of analysis of 1 sample received on
the 30/08/2022

Report Date
14/09/2022

Analytical Method	Method Code	Accreditation Status
Determination of Cyanide in water by discrete analyser (Sub-contracted method)	1300	ISO 17025
Determination of Metals in water by ICP-MS (Sub-contracted method)	1450	ISO 17025
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Conductivity in water by ECM discrete analyser (In-house method)	INORG-L02	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser Photometer (In-house method)	INORG-L11	ISO 17025
Determination of ammonia in waters by Discrete Analyser (In-house method)	INORG-L12	ISO 17025
Determination of Chloride in water by Discrete Analyser (In-house method)	INORG-L13	ISO 17025
Determination of total organic carbon in waters by photometer (In-house method)	INORG-L18	ISO 17025
Determination of Phenol in water by Discrete Analyser (In-house method)	INORG-L20	ISO 17025
Determination of metals in waters by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of PAHs in water by GC-MS (In-house method)	ORG-L02	None

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FAO: Beth Jones

CERTIFICATE OF ANALYSIS 6037
Results of analysis of 1 sample received on
the 30/08/2022

Report Date
14/09/2022

Disposal Times:

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[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

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Uncertainties of measurement values are available upon request.

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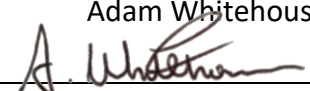
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Email: info@decusuk.co.uk

Certificate of Analysis Number: 6094

Project/Site name:	SI Green	Samples Taken:	15/09/2022
Order Number:	Email Confirmation	Samples Received:	16/09/2022
Quotation Number:	DS210303	Date Instructed:	16/09/2022
Sample Matrix:	Surface Water, Groundwater, Leachate	Analysis Complete:	19/10/2022
		Report Issued:	06/11/2022
		Sampled By:	Client

Amendment Records:

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6094
Results of analysis of 17 samples received
on the 16/09/22

Report Date
06th November 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				160922021	160922022	160922023	160922024
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				15/09/2022	15/09/2022	15/09/2022	15/09/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	6.9	7.0	6.6	6.7
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	442	608	522	580
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	198	270	228	262
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.02	0.87	0.09	0.03
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	15.1	39.8	16.1	17.2
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	1.3	8.2	0.5	1.4
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	31.3	33.2	37.7	47.9
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	39.6	44.6	51.4	55.7
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.21	0.99	0.77	0.44
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	49.1	69.7	62.9	64.9
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.3	1.7	1.4	1.7
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	0.9	1.3	0.9	<0.8
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	58.2	43.9	81.4	28.4
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	20.7	24.7	20.2	31.7
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	62.4	722	854	143
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.7	5.2	2.6	2.2
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	3.2	4.4	3.5	3.4
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	11.3	18.8	17.4	11.8
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	3.8	3.6	<1.1

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CERTIFICATE OF ANALYSIS 6094
Results of analysis of 17 samples received
on the 16/09/22

Report Date
06th November 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				160922025	160922026	160922027	160922028
Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				15/09/2022	15/09/2022	15/09/2022	15/09/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.0	7.1	7.1	7.1
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	571	756	512	647
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	246	290	227	263
INORG-L12	Ammonia	mg.l^{-1} as N	A	0.09	0.03	0.03	<0.01
INORG-L13	Chloride	mg.l^{-1}	A	17.2	37.9	28.1	17.9
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	3.2	1.8	2.6	1.7
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	43.5	52.0	40.6	57.0
METALS-L	Sulphate	mg.l^{-1}	A	58.3	89.5	30.4	81.2
INORG-L11	Total Oxidised Nitrogen	mg.l^{-1} as N	A	0.21	0.20	1.2	0.70
1455	Cadmium	$\mu\text{g.l}^{-1}$	S-A	<0.11	<0.11	<0.11	0.15
METALS-L	Calcium	mg.l^{-1}	A	69.9	109	63.5	110
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	2.1	1.2	1.7	<1.0
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	0.8	1.1	<0.8	5.8
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	10.5	36.0	17.1	62.6
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Magnesium	mg.l^{-1}	A	26.3	27.1	21.3	12.5
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	626	654	315	55.0
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	4.4	3.5	2.5	2.1
METALS-L	Potassium	mg.l^{-1}	A	3.4	2.4	2.6	10.9
METALS-L	Sodium	mg.l^{-1}	A	10.9	15.0	11.8	10.6
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	<1.1	4.9

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CERTIFICATE OF ANALYSIS 6094
Results of analysis of 17 samples received
on the 16/09/22

Report Date
06th November 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				160922029	160922030	160922031	-
Client Sample Reference:				LFG6	LFG9	LFG12BG	-
Sample Date:				15/09/2022	15/09/2022	15/09/2022	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
INORG-L01	pH	pH units	A	6.4	6.6	6.8	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	303	812	416	-
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	124	339	143	-
INORG-L12	Ammonia	mg.l^{-1} as N	A	0.09	0.33	<0.01	-
INORG-L13	Chloride	mg.l^{-1}	A	19.8	28.6	22.8	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	1.5	0.6	7.9	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	24.2	84.6	23.5	-
METALS-L	Sulphate	mg.l^{-1}	A	19.4	92.6	59.5	-
INORG-L11	Total Oxidised Nitrogen	mg.l^{-1} as N	A	0.11	0.23	0.32	-
1455	Cadmium	$\mu\text{g.l}^{-1}$	S-A	<0.11	<0.11	<0.11	-
METALS-L	Calcium	mg.l^{-1}	A	31.4	117	66.4	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	1.1	4.0	7.1	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	3.8	1.2	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	317	81.3	47.2	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	5.2	4.2	-
METALS-L	Magnesium	mg.l^{-1}	A	11.5	25.9	12.6	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	482	7600	6.3	-
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	<0.05	<0.05	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	3.3	37.2	<1.5	-
METALS-L	Potassium	mg.l^{-1}	A	2.1	6.4	1.7	-
METALS-L	Sodium	mg.l^{-1}	A	10.4	18.7	17.1	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	2.6	<1.1	-

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Client: JPCE Ltd (SI Green)
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6094
Results of analysis of 17 samples received
on the 16/09/22

Report Date
06th November 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				160922032	160922033	160922034	160922035
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				15/09/2022	15/09/2022	15/09/2022	15/09/2022
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L01	pH	pH units	A	7.9	7.1	8.0	8.1
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	406	739	397	398
INORG-L06.1	BOD	$\text{mg.l}^{-1} \text{O}_2$	A	0.9	4.6	0.7	<0.4
INORG-L05	COD	$\text{mg.l}^{-1} \text{O}_2$	A	5	12	<2	5
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{as CaCO}_3$	A	89.8	231	93.6	109
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{as N}$	A	0.01	0.55	0.02	<0.01
INORG-L13	Chloride	mg.l^{-1}	A	83.4	59.8	54.8	65.6
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	9.2	3.2	10.1	9.9
INORG-L11	Total Oxidised Nitrogen	$\text{mg.l}^{-1} \text{as N}$	A	1.8	0.98	1.9	1.8
METALS-L	Sulphate	mg.l^{-1}	A	31.6	96.3	31.4	31.2
1455	Cadmium	$\mu\text{g.l}^{-1}$	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	mg.l^{-1}	A	45.4	97.9	48.0	47.9
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	7.9	4.0	7.8	8.3
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	2.7	2.1	2.5	2.5
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	44.1	142	62.2	59.0
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	<4.1	<4.1	4.5
METALS-L	Magnesium	mg.l^{-1}	A	4.5	20.8	4.4	4.5
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	19.3	57.0	2.3	2.2
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	<1.5	<1.5	<1.5
METALS-L	Potassium	mg.l^{-1}	A	2.6	11.1	2.5	2.7
METALS-L	Sodium	mg.l^{-1}	A	34.8	22.3	31.0	32.8
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	<1.1	<1.1
INORG-L10	Suspended Solids	mg.l^{-1}	A	10.4	6.0	1.6	<1.5
INORG-L31	Cyanide	mg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
INORG-L20	Total Phenols	mg.l^{-1}	A	<0.01	<0.01	<0.01	<0.01
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l^{-1}	N	<0.2	<0.2	<0.2	<0.2
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	11.6	25.5	13.8	12.1

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Client: JPCE Ltd (SI Green)
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6094
Results of analysis of 17 samples received
on the 16/09/22

Report Date
06th November 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				160922036	160922037	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				15/09/2022	15/09/2022	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L01	pH	pH units	N	8.3	7.3	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	N	1123	16664	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	N	53	840	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.21	0.38	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	N	83.3	3830	-	-
INORG-L11	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	1.1	0.19	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	N	36.6	123	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	N	429	27.3	-	-
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	N	187	68.6	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	N	7.2	28.7	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	N	7.9	8.9	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	N	71.4	131	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	N	<4.1	<4.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	N	14.4	79.6	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	N	120	379	-	-
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	N	3.9	50.8	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	N	16.4	429	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	N	41.7	1330	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.1	<1.1	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	N	130	2940	-	-

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CERTIFICATE OF ANALYSIS 6094
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Report Date
06th November 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1455	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	None
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	None
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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CERTIFICATE OF ANALYSIS 6094
Results of analysis of 17 samples received
on the 16/09/22

Report Date
06th November 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

Uncertainties of measurement values are available upon request.

*****END OF REPORT*****

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John Perkins

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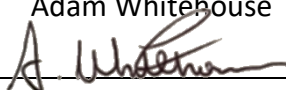
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 6230 Rev.1

Project/Site name:	SI Green	Samples Taken:	27/10/2022
Quotation Number:	DS150606	Samples Received:	28/10/2022
Order Number:		Date Instructed:	28/10/2022
Sample Matrix:	Surface water	Analysis Complete:	15/11/2022
		Report Issued:	21/11/2022
		Sampled By:	Client

Amendment Records:

Lead analysis added

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



4303

Client: SI Green
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6230 Rev.1
Results of analysis of 1 samples received
on the 28/10/2022

Report Date
21/11/2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				281022015	-	-	-
Client Sample Reference:				CWM SO2	-	-	-
Sample Date:				27/10/2022	-	-	-
Sample Matrix:				Surface water	-	-	-
INORG-L01	pH	pH units	A	7.6	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	537	-	-	-
INORG-L09	Alkalinity	mg.l^{-1} as HCO_3	A	164	-	-	-
INORG-L11	Total Oxidised Nitrogen	mg.l^{-1} as N	A	2.5	-	-	-
INORG-L12	Ammonia	mg.l^{-1} as NH_4	A	0.51	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	25.7	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	0.07	-	-	-
INORG-L31	Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L08	Dissolved Oxygen	mg.l^{-1} as O_2	A	6.7	-	-	-
INORG-L10	Total Suspended Solids	mg.l^{-1}	A	55.3	-	-	-
INORG-L18	Total Organic Carbon	mg.l^{-1} as O_2	A	25.6	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	109	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	8.4	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	9.8	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	4.0	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	3.1	-	-	-
1455	Cadmium	$\mu\text{g.l}^{-1}$	A	<0.11	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	288	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	5.8	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	80.8	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	6.5	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	9.9	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	5.7	-	-	-
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-

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Client: SI Green
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6230 Rev.1
Results of analysis of 1 samples received
on the 28/10/2022

Report Date
21/11/2022

Analytical Method	Method Code	Accreditation Status
Determination of Cyanide in water by discrete analyser (Sub-contracted method)	1300	ISO 17025
Determination of Metals in water by ICP-MS (Sub-contracted method)	1455	ISO 17025
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Conductivity in water by ECM discrete analyser (In-house method)	INORG-L02	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of suspended solids in water by gravimetric analysis (In-house method)	INORG-L10	ISO 17025
Determination of Nitrate in water by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser Photometer (In-house method)	INORG-L11	ISO 17025
Determination of ammonia in waters by Discrete Analyser (In-house method)	INORG-L12	ISO 17025
Determination of Chloride in water by Discrete Analyser (In-house method)	INORG-L13	ISO 17025
Determination of total organic carbon in waters by photometer (In-house method)	INORG-L18	ISO 17025
Determination of Phenol in water by Discrete Analyser (In-house method)	INORG-L20	ISO 17025
Determination of metals in waters by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of PAHs in water by GC-MS (In-house method)	ORG-L02	ISO 17025

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Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

Uncertainties of measurement values are available upon request.

*****END OF REPORT*****

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Certificate of Analysis Number: 6315

Project/Site name:	SI Green	Samples Taken:	28/11/2022
Order Number:	-	Samples Received:	28/11/2022
Quotation Number:	DS210303	Date Instructed:	28/11/2022
Sample Matrix:	Surface Water, Groundwater, Leachate	Analysis Complete:	22/12/2022
		Report Issued:	08/01/2023
		Sampled By:	Client

Amendment Records:

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122006	291122007	291122008	291122009
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.6	7.1	7.0	6.7
INORG-L12	Ammonia	mg.l ⁻¹ as N	A	0.09	<0.01	0.07	0.16
INORG-L13	Chloride	mg.l ⁻¹	A	19.5	40.5	27.1	19.2
INORG-L09	Alkalinity	mg.l ⁻¹ as CaCO ₃	A	418	325	266	273
INORG-L18	Total Organic Carbon	mg.l ⁻¹ C	A	30.1	31.2	35.5	45.7
METALS-L	Sulphate	mg.l ⁻¹	A	99.9	45.2	40.6	42.5
INORG-L11	Total Oxidised Nitrogen	mg.l ⁻¹ as N	A	0.57	0.28	0.38	0.50
INORG-L08	Dissolved Oxygen	mg.l ⁻¹ O ₂	A	12.2	10.9	14.5	11.1
INORG-L02	Conductivity	μS.cm ⁻¹	A	805	640	516	500
INORG-L15	Fluoride	mg.l ⁻¹	A	2.3	0.15	0.13	0.19
METALS-L	Nickel	μg.l ⁻¹	A	<1.5	<1.5	4.9	<1.5
1455	Cadmium	μg.l ⁻¹	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Copper	μg.l ⁻¹	A	4.7	1.8	3.9	3.5
METALS-L	Manganese	μg.l ⁻¹	A	18.4	1.4	317	646
METALS-L	Iron	μg.l ⁻¹	A	1.2	17.5	11.1	25.9
METALS-L	Zinc	μg.l ⁻¹	A	<1.1	<1.1	9.6	6.2
METALS-L	Lead	μg.l ⁻¹	A	<4.1	6.9	6.3	<4.1
METALS-L	Chromium	μg.l ⁻¹	A	9.7	<1.0	3.3	<1.0
METALS-L	Sodium	mg.l ⁻¹	A	14.6	20.8	17.6	13.5
METALS-L	Potassium	mg.l ⁻¹	A	8.5	5.1	5.5	4.2
METALS-L	Calcium	mg.l ⁻¹	A	126	76.0	59.1	57.9
METALS-L	Magnesium	mg.l ⁻¹	A	26.5	26.3	23.5	24.7
1455	Mercury	μg.l ⁻¹	S-A	<0.05	<0.05	<0.05	<0.05
1455	Arsenic	μg.l ⁻¹	S-A	0.96	0.35	0.75	0.44
1455	Selenium	μg.l ⁻¹	S-A	1.4	<0.50	<0.50	<0.50
1455	Antimony	μg.l ⁻¹	S-A	1.3	<0.50	<0.50	<0.50
1455	Tellurium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1455	Thallium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1455	Uranium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0

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CERTIFICATE OF ANALYSIS 6315
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Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122006	291122007	291122008	291122009
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Naphthalene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	<0.20	<0.20	<0.20
ORG-L17	Mecoprop	µg.l ⁻¹	N	<0.1	<0.1	<0.1	<0.1
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	3.0	<0.50	2.9	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Acenaphthylene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Fluorene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Phenanthrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l ⁻¹	N	6.8	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l ⁻¹	N	7.9	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05

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CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122006	291122007	291122008	291122009
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20

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Laboratory Sample Number:				291122006	291122007	291122008	291122009
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	<0.050	<0.050
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122006	291122007	291122008	291122009
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	<0.10	<0.10

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122010	291122011	291122012	291122013
Client Sample Reference:				CWM GW10	CWM GW12	LFG2	LFG6
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	6.8	6.9	8.9	6.6
INORG-L12	Ammonia	mg.l ⁻¹ as N	A	0.01	<0.01	<0.01	<0.01
INORG-L13	Chloride	mg.l ⁻¹	A	22.1	28.5	22.9	24.4
INORG-L09	Alkalinity	mg.l ⁻¹ as CaCO ₃	A	212	272	90.7	194
INORG-L18	Total Organic Carbon	mg.l ⁻¹ C	A	40.9	40.4	60.7	23.0
METALS-L	Sulphate	mg.l ⁻¹	A	78.6	29.8	81.4	51.4
INORG-L11	Total Oxidised Nitrogen	mg.l ⁻¹ as N	A	0.12	0.11	3.4	1.1
INORG-L08	Dissolved Oxygen	mg.l ⁻¹ O ₂	A	15.7	15.3	14.1	13.7
INORG-L02	Conductivity	μS.cm ⁻¹	A	495	503	370	431
INORG-L15	Fluoride	mg.l ⁻¹	A	0.07	0.15	0.45	0.24
METALS-L	Nickel	μg.l ⁻¹	A	<1.5	<1.5	<1.5	<1.5
1455	Cadmium	μg.l ⁻¹	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Copper	μg.l ⁻¹	A	1.4	1.2	3.2	3.1
METALS-L	Manganese	μg.l ⁻¹	A	123	<1.0	1.6	6.9
METALS-L	Iron	μg.l ⁻¹	A	9.6	20.2	111	252
METALS-L	Zinc	μg.l ⁻¹	A	<1.1	<1.1	<1.1	<1.1
METALS-L	Lead	μg.l ⁻¹	A	<4.1	4.3	8.8	12.3
METALS-L	Chromium	μg.l ⁻¹	A	1.1	7.6	1.3	<1.0
METALS-L	Sodium	mg.l ⁻¹	A	11.1	11.5	18.1	13.1
METALS-L	Potassium	mg.l ⁻¹	A	3.6	3.2	11.8	3.8
METALS-L	Calcium	mg.l ⁻¹	A	59.6	63.1	46.9	63.0
METALS-L	Magnesium	mg.l ⁻¹	A	22.8	21.8	5.1	10.5
1455	Mercury	μg.l ⁻¹	S-A	<0.05	<0.05	<0.05	<0.05
1455	Arsenic	μg.l ⁻¹	S-A	<0.20	<0.20	2.8	0.64
1455	Selenium	μg.l ⁻¹	S-A	<0.50	<0.50	3.4	1.3
1455	Antimony	μg.l ⁻¹	S-A	<0.50	<0.50	1.12	0.52
1455	Tellurium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1455	Thallium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1455	Uranium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0

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Report Date
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122010	291122011	291122012	291122013
Client Sample Reference:				CWM GW10	CWM GW12	LFG2	LFG6
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Naphthalene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	<0.20	<0.20	<0.20
ORG-L17	Mecoprop	µg.l ⁻¹	N	<0.1	<0.1	<0.1	<0.1
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	2.7
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Acenaphthylene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Fluorene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Phenanthrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122010	291122011	291122012	291122013
Client Sample Reference:				CWM GW10	CWM GW12	LFG2	LFG6
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122010	291122011	291122012	291122013
Client Sample Reference:				CWM GW10	CWM GW12	LFG2	LFG6
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	<0.050	<0.050
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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FAO: John Perkins

CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122010	291122011	291122012	291122013
Client Sample Reference:				CWM GW10	CWM GW12	LFG2	LFG6
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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Report Date
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122010	291122011	291122012	291122013
Client Sample Reference:				CWM GW10	CWM GW12	LFG2	LFG6
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	<0.10	<0.10

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122014	-	-	-
Client Sample Reference:				LFG12	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Groundwater	-	-	-
INORG-L01	pH	pH units	A	6.4	-	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as N	A	<0.01	-	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	22.6	-	-	-
INORG-L09	Alkalinity	mg.l ⁻¹ as CaCO ₃	A	164	-	-	-
INORG-L18	Total Organic Carbon	mg.l ⁻¹ C	A	25.1	-	-	-
METALS-L	Sulphate	mg.l ⁻¹	A	53.7	-	-	-
INORG-L11	Total Oxidised Nitrogen	mg.l ⁻¹ as N	A	0.38	-	-	-
INORG-L08	Dissolved Oxygen	mg.l ⁻¹ O ₂	A	14.4	-	-	-
INORG-L02	Conductivity	μS.cm ⁻¹	A	405	-	-	-
INORG-L15	Fluoride	mg.l ⁻¹	A	0.16	-	-	-
METALS-L	Nickel	μg.l ⁻¹	A	<1.5	-	-	-
1455	Cadmium	μg.l ⁻¹	S-A	<0.11	-	-	-
METALS-L	Copper	μg.l ⁻¹	A	1.1	-	-	-
METALS-L	Manganese	μg.l ⁻¹	A	<1.0	-	-	-
METALS-L	Iron	μg.l ⁻¹	A	15.5	-	-	-
METALS-L	Zinc	μg.l ⁻¹	A	<1.1	-	-	-
METALS-L	Lead	μg.l ⁻¹	A	<4.1	-	-	-
METALS-L	Chromium	μg.l ⁻¹	A	<1.0	-	-	-
METALS-L	Sodium	mg.l ⁻¹	A	15.7	-	-	-
METALS-L	Potassium	mg.l ⁻¹	A	2.1	-	-	-
METALS-L	Calcium	mg.l ⁻¹	A	50.4	-	-	-
METALS-L	Magnesium	mg.l ⁻¹	A	11.4	-	-	-
1455	Mercury	μg.l ⁻¹	S-A	<0.05	-	-	-
1455	Arsenic	μg.l ⁻¹	S-A	0.55	-	-	-
1455	Selenium	μg.l ⁻¹	S-A	1.1	-	-	-
1455	Antimony	μg.l ⁻¹	S-A	<0.50	-	-	-
1455	Tellurium	μg.l ⁻¹	S-N	<1.0	-	-	-
1455	Thallium	μg.l ⁻¹	S-N	<1.0	-	-	-
1455	Uranium	μg.l ⁻¹	S-N	<1.0	-	-	-

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Laboratory Sample Number:				291122014	-	-	-
Client Sample Reference:				LFG12	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Groundwater	-	-	-
ORG-L02	Naphthalene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	-	-	-
ORG-L17	Mecoprop	µg.l ⁻¹	N	<0.1	-	-	-
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Acenaphthylene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Acenaphthene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Fluorene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Phenanthrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Anthracene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Fluoranthene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Pyrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Chrysene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	N	<0.05	-	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122014	-	-	-
Client Sample Reference:				LFG12	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Groundwater	-	-	-
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Atraton	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Butylate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	-	-	-

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Laboratory Sample Number:				291122014	-	-	-
Client Sample Reference:				LFG12	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Groundwater	-	-	-
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	EPTC	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	MGK	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Molinate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Prometon	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Propazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Prophos	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Simazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	-	-	-
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	-	-	-
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	Bromomethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-

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Client: JPCE Ltd (SI Green)
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122014	-	-	-
Client Sample Reference:				LFG12	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Groundwater	-	-	-
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Benzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	-	-	-
1760	Toluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	-	-	-
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Styrene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	-	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122014	-	-	-
Client Sample Reference:				LFG12	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Groundwater	-	-	-
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	-	-	-
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	-	-	-
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	-	-	-
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	-	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122015	291122016	291122017	291122018
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L01	pH	pH units	A	7.3	7.5	7.8	7.8
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	175	519	292	320
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	1.7	2.6	2.9	0.6
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	14	17	10	11
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	58.8	214	99.4	111
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	<0.01	0.98	0.07	0.07
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	22.0	37.0	28.7	31.4
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	15.7	15.6	16.2	15.7
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.71	1.2	1.1	1.3
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	15.6	61.3	30.6	34.8
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	21.3	68.2	36.0	38.6
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.3	5.1	6.9	8.1
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	13.1	2.8	8.7	8.3
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	183	195	332	393
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.9	7.7	<4.1	5.2
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	2.6	11.9	5.1	5.6
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	8.8	17.2	23.4	22.9
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	5.6	<1.5	1.6	<1.5
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	2.1	9.3	4.0	4.7
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	12.7	16.8	14.8	15.7
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	29.3	<1.1	13.7	7.8
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	9.6	56.8	30.0	60.4
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	0.86	0.03	0.26
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	<0.2	<0.2	<0.2
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	15.1	22.5	15.1	14.1
1455	Arsenic	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.20	0.81	0.89	0.96
1455	Selenium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.50	1.6	1.4	1.1
1455	Antimony	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.50	0.97	<0.50	<0.50

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Report Date
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122015	291122016	291122017	291122018
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
ORG-L02	Naphthalene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L17	Mecoprop	µg.l ⁻¹	N	<0.1	<0.1	<0.1	<0.1
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	2.8	2.7	<0.50	2.6
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Acenaphthylene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Fluorene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Phenanthrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	N	<0.05	<0.05	<0.05	<0.05

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Laboratory Sample Number:				291122015	291122016	291122017	291122018
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20

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Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	<0.050	<0.050
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122015	291122016	291122017	291122018
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122015	291122016	291122017	291122018
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				28/11/2022	28/11/2022	28/11/2022	28/11/2022
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	<0.10	<0.10
1455	Tellurium	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1455	Thallium	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1455	Uranium	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0

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Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122019	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.6	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	470	-	-	-
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	5.1	-	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	3	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	217	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.02	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	27.7	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	13.5	-	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	1.3	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	48.9	-	-	-
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	76.1	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	3.0	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	250	-	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	10.1	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	3.7	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.0	-	-	-
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	5.0	-	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	14.2	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	-	-	-
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	54.4	-	-	-
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	-	-	-
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	0.27	-	-	-
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	18.7	-	-	-
1455	Arsenic	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	1.1	-	-	-
1455	Selenium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	0.97	-	-	-
1455	Antimony	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.50	-	-	-

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Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122019	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Surface Water	-	-	-
ORG-L02	Naphthalene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L17	Mecoprop	µg.l ⁻¹	N	<0.1	-	-	-
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	2.5	-	-	-
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Acenaphthylene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Acenaphthene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Fluorene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Phenanthrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Anthracene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Fluoranthene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Pyrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Chrysene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	N	<0.05	-	-	-
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	N	<0.05	-	-	-

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Laboratory Sample Number:				291122019	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Surface Water	-	-	-
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Atraton	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Butylate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	-	-	-

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Laboratory Sample Number:				291122019	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Surface Water	-	-	-
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	EPTC	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	MGK	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Molinate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Prometon	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Propazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Prophos	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Simazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	-	-	-
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	-	-	-
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	Bromomethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-

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CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122019	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Surface Water	-	-	-
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Benzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	-	-	-
1760	Toluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	-	-	-
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Styrene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	-	-	-

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Laboratory Sample Number:				291122019	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				28/11/2022	-	-	-
Sample Matrix:				Surface Water	-	-	-
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	-	-	-
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	-	-	-
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	-	-	-
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	-	-	-
1455	Tellurium	µg.l ⁻¹	S-N	<1.0	-	-	-
1455	Thallium	µg.l ⁻¹	S-N	<1.0	-	-	-
1455	Uranium	µg.l ⁻¹	S-N	<1.0	-	-	-

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Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122020	291122021	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				28/11/2022	28/11/2022	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L01	pH	pH units	N	8.0	7.1	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	N	480	12621	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	N	20	820	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.03	0.63	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	N	30.3	3020	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.97	0.58	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	N	39.9	115	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	N	111	42.7	-	-
1455	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.11	<0.11	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	N	71.6	78.5	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	N	6.8	25.3	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	N	7.4	6.0	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	N	135	4800	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	N	<4.1	<4.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	N	6.2	64.2	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	N	68.6	561	-	-
1455	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.5	35.7	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	N	10.6	351	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	N	18.0	1060	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.1	3.8	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	N	141	2800	-	-
1455	Arsenic	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	3.0	12	-	-
1455	Selenium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	1.3	3.2	-	-
1455	Antimony	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	1.5	9.7	-	-
1455	Tellurium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<1.0	<1.0	-	-
1455	Thallium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<1.0	<1.0	-	-
1455	Uranium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<1.0	<1.0	-	-

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CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122020	291122021	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				28/11/2022	28/11/2022	-	-
Sample Matrix:				Leachate	Leachate	-	-
ORG-L02	Naphthalene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	<0.20	-	-
ORG-L17	Mecoprop	µg.l ⁻¹	N	<0.1	<0.1	-	-
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	Acenaphthylene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Acenaphthene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	Fluorene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	Phenanthrene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Anthracene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Fluoranthene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Pyrene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Chrysene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	N	<0.05	<0.05	-	-
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	N	<0.05	<0.05	-	-

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Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122020	291122021	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				28/11/2022	28/11/2022	-	-
Sample Matrix:				Leachate	Leachate	-	-
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122020	291122021	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				28/11/2022	28/11/2022	-	-
Sample Matrix:				Leachate	Leachate	-	-
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	-	-
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-

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Client: JPCE Ltd (SI Green)
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122020	291122021	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				28/11/2022	28/11/2022	-	-
Sample Matrix:				Leachate	Leachate	-	-
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	-	-
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	-	-
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	-	-
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	-	-
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	-	-
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-

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Report Date
08th January 2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				291122020	291122021	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				28/11/2022	28/11/2022	-	-
Sample Matrix:				Leachate	Leachate	-	-
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	-	-
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	-	-
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	-	-

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CERTIFICATE OF ANALYSIS 6315
Results of analysis of 16 samples received
on the 28/11/2022

Report Date
08th January 2023

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of PAHs in water by GC-MS (In-house method)	ORG-L02	None
Determination of Speciated Phenols in water by GC-MS (In-house method)	ORG-L02	None
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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CERTIFICATE OF ANALYSIS 6315
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Report Date
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Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025
Determination of VOCs in waters by GC-MS (Sub-Contracted method)	1760	None
Determination of PCBs in waters by GC-MS (Sub-Contracted method)	1815	None
Determination of fluoride in water by discrete analyser (In-house method)	INORG-L15	ISO 17025
Determination of Organochlorine Pesticides in Water by GC-MS (Sub-Contracted method)	1820, 1830, 1840	None
Determination of mecoprop in waters by GS-MS (In-house method)	ORG-L17	None

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

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A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

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John Perkins

SI Green
Site 1
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Llantrisant

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ExCAL House
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Carmarthenshire
SA18 3SJ

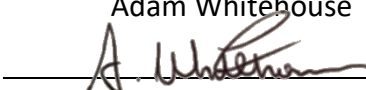
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 6363

Project/Site name:	SI Green	Samples Taken:	14/12/2022
Quotation Number:	DS150606	Samples Received:	14/12/2022
Order Number:		Date Instructed:	14/12/2022
Sample Matrix:	Surface water	Analysis Complete:	21/12/2022
		Report Issued:	08/01/2023
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



4303

Client: SI Green
FAO: John Perkins

CERTIFICATE OF ANALYSIS 6363
Results of analysis of 1 samples received
on the 14/12/2022

Report Date
08/01/2023

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				151222003	-	-	-
Client Sample Reference:				CWM SO2	-	-	-
Sample Date:				14/12/2022	-	-	-
Sample Matrix:				Surface water	-	-	-
INORG-L01	pH	pH units	A	7.0	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	714	-	-	-
INORG-L09	Alkalinity	mg.l^{-1} as HCO_3	A	273	-	-	-
INORG-L11	Total Oxidised Nitrogen	mg.l^{-1} as N	A	0.68	-	-	-
INORG-L12	Ammonia	mg.l^{-1} as NH_4	A	0.25	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	66.1	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	0.02	-	-	-
INORG-L31	Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L08	Dissolved Oxygen	mg.l^{-1} as O_2	A	13.0	-	-	-
INORG-L10	Total Suspended Solids	mg.l^{-1}	A	8.8	-	-	-
INORG-L18	Total Organic Carbon	mg.l^{-1} as O_2	A	48.4	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	70.5	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	3.1	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	1.6	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
1455	Cadmium	$\mu\text{g.l}^{-1}$	A	<0.11	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	108	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	154	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	104	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	20.6	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	11.8	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	10.9	-	-	-
1455	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-

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CERTIFICATE OF ANALYSIS 6363
Results of analysis of 1 samples received
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Report Date
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Analytical Method	Method Code	Accreditation Status
Determination of Cyanide in water by discrete analyser (Sub-contracted method)	1300	ISO 17025
Determination of Metals in water by ICP-MS (Sub-contracted method)	1455	ISO 17025
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Conductivity in water by ECM discrete analyser (In-house method)	INORG-L02	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of suspended solids in water by gravimetric analysis (In-house method)	INORG-L10	ISO 17025
Determination of Nitrate in water by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser Photometer (In-house method)	INORG-L11	ISO 17025
Determination of ammonia in waters by Discrete Analyser (In-house method)	INORG-L12	ISO 17025
Determination of Chloride in water by Discrete Analyser (In-house method)	INORG-L13	ISO 17025
Determination of total organic carbon in waters by photometer (In-house method)	INORG-L18	ISO 17025
Determination of Phenol in water by Discrete Analyser (In-house method)	INORG-L20	ISO 17025
Determination of metals in waters by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of PAHs in water by GC-MS (In-house method)	ORG-L02	ISO 17025

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Report Date
08/01/2023

Disposal Times:

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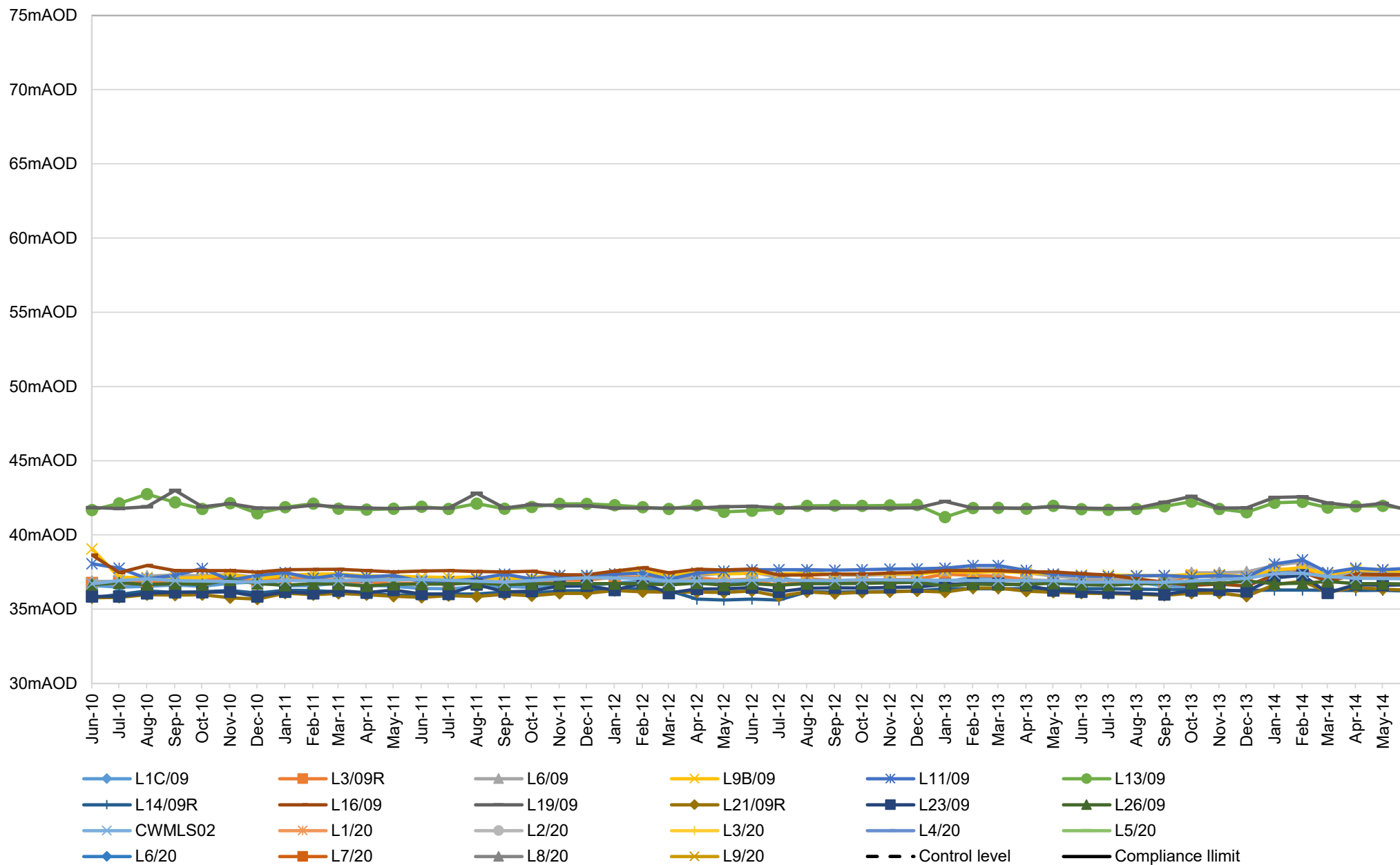
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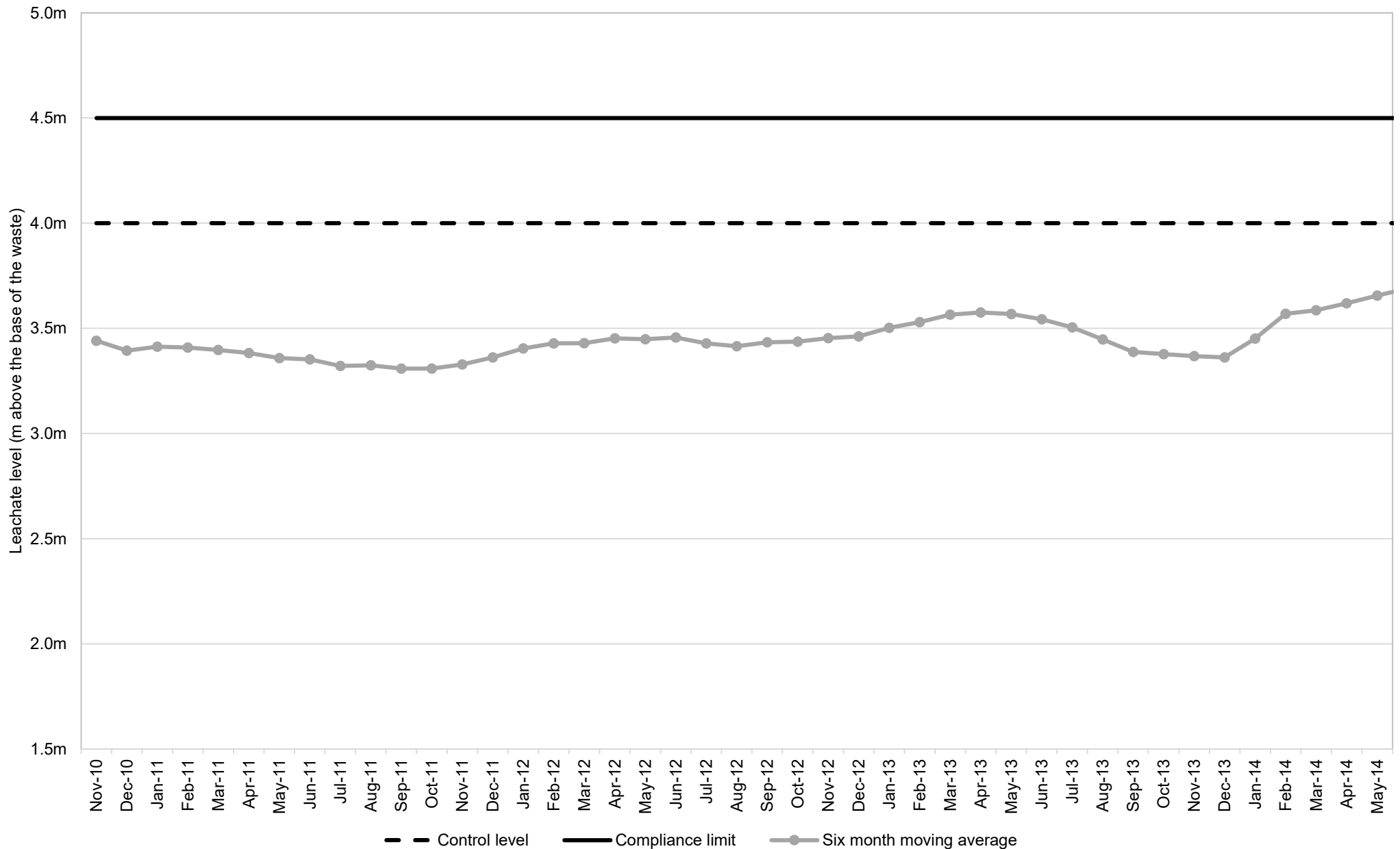


APPENDIX C
LEACHATE LEVEL GRAPHS

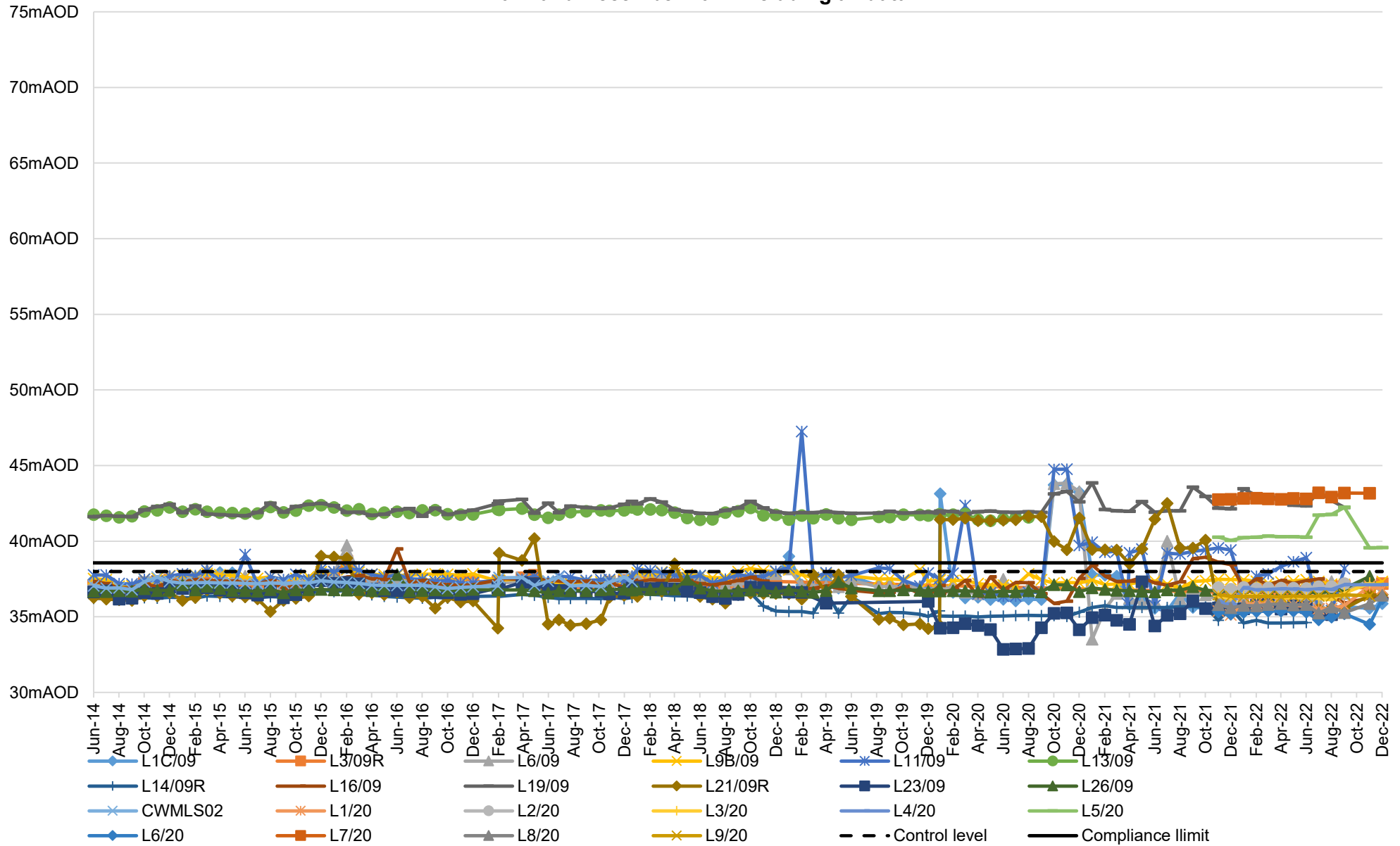
Leachate levels recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2010 and May 2014 including all data



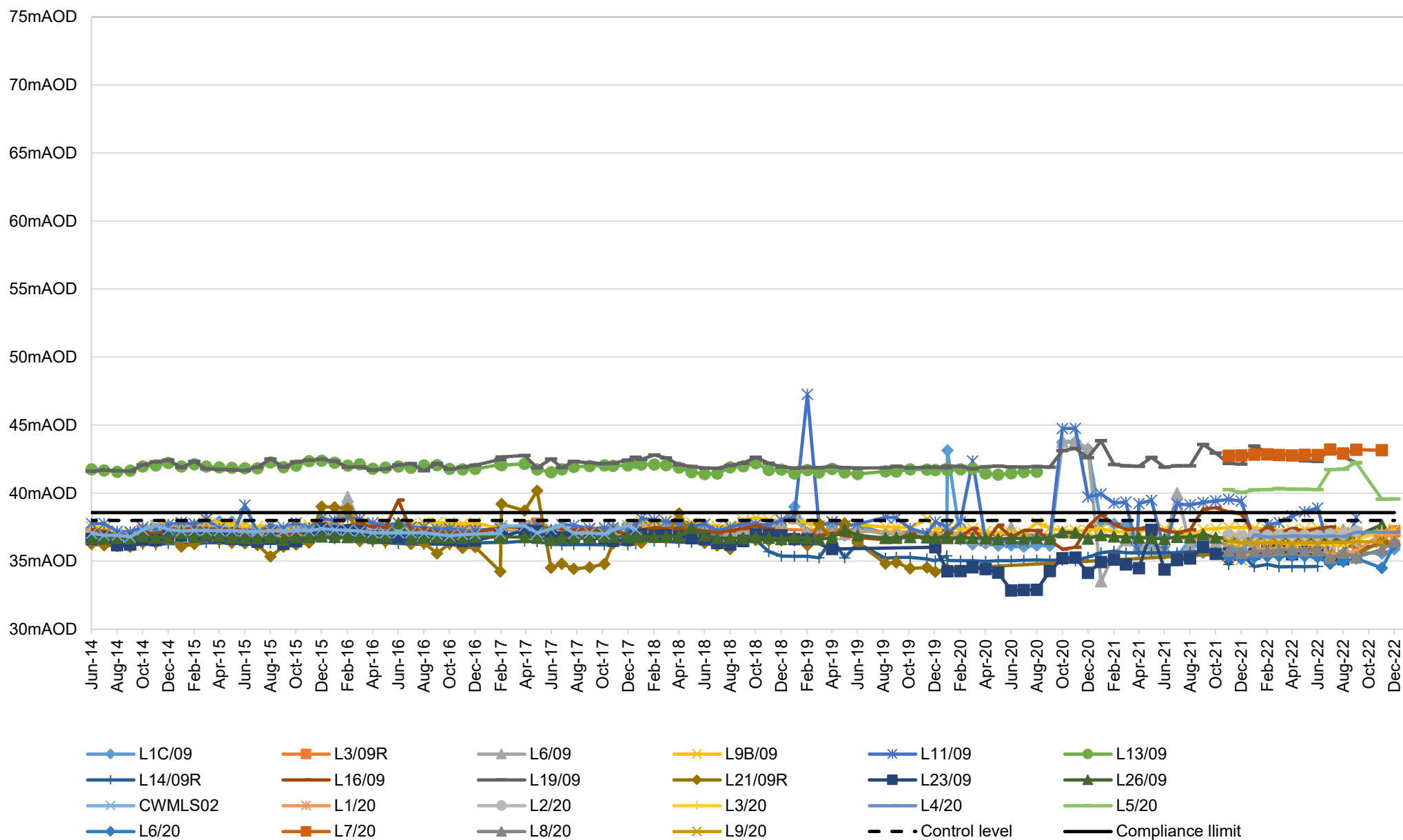
**Six month moving average for the leachate level recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry
Landfill between June 2010 to May 2014 (revised version of graph presented at Appendix HRA 2 of the 2014 HRA)**



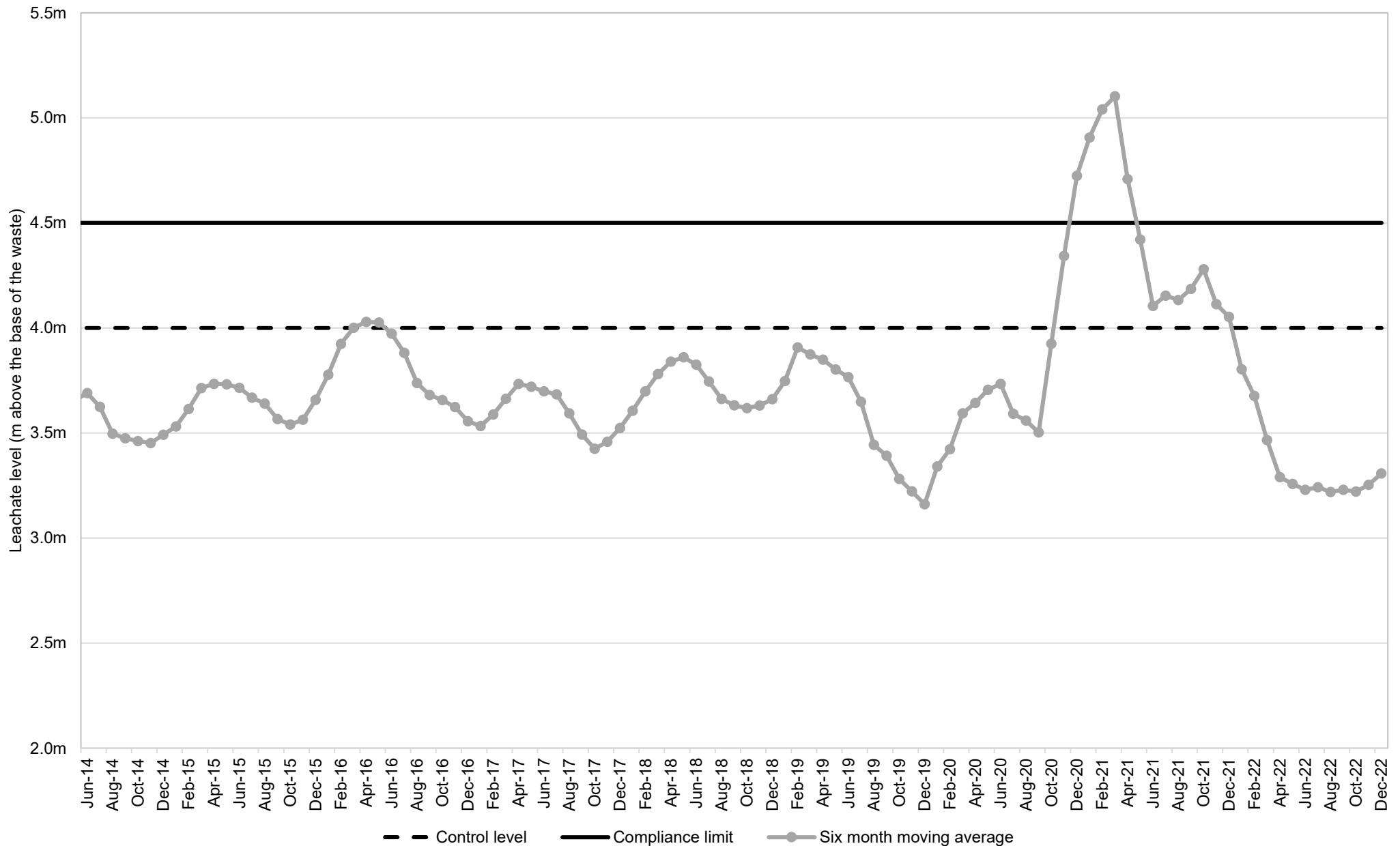
Leachate levels recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2014 and December 2022 including all data



Leachate levels recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2014 and December 2022 omitting spurious data for well L21 from January 2020 until the well was replaced in November 2021



**Six month moving average for the leachate level recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry
Landfill between June 2014 and December 2022 including all data**



Six month moving average for the leachate level recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2014 and December 2022 omitting spurious data for well L21 from January 2020 until the well was replaced in November 2021

