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**Attention:** Oliver Wendland

## CERTIFICATE OF ANALYSIS

**Date of report Generation:** 08 January 2020  
**Customer:** Endeavour Drilling  
**Sample Delivery Group (SDG):** 191220-100  
**Your Reference:** J4175  
**Location:** Moathouse Farm, Rusper Rd, Horsham  
**Report No:** 536737

**This report has been revised and directly supersedes 536648 in its entirety.**

We received 10 samples on Friday December 20, 2019 and 10 of these samples were scheduled for analysis which was completed on Wednesday January 08, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

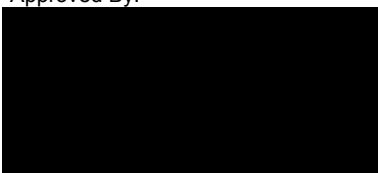
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



**Sonia McWhan**

Operations Manager





## CERTIFICATE OF ANALYSIS

Validated

SDG: 191220-100

Client Reference: J4175

Report Number: 536737

Location: Moathouse Farm, Rusper Rd

Order Number: 13458AP

Superseded Report: 536648

### Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-----------|--------------|
| 21418585         | TP230                | E2       | 0.50      | 18/12/2019   |
| 21418584         | TP240                | E1       | 0.10      | 18/12/2019   |
| 21418587         | TP242                | E1       | 0.10      | 18/12/2019   |
| 21418574         | TP244                | E1       | 0.30      | 18/12/2019   |
| 21418589         | TP248                | E2       | 0.60      | 18/12/2019   |
| 21418576         | TP250                | E2       | 0.50      | 18/12/2019   |
| 21418583         | TP254                | E1       | 0.20      | 18/12/2019   |
| 21418578         | TP255                | E2       | 0.40      | 18/12/2019   |
| 21418580         | TP256                | E2       | 0.30      | 18/12/2019   |
| 21418581         | TP257                | E1       | 0.20      | 18/12/2019   |

#### Maximum Sample/Coolbox Temperature (°C) :

10

#### ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.



# CERTIFICATE OF ANALYSIS

Validated

SDG: 191220-100  
Location: Moathouse Farm, Rusper Rd

Client Reference: J4175  
Order Number: 13458AP

Report Number: 536737  
Superseded Report: 536648

## Results Legend

**X** Test  
**N** No Determination Possible

## Sample Types -

S - Soil/Solid  
UNS - Unspecified Solid  
GW - Ground Water  
SW - Surface Water  
LE - Land Leachate  
PL - Prepared Leachate  
PR - Process Water  
SA - Saline Water  
TE - Trade Effluent  
TS - Treated Sewage  
US - Untreated Sewage  
RE - Recreational Water  
DW - Drinking Water Non-regulatory  
UNL - Unspecified Liquid  
SL - Sludge  
G - Gas  
OTH - Other

| Results Legend                     | Lab Sample No(s) |                      | Customer Sample Reference |      | AGS Reference                |   | Depth (m) |  | Container |  | Sample Type |  |
|------------------------------------|------------------|----------------------|---------------------------|------|------------------------------|---|-----------|--|-----------|--|-------------|--|
|                                    | 21418583         | TP254                | E1                        | 0.20 | 1kg TUB with Handle (ALE260) | S |           |  |           |  |             |  |
|                                    | 21418576         | TP250                | E2                        | 0.50 | 60g VOC (ALE215)             | S |           |  |           |  |             |  |
|                                    | 21418589         | TP248                | E2                        | 0.60 | 250g Amber Jar (ALE210)      | S |           |  |           |  |             |  |
|                                    | 21418574         | TP244                | E1                        | 0.30 | 1kg TUB with Handle (ALE260) | S |           |  |           |  |             |  |
|                                    | 21418587         | TP242                | E1                        | 0.10 | 60g VOC (ALE215)             | S |           |  |           |  |             |  |
|                                    |                  |                      |                           |      |                              |   |           |  |           |  |             |  |
| Acid herbicides*                   | All              | NDPs: 0<br>Tests: 3  |                           |      |                              |   |           |  |           |  |             |  |
| Anions by Kone (soil)              | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| Asbestos ID in Solid Samples       | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| EPH CWG GC (S)                     | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| GRO by GC-FID (S)                  | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| Hexavalent Chromium (s)            | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| Metals in solid samples by OES     | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| OC OP Pesticides and Triazine Herb | All              | NDPs: 0<br>Tests: 3  |                           |      |                              |   |           |  |           |  |             |  |
| PAH by GCMS                        | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| pH                                 | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| Phenols by HPLC (S)                | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| Sample description                 | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| Total Organic Carbon               | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| TPH CWG GC (S)                     | All              | NDPs: 0<br>Tests: 10 |                           |      |                              |   |           |  |           |  |             |  |
| Triazine Herbicides (S)*           | All              | NDPs: 0<br>Tests: 3  |                           |      |                              |   |           |  |           |  |             |  |





|          |       |    |      |                              |   |  |   |
|----------|-------|----|------|------------------------------|---|--|---|
| 21418581 | TP257 | E1 | 0.20 | 60g VOC (ALE215)             | S |  | X |
|          |       |    |      | 250g Amber Jar (ALE210)      | S |  |   |
|          |       |    |      | 1kg TUB with Handle (ALE260) | S |  |   |
| 21418580 | TP256 | E2 | 0.30 | 60g VOC (ALE215)             | S |  | X |
|          |       |    |      | 250g Amber Jar (ALE210)      | S |  |   |
|          |       |    |      | 1kg TUB with Handle (ALE260) | S |  |   |
| 21418578 | TP255 | E2 | 0.40 | 60g VOC (ALE215)             | S |  | X |
|          |       |    |      | 250g Amber Jar (ALE210)      | S |  |   |
|          |       |    |      | 1kg TUB with Handle (ALE260) | S |  |   |
| 21418583 | TP254 | E1 | 0.20 | 60g VOC (ALE215)             | S |  | X |
|          |       |    |      | 250g Amber Jar (ALE210)      | S |  |   |
|          |       |    |      | 1kg TUB with Handle (ALE260) | S |  |   |



## CERTIFICATE OF ANALYSIS

Validated

**SDG:** 191220-100  
**Location:** Moathouse Farm, Rusper Rd**Client Reference:** J4175  
**Order Number:** 13458AP**Report Number:** 536737  
**Superseded Report:** 536648

### Sample Descriptions

#### Grain Sizes

|           |          |      |                 |        |             |        |            |             |       |
|-----------|----------|------|-----------------|--------|-------------|--------|------------|-------------|-------|
| very fine | <0.063mm | fine | 0.063mm - 0.1mm | medium | 0.1mm - 2mm | coarse | 2mm - 10mm | very coarse | >10mm |
|-----------|----------|------|-----------------|--------|-------------|--------|------------|-------------|-------|

| Lab Sample No(s) | Customer Sample Ref. | Depth (m) | Colour      | Description | Inclusions | Inclusions 2 |
|------------------|----------------------|-----------|-------------|-------------|------------|--------------|
| 21418585         | TP230                | 0.50      | Light Brown | Silt Loam   | Stones     | Vegetation   |
| 21418584         | TP240                | 0.10      | Light Brown | Loamy Sand  | Vegetation | None         |
| 21418587         | TP242                | 0.10      | Light Brown | Silt Loam   | Stones     | Vegetation   |
| 21418574         | TP244                | 0.30      | Light Brown | Silt Loam   | Stones     | Vegetation   |
| 21418589         | TP248                | 0.60      | Light Brown | Silt Loam   | Stones     | Vegetation   |
| 21418576         | TP250                | 0.50      | Light Brown | Clay        | None       | None         |
| 21418583         | TP254                | 0.20      | Light Brown | Loamy Sand  | Stones     | Vegetation   |
| 21418578         | TP255                | 0.40      | Light Brown | Clay        | Vegetation | None         |
| 21418580         | TP256                | 0.30      | Light Brown | Clay Loam   | Stones     | None         |
| 21418581         | TP257                | 0.20      | Light Brown | Loamy Sand  | Vegetation | Stones       |

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



# CERTIFICATE OF ANALYSIS

Validated

SDG: 191220-100 Client Reference: J4175 Report Number: 536737  
Location: Moathouse Farm, Rusper R Order Number: 13458AP Superseded Report: 536648

| Results Legend                                   |                                                                                                                                                                  |           | Customer Sample Ref. | TP230          | TP240          | TP242          | TP244          | TP248          | TP250          |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| #                                                | ISO17025 accredited.                                                                                                                                             |           |                      |                |                |                |                |                |                |
| M                                                | mCERTS accredited.                                                                                                                                               |           |                      |                |                |                |                |                |                |
| sq                                               | Aqueous / settled sample.                                                                                                                                        |           |                      |                |                |                |                |                |                |
| dis.filt                                         | Dissolved / filtered sample.                                                                                                                                     |           |                      |                |                |                |                |                |                |
| tot.unfilt                                       | Total / unfiltered sample.                                                                                                                                       |           |                      |                |                |                |                |                |                |
| *                                                | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |           |                      |                |                |                |                |                |                |
| **                                               | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |           |                      |                |                |                |                |                |                |
| (F)                                              | Trigger breach confirmed                                                                                                                                         |           |                      |                |                |                |                |                |                |
| 1-3*5@                                           | Sample deviation (see appendix)                                                                                                                                  |           |                      |                |                |                |                |                |                |
| Component                                        | LOD/Units                                                                                                                                                        | Method    | Depth (m)            |                |                |                |                |                |                |
| Moisture Content Ratio (% of as received sample) | %                                                                                                                                                                | PM024     | Sample Type          | 0.50           | 0.10           | 0.10           | 0.30           | 0.60           | 0.50           |
| 2,4,5-Trichlorophenol (2,4,5-T)*                 | <0.01 mg/kg                                                                                                                                                      | SUB       | Date Sampled         | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) |
| 2,4,5-TP (Fenoprop)*                             | <0.01 mg/kg                                                                                                                                                      | SUB       | Sample Time          | 18/12/2019     | 18/12/2019     | 18/12/2019     | 18/12/2019     | 18/12/2019     | 18/12/2019     |
| 2,4-D*                                           | <0.01 mg/kg                                                                                                                                                      | SUB       | Date Received        | 20/12/2019     | 20/12/2019     | 20/12/2019     | 20/12/2019     | 20/12/2019     | 20/12/2019     |
| 2,4-DB*                                          | <0.01 mg/kg                                                                                                                                                      | SUB       | SDG Ref              | 191220-100     | 191220-100     | 191220-100     | 191220-100     | 191220-100     | 191220-100     |
| 2,4-Dichloroprop (2,4 DP)*                       | <0.01 mg/kg                                                                                                                                                      | SUB       | Lab Sample No.(s)    | 21418585       | 21418584       | 21418587       | 21418574       | 21418589       | 21418576       |
| 4-Chlorophenoxyacetic acid (4-CPA)*              | <0.01 mg/kg                                                                                                                                                      | SUB       | AGS Reference        | E2             | E1             | E1             | E1             | E2             | E2             |
| Acifluorfen*                                     | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Bentazone*                                       | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Bromoxynil*                                      | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Dicamba*                                         | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Diclofop*                                        | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Dinoseb*                                         | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| DNOC*                                            | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Fluroxypyr*                                      | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Ioxynil*                                         | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| 2-methyl-4-Chlorophenoxyacetic acid (MCPA)*      | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| 4-(4-Chloro-o-tolylxy) butyric acid (MCPB)*      | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Mecoprop (MCP)*                                  | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Propoxycarbazone-sodium*                         | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Triclopyr*                                       | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Triclosan*                                       | <0.01 mg/kg                                                                                                                                                      | SUB       |                      |                |                |                |                |                |                |
| Phenol                                           | <0.01 mg/kg                                                                                                                                                      | TM062 (S) |                      | <0.01          | <0.01          | <0.01          | <0.01          | <0.01          | <0.01          |
| Cresols                                          | <0.01 mg/kg                                                                                                                                                      | TM062 (S) |                      | M              | M              | M              | M              | M              | M              |
| Xylenols                                         | <0.015 mg/kg                                                                                                                                                     | TM062 (S) |                      | M              | M              | M              | M              | M              | M              |
| 2,3,5-Trimethylphenol                            | <0.01 mg/kg                                                                                                                                                      | TM062 (S) |                      | M              | M              | M              | M              | M              | M              |
| 2-Isopropylphenol                                | <0.015 mg/kg                                                                                                                                                     | TM062 (S) |                      | M              | M              | M              | M              | M              | M              |
| Phenols, Total Detected 5 speciated              | <0.06 mg/kg                                                                                                                                                      | TM062 (S) |                      | M              | M              | M              | M              | M              | M              |
| Soil Organic Matter (SOM)                        | <0.35 %                                                                                                                                                          | TM132     |                      | 0.693          | 3.78           | 2.62           | 2.74           | 0.707          | 0.452          |
| pH                                               | 1 pH Units                                                                                                                                                       | TM133     |                      | #              | #              | #              | #              | #              | #              |
| Chromium, Hexavalent                             | <0.6 mg/kg                                                                                                                                                       | TM151     |                      | #              | #              | #              | #              | #              | #              |
| Arsenic                                          | <0.6 mg/kg                                                                                                                                                       | TM181     |                      | 14.9           | 12.4           | 15.8           | 9.49           | 12.3           | 6.02           |
| Cadmium                                          | <0.02 mg/kg                                                                                                                                                      | TM181     |                      | M              | M              | M              | M              | M              | M              |
|                                                  |                                                                                                                                                                  |           |                      | M              | M              | M              | M              | M              | M              |





# CERTIFICATE OF ANALYSIS

Validated

SDG: 191220-100 Client Reference: J4175 Report Number: 536737  
Location: Moathouse Farm, Rusper R Order Number: 13458AP Superseded Report: 536648

| Results Legend                                   |                                                                                                                                                                  | Customer Sample Ref. | TP254  | TP255  | TP256  | TP257  |  |  |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------|--------|--------|--------|--|--|
| #                                                | ISO17025 accredited.                                                                                                                                             |                      |        |        |        |        |  |  |
| M                                                | mCERTS accredited.                                                                                                                                               |                      |        |        |        |        |  |  |
| sq                                               | Aqueous / settled sample.                                                                                                                                        |                      |        |        |        |        |  |  |
| dis.filt                                         | Dissolved / filtered sample.                                                                                                                                     |                      |        |        |        |        |  |  |
| tot.unfilt                                       | Total / unfiltered sample.                                                                                                                                       |                      |        |        |        |        |  |  |
| *                                                | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |                      |        |        |        |        |  |  |
| **                                               | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |                      |        |        |        |        |  |  |
| (F)                                              | Trigger breach confirmed                                                                                                                                         |                      |        |        |        |        |  |  |
| 1-3*§@                                           | Sample deviation (see appendix)                                                                                                                                  |                      |        |        |        |        |  |  |
| Component                                        | LOD/Units                                                                                                                                                        | Method               |        |        |        |        |  |  |
| Moisture Content Ratio (% of as received sample) | %                                                                                                                                                                | PM024                | 23     | 22     | 25     | 27     |  |  |
| 2,4,5-Trichlorophenol (2,4,5-T)*                 | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| 2,4,5-TP (Fenoprop)*                             | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| 2,4-D*                                           | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| 2,4-DB*                                          | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| 2,4-Dichloroprop (2,4 DP)*                       | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| 4-Chlorophenoxyacetic acid (4-CPA)*              | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Acifluorfen*                                     | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Bentazone*                                       | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Bromoxynil*                                      | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Dicamba*                                         | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Diclofop*                                        | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Dinoseb*                                         | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| DNOC*                                            | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Fluroxypyr*                                      | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Ioxynil*                                         | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| 2-methyl-4-Chlorophenoxyacetic acid (MCPA)*      | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| 4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*     | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Mecoprop (MCP)*                                  | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Propoxycarbazone-sodium*                         | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Triclopyr*                                       | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Triclosan*                                       | <0.01 mg/kg                                                                                                                                                      | SUB                  |        |        |        | <0.01  |  |  |
| Phenol                                           | <0.01 mg/kg                                                                                                                                                      | TM062 (S)            | <0.01  | <0.01  | <0.01  | <0.01  |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| Cresols                                          | <0.01 mg/kg                                                                                                                                                      | TM062 (S)            | <0.01  | <0.01  | <0.01  | 0.0136 |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| Xylenols                                         | <0.015 mg/kg                                                                                                                                                     | TM062 (S)            | <0.015 | <0.015 | <0.015 | <0.015 |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| 2,3,5-Trimethylphenol                            | <0.01 mg/kg                                                                                                                                                      | TM062 (S)            | <0.01  | <0.01  | <0.01  | <0.01  |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| 2-Isopropylphenol                                | <0.015 mg/kg                                                                                                                                                     | TM062 (S)            | <0.015 | <0.015 | <0.015 | <0.015 |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| Phenols, Total Detected 5 speciated              | <0.06 mg/kg                                                                                                                                                      | TM062 (S)            | <0.06  | <0.06  | <0.06  | <0.06  |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| Soil Organic Matter (SOM)                        | <0.35 %                                                                                                                                                          | TM132                | 2.29   | 1.05   | 2.76   | 2.4    |  |  |
|                                                  |                                                                                                                                                                  |                      | #      | #      | #      | #      |  |  |
| pH                                               | 1 pH Units                                                                                                                                                       | TM133                | 6.68   | 8.06   | 7.84   | 7.99   |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| Chromium, Hexavalent                             | <0.6 mg/kg                                                                                                                                                       | TM151                | <3     | <0.6   | <3     | <3     |  |  |
|                                                  |                                                                                                                                                                  |                      | #      | #      | #      | #      |  |  |
| Arsenic                                          | <0.6 mg/kg                                                                                                                                                       | TM181                | 12.2   | 9.49   | 9.97   | 11.2   |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |
| Cadmium                                          | <0.02 mg/kg                                                                                                                                                      | TM181                | 0.501  | 0.19   | 0.393  | 0.335  |  |  |
|                                                  |                                                                                                                                                                  |                      | M      | M      | M      | M      |  |  |





# CERTIFICATE OF ANALYSIS

Validated

**SDG:** 191220-100  
**Location:** Moathouse Farm, Rusper Rd

**Client Reference:** J4175  
**Order Number:** 13458AP

**Report Number:** 536737  
**Superseded Report:** 536648

## OC OP Pesticides and Triazine Herb

| Results Legend                              |                                                                                                                                                                  | Customer Sample Ref.                                                                                                      | TP242 | TP244 | TP257 |  |  |  |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|--|--|--|
| #                                           | ISO17025 accredited.                                                                                                                                             | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |       |       |       |  |  |  |
| M                                           | mCERTS accredited.                                                                                                                                               |                                                                                                                           |       |       |       |  |  |  |
| sq                                          | Aqueous / settled sample.                                                                                                                                        |                                                                                                                           |       |       |       |  |  |  |
| dis.filt                                    | Dissolved / filtered sample.                                                                                                                                     |                                                                                                                           |       |       |       |  |  |  |
| tot.unfilt                                  | Total / unfiltered sample.                                                                                                                                       |                                                                                                                           |       |       |       |  |  |  |
| *                                           | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |                                                                                                                           |       |       |       |  |  |  |
| **                                          | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |                                                                                                                           |       |       |       |  |  |  |
| (F)                                         | Trigger breach confirmed                                                                                                                                         |                                                                                                                           |       |       |       |  |  |  |
| 1-3*5@                                      | Sample deviation (see appendix)                                                                                                                                  |                                                                                                                           |       |       |       |  |  |  |
| Component                                   | LOD/Units                                                                                                                                                        | Method                                                                                                                    |       |       |       |  |  |  |
| Dichlorvos                                  | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Mevinphos                                   | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Tecnazene                                   | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Hexachlorobenzene                           | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Trifluralin                                 | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Phorate                                     | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| alpha-Hexachlorocyclohexane (HCH)           | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Quintozone (PCNB)                           | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Diazinon                                    | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Triallate                                   | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Etrimphos                                   | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| gamma-Hexachlorocyclohexane (HCH / Lindane) | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Disulfoton                                  | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Propetamphos                                | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Heptachlor                                  | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Chlorpyrifos methyl                         | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Dimethoate                                  | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Aldrin                                      | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Chlorothalonil                              | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Pirimiphos-methyl                           | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Telodrin                                    | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| beta-Hexachlorocyclohexane (HCH)            | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Chlorpyrifos                                | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Methyl parathion                            | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Isodrin                                     | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| delta-Hexachlorocyclohexane (HCH)           | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Malathion                                   | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Fenthion                                    | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Fenitrothion                                | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Heptachlor epoxide                          | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Triadimefon                                 | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Pendimethalin                               | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |
| Parathion                                   | <50 µg/kg                                                                                                                                                        | TM073                                                                                                                     | <50   | <50   | <50   |  |  |  |



















# CERTIFICATE OF ANALYSIS

Validated

**SDG:** 191220-100  
**Location:** Moathouse Farm, Rusper Rd

**Client Reference:** J4175  
**Order Number:** 13458AP

**Report Number:** 536737  
**Superseded Report:** 536648

## Asbestos Identification - Solid Samples

### Results Legend

# ISO17025 accredited.  
M mCERTS accredited.  
\* Subcontracted test.  
(F) Trigger breach confirmed  
1-5&\*&@ Sample deviation (see appendix)

|                                                                                                                           |                                                                                                           | Date of Analysis | Analysed By          | Comments | Amosite<br>(Brown)<br>Asbestos | Chrysotile<br>(White)<br>Asbestos | Crocidolite<br>(Blue) Asbestos | Fibrous<br>Actinolite | Fibrous<br>Anthophyllite | Fibrous<br>Tremolite | Non-Asbestos<br>Fibre |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------|----------------------|----------|--------------------------------|-----------------------------------|--------------------------------|-----------------------|--------------------------|----------------------|-----------------------|
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP230E2<br>0.50<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418585<br>TM048 | 30/12/2019       | Marcin<br>Magdziarek | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP240E1<br>0.10<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418584<br>TM048 | 30/12/2019       | Marcin<br>Magdziarek | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP242E1<br>0.10<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418587<br>TM048 | 30/12/2019       | Marcin<br>Magdziarek | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP244E1<br>0.30<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418574<br>TM048 | 24/12/2019       | James<br>Richards    | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP248E2<br>0.60<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418589<br>TM048 | 30/12/2019       | Lucy Caroe           | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Detected              |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP250E2<br>0.50<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418576<br>TM048 | 24/12/19         | Andrzej<br>Ferfecki  | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP254E1<br>0.20<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418583<br>TM048 | 30/12/2019       | Lucy Caroe           | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP255E2<br>0.40<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418578<br>TM048 | 24/12/19         | Andrzej<br>Ferfecki  | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |



## CERTIFICATE OF ANALYSIS

SDG: 191220-100

Client Reference: J4175

Report Number: 536737

Location: Moathouse Farm, Rusper Rd

Order Number: 13458AP

Superseded Report: 536648

|                                                                                                                           |                                                                                                           | Date of Analysis | Analysed By          | Comments | Amosite<br>(Brown)<br>Asbestos | Chrysotile<br>(White)<br>Asbestos | Crocidolite<br>(Blue) Asbestos | Fibrous<br>Actinolite | Fibrous<br>Anthophyllite | Fibrous<br>Tremolite | Non-Asbestos<br>Fibre |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------|----------------------|----------|--------------------------------|-----------------------------------|--------------------------------|-----------------------|--------------------------|----------------------|-----------------------|
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP256E2<br>0.30<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418580<br>TM048 | 27/12/2019       | Marcin<br>Magdziarek | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |
| Cust. Sample Ref.<br>Depth (m)<br>Sample Type<br>Date Sampled<br>Date Received<br>SDG<br>Original Sample<br>Method Number | TP257E1<br>0.20<br>SOLID<br>18/12/2019 00:00:00<br>20/12/2019 06:00:00<br>191220-100<br>21418581<br>TM048 | 30/12/2019       | Marcin<br>Magdziarek | -        | Not Detected<br>(#)            | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected<br>(#)   | Not Detected<br>(#)      | Not Detected<br>(#)  | Not Detected          |



## CERTIFICATE OF ANALYSIS

Validated

SDG: 191220-100

Client Reference: J4175

Report Number: 536737

Location: Moathouse Farm, Rusper Rd

Order Number: 13458AP

Superseded Report: 536648

### Table of Results - Appendix

| Method No | Reference                                                                                                                   | Description                                                                                           |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| PM024     | Modified BS 1377                                                                                                            | Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material |
| SUB       |                                                                                                                             | Subcontracted Test                                                                                    |
| TM048     | HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures                                      | Identification of Asbestos in Bulk Material                                                           |
| TM062 (S) | National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9 | Determination of Phenols in Soils by HPLC                                                             |
| TM073     | MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A                                                    | Determination of organochlorine and organophosphorous pesticides by GCMS                              |
| TM089     | Modified: US EPA Methods 8020 & 602                                                                                         | Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)                       |
| TM116     | Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602                                                                    | Determination of Volatile Organic Compounds by Headspace / GC-MS                                      |
| TM132     | In - house Method                                                                                                           | ELTRA CS800 Operators Guide                                                                           |
| TM133     | BS 1377: Part 3 1990;BS 6068-2.5                                                                                            | Determination of pH in Soil and Water using the GLpH pH Meter                                         |
| TM151     | Method 3500D, AWWA/APHA, 20th Ed., 1999                                                                                     | Determination of Hexavalent Chromium using Kone analyser                                              |
| TM181     | US EPA Method 6010B                                                                                                         | Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES                                      |
| TM218     | Shaker extraction - EPA method 3546.                                                                                        | The determination of PAH in soil samples by GC-MS                                                     |
| TM243     |                                                                                                                             | Mixed Anions In Soils By Kone                                                                         |
| TM414     | Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria                            | Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID                   |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).



# CERTIFICATE OF ANALYSIS

Validated

SDG: 191220-100  
Location: Moathouse Farm, Rusper Rd

Client Reference: J4175  
Order Number: 13458AP

Report Number: 536737  
Superseded Report: 536648

## Test Completion Dates

Lab Sample No(s)  
Customer Sample Ref.

AGS Ref.  
Depth  
Type

|                                    | 21418585       | 21418584       | 21418587       | 21418574       | 21418589       | 21418576       | 21418583       | 21418578       | 21418580       | 21418581       |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                                    | TP230          | TP240          | TP242          | TP244          | TP248          | TP250          | TP254          | TP255          | TP256          | TP257          |
|                                    | E2             | E1             | E1             | E1             | E2             | E2             | E1             | E2             | E2             | E1             |
|                                    | 0.50           | 0.10           | 0.10           | 0.30           | 0.60           | 0.50           | 0.20           | 0.40           | 0.30           | 0.20           |
|                                    | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) | Soil/Solid (S) |
| Acid herbicides*                   |                |                | 08-Jan-2020    | 08-Jan-2020    |                |                |                |                |                | 08-Jan-2020    |
| Anions by Kone (soil)              | 31-Dec-2019    | 31-Dec-2019    | 31-Dec-2019    | 31-Dec-2019    | 31-Dec-2019    | 31-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 31-Dec-2019    | 30-Dec-2019    |
| Asbestos ID in Solid Samples       | 30-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 24-Dec-2019    | 30-Dec-2019    | 24-Dec-2019    | 30-Dec-2019    | 24-Dec-2019    | 27-Dec-2019    | 30-Dec-2019    |
| EPH CWG GC (S)                     | 02-Jan-2020    | 04-Jan-2020    | 04-Jan-2020    | 06-Jan-2020    | 02-Jan-2020    | 06-Jan-2020    | 04-Jan-2020    | 06-Jan-2020    | 06-Jan-2020    | 02-Jan-2020    |
| GRO by GC-FID (S)                  | 27-Dec-2019    | 24-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 24-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    |
| Hexavalent Chromium (s)            | 03-Jan-2020    | 03-Jan-2020    | 27-Dec-2019    | 03-Jan-2020    | 27-Dec-2019    | 03-Jan-2020    | 03-Jan-2020    | 27-Dec-2019    | 03-Jan-2020    | 03-Jan-2020    |
| Metals in solid samples by OES     | 02-Jan-2020    | 31-Dec-2019    | 02-Jan-2020    | 31-Dec-2019    | 31-Dec-2019    | 31-Dec-2019    | 02-Jan-2020    | 31-Dec-2019    | 02-Jan-2020    | 02-Jan-2020    |
| OC OP Pesticides and Triazine Herb |                |                | 31-Dec-2019    | 31-Dec-2019    |                |                |                |                |                | 31-Dec-2019    |
| PAH by GCMS                        | 30-Dec-2019    | 31-Dec-2019    | 30-Dec-2019    | 31-Dec-2019    | 30-Dec-2019    | 27-Dec-2019    | 31-Dec-2019    | 31-Dec-2019    | 02-Jan-2020    | 30-Dec-2019    |
| pH                                 | 29-Dec-2019    | 29-Dec-2019    | 29-Dec-2019    | 30-Dec-2019    | 29-Dec-2019    | 30-Dec-2019    | 29-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 29-Dec-2019    |
| Phenols by HPLC (S)                | 27-Dec-2019    | 27-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 27-Dec-2019    | 30-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 30-Dec-2019    |
| Sample description                 | 21-Dec-2019    | 20-Dec-2019    | 21-Dec-2019    | 21-Dec-2019    | 21-Dec-2019    | 21-Dec-2019    | 20-Dec-2019    | 21-Dec-2019    | 21-Dec-2019    | 21-Dec-2019    |
| Total Organic Carbon               | 31-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 31-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    | 30-Dec-2019    |
| TPH CWG GC (S)                     | 02-Jan-2020    | 04-Jan-2020    | 04-Jan-2020    | 06-Jan-2020    | 02-Jan-2020    | 06-Jan-2020    | 04-Jan-2020    | 06-Jan-2020    | 06-Jan-2020    | 02-Jan-2020    |
| Triazine Herbicides (S)*           |                |                | 08-Jan-2020    | 08-Jan-2020    |                |                |                |                |                | 08-Jan-2020    |
| VOC MS (S)                         | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 24-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    | 27-Dec-2019    |

## Certificate of Analysis

**Report No.:** 19-89627-2

**Issue No.:** 2

**Date of Issue** 07/01/2020

Customer Details: ALS Life Sciences Limited, Unit7-8, Hawarden Business Park, Manor Road, Hawarden, Deeside, Flintshire, CH5 3US

Customer Contact: Carrie Foster

Customer Order No.: 191220-100

Customer Reference: 191220-100

Quotation Reference: 191111/01

Description: 3 soil samples

Date Received: 24/12/2019

Date Started: 02/01/2020

Date Completed: 03/01/2020

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: This report replaces issue 1 in its entirety



**Approved By:** Matthew Hickson, Laboratory Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

This certificate shall not be reproduced except in full without the prior written approval of the laboratory.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

Results on an Interim Report are not dry-weight corrected.

Where the laboratory is not responsible for the sampling, results apply to the sample(s) as they were received.

## Results Summary

Report No.: 19-89627-2

Customer Reference: 191220-100

Customer Order No: 191220-100

|                    |            |            |            |
|--------------------|------------|------------|------------|
| Customer Sample No | 21420164   | 21420091   | 21419978   |
| Customer Sample ID | TP242      | TP244      | TP257      |
| RPS Sample No      | 425186     | 425187     | 425188     |
| Sample Type        | SOIL       | SOIL       | SOIL       |
| Sample Depth (m)   | 0.1m       | 0.3m       | 0.2m       |
| Sampling Date      | 18/12/2019 | 18/12/2019 | 18/12/2019 |

| Determinand   | CAS No    | Codes | SOP      | Units | RL   |        |        |        |
|---------------|-----------|-------|----------|-------|------|--------|--------|--------|
| atrazine      | 1912-24-9 | N     | in house | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 |
| prometryn     | 7287-19-6 | N     | 346      | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 |
| propazine     | 139-40-2  | N     | 346      | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 |
| simazine      | 122-34-9  | N     | 346      | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 |
| terbutylazine | 5915-41-3 | N     | 346      | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 |
| terbutryn     | 886-50-0  | N     | 346      | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 |
| trietazine    | 1912-26-1 | N     | 346      | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 |

## Deviating Samples

**Report No.:** 19-89627-2

**Customer Reference:** 191220-100

**Customer Order No:** 191220-100

Our policy on Deviating Samples has been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling. Samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be compromised.

Where no sampling date was supplied, samples have been declared to be deviating. If the date can be supplied, results may be reissued if assessed not deviating.

Where the sample container used was unsuitable or broken, the sample is flagged as deviating and re-sampling/re-submission may be required.

| RPS No. | Customer No. | Customer ID | Date Sampled | Containers Received      | Deviating | Reason for Deviation |
|---------|--------------|-------------|--------------|--------------------------|-----------|----------------------|
| 425186  | 21420164     |             | 18/12/2019   | 100ml clear glass bottle | No        |                      |
| 425187  | 21420091     |             | 18/12/2019   | 100ml clear glass bottle | No        |                      |
| 425188  | 21419978     |             | 18/12/2019   | 100ml clear glass bottle | No        |                      |

**Report No.: 19-89627-2**

| Key Code         | Description                                                                                         |
|------------------|-----------------------------------------------------------------------------------------------------|
| U                | UKAS Accredited Test - UKAS accreditation is only implied if the report carries the UKAS logo       |
| F                | UKAS Flexible Scope Test                                                                            |
| M                | MCERTS Accredited Test - MCERTS accreditation is only implied if the report carries the MCERTS logo |
| N                | Not Accredited Test                                                                                 |
| O                | Marine Management Organisation (MMO) Validated                                                      |
| S                | Subcontracted to approved laboratory                                                                |
| US               | Subcontracted to approved laboratory UKAS Accredited for the test                                   |
| MS               | Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test                            |
| SI               | Subcontracted to internal RPS Group laboratory                                                      |
| USI              | Subcontracted to internal RPS Group laboratory UKAS Accredited for the test                         |
| MSI              | Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test                  |
| I/S (in results) | Insufficient Sample                                                                                 |
| U/S (in results) | Unsuitable Sample                                                                                   |
| S/C (in results) | See Comments                                                                                        |
| ND (in results)  | Not Detected                                                                                        |
| DW (in units)    | Results are expressed on a dry weight basis                                                         |

| Sample Type    | Sample Retention and Disposal Period                   |
|----------------|--------------------------------------------------------|
| Foodstuff      | 1 month (if frozen) from the issue date of this report |
| Waters         | 2 weeks from the issue date of this report             |
| Other Liquids  | 1 month from the issue date of this report             |
| Solids / Soils | 1 month from the issue date of this report             |
| Sediments      | 1 month from the issue date of this report             |

Note: Sample retention may be subject to agreement with the customer for particular projects

Where the dry solids value of a sample is low (<50%), reporting limits are automatically raised for all determinants analysed on an as-received basis.

| Soil Typing | Description                 |
|-------------|-----------------------------|
| Type 1      | Clay - Brown                |
| Type 2      | Clay - Grey/Black           |
| Type 3      | Sand                        |
| Type 4      | Top Soil (Standard)         |
| Type 5      | Top Soil (High Peat)        |
| Type 6      | Made Ground (>50% Clay)     |
| Type 7      | Made Ground (>50% Sand)     |
| Type 8      | Made Ground (>50% Top Soil) |
| Type X      | Other                       |



## CERTIFICATE OF ANALYSIS

|              |                                                                                             |                       |                                                               |
|--------------|---------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------|
| Work Order   | : PR2000308                                                                                 | Issue Date            | : 08-Jan-2020                                                 |
| Customer     | : ALS Life Sciences Ltd                                                                     | Laboratory            | : ALS Czech Republic, s.r.o.                                  |
| Contact      | : ALS Hawarden Reporting                                                                    | Contact               | : Client Service                                              |
| Address      | : Unit 7-8 Hawarden Business Park<br>Manor Road, Hawarden<br>CH5 3US Deeside United Kingdom | Address               | : Na Harfe 336/9 Prague 9 - Vysocany<br>190 00 Czech Republic |
| E-mail       | : euhdsubconresults@ALSGlobal.com                                                           | E-mail                | : customer.support@alsglobal.com                              |
| Telephone    | : ----                                                                                      | Telephone             | : +420 226 226 228                                            |
| Project      | : 191220-100                                                                                | Page                  | : 1 of 2                                                      |
| Order number | : 191220-100                                                                                | Date Samples Received | : 03-Jan-2020                                                 |
|              |                                                                                             | Quote number          | : PR2018ALSAL-GB0004<br>(CZ-256-18-0022)                      |
| Site         | : ----                                                                                      | Date of test          | : 03-Jan-2020 - 08-Jan-2020                                   |
| Sampled by   | : client                                                                                    | QC Level              | : ALS CR Standard Quality Control<br>Schedule                 |

### General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

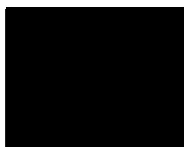
The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

### Responsible for accuracy

Testing Laboratory No. 1163  
Accredited by CAI according to  
CSN EN ISO/IEC 17025:2018

#### Signatories

Zdeněk Jiráček



#### Position

Environmental Business Unit  
Manager





## Analytical Results

Sub-Matrix: SOIL

Client sample ID

Laboratory sample ID

Client sampling date / time

| Sub-Matrix: SOIL                                    |            |        | Client sample ID |         | 21420154<br>TP242 |         | 21420085<br>TP244 |         | 21419966<br>TP257 |  |
|-----------------------------------------------------|------------|--------|------------------|---------|-------------------|---------|-------------------|---------|-------------------|--|
| Laboratory sample ID<br>Client sampling date / time |            |        |                  |         | PR2000308-001     |         | PR2000308-002     |         | PR2000308-003     |  |
|                                                     |            |        |                  |         | 18-Dec-2019 00:00 |         | 18-Dec-2019 00:00 |         | 18-Dec-2019 00:00 |  |
| Parameter                                           | Method     | LOR    | Unit             | Result  | MU                | Result  | MU                | Result  | MU                |  |
| Physical Parameters                                 |            |        |                  |         |                   |         |                   |         |                   |  |
| Dry matter @ 105°C                                  | S-DRY-GRCI | 0.10   | %                | 75.2    | ± 6.0%            | 76.3    | ± 6.0%            | 73.0    | ± 6.0%            |  |
| Pesticides                                          |            |        |                  |         |                   |         |                   |         |                   |  |
| 2.4.5-T                                             | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| 2.4.5-TP                                            | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| 2.4-D                                               | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| 2.4-DB                                              | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| 2.4-DP (isomers)                                    | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| 4-CPP                                               | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Bentazone                                           | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Dinoseb                                             | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Fluroxypyr                                          | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| MCPA                                                | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| MCPB                                                | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| MCPB (isomers)                                      | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Acifluorfen                                         | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Bromoxynil                                          | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| DNOC                                                | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Dicamba                                             | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Diclofop                                            | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Ioxynil                                             | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Propoxycarbazone-sodium                             | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Triclopyr                                           | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |
| Triclosan                                           | S-PESLMSA1 | 0.0100 | mg/kg DW         | <0.0100 | ----              | <0.0100 | ----              | <0.0100 | ----              |  |

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

### The end of result part of the certificate of analysis

## Brief Method Summaries

| Analytical Methods                                                                     | Method Descriptions                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00 |                                                                                                                                                                                                                                                        |
| S-DRY-GRCI                                                                             | CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values. |
| S-PESLMSA1                                                                             | CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.                                                                                             |

A \*\* symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



# CERTIFICATE OF ANALYSIS

|                  |                                |                          |         |                           |        |
|------------------|--------------------------------|--------------------------|---------|---------------------------|--------|
| <b>SDG:</b>      | 191220-100                     | <b>Client Reference:</b> | J4175   | <b>Report Number:</b>     | 536737 |
| <b>Location:</b> | athouse Farm, Rusper Rd, Horsh | <b>Order Number:</b>     | 13458AP | <b>Superseded Report:</b> | 536648 |

## Appendix

## General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH<sub>4</sub> by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

### 18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

|   |                                                                             |
|---|-----------------------------------------------------------------------------|
| 1 | Container with Headspace provided for volatiles analysis                    |
| 2 | Incorrect container received                                                |
| 3 | Deviation from method                                                       |
| § | Sampled on date not provided                                                |
| ♦ | Sample holding time exceeded in laboratory                                  |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

### 19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

#### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbestos Type         | Common Name    |
|-----------------------|----------------|
| Chrysotile            | White Asbestos |
| Amosite               | Brown Asbestos |
| Crocidolite           | Blue Asbestos  |
| Fibrous Actinolite    | -              |
| Fibrous Anthophyllite | -              |
| Fibrous Tremolite     | -              |

#### Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

#### Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2107).

**Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.**

**The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.**



Unit 7-8 Hawarden Business Park  
Manor Road (off Manor Lane)  
Hawarden  
Deeside  
CH5 3US

Tel: (01244) 528700

Fax: (01244) 528701

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

Endeavour Drilling  
Aldgate Tower  
2 Leman Street  
London  
E1 8FA

**Attention:** Oliver Wendland

## CERTIFICATE OF ANALYSIS

|                                     |                                    |
|-------------------------------------|------------------------------------|
| <b>Date of report Generation:</b>   | 28 January 2020                    |
| <b>Customer:</b>                    | Endeavour Drilling                 |
| <b>Sample Delivery Group (SDG):</b> | 200118-47                          |
| <b>Your Reference:</b>              | J4175 Stantec/ L & G               |
| <b>Location:</b>                    | Moathouse Farm, Rusper Rd, Horsham |
| <b>Report No:</b>                   | 538707                             |

We received 16 samples on Saturday January 18, 2020 and 11 of these samples were scheduled for analysis which was completed on Tuesday January 28, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

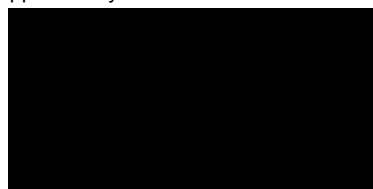
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



**Sonia McWhan**

Operations Manager



## CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47

Client Reference: J4175 Stantec/ L & G

Report Number: 538707

Location: Moathouse Farm, Rusper Rd

Order Number:

Superseded Report:

### Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-----------|--------------|
| 21512438         | BH201                |          |           | 17/01/2020   |
| 21512439         | BH203                |          |           | 17/01/2020   |
| 21512440         | BH204                |          |           | 17/01/2020   |
| 21512441         | BH205                |          |           | 17/01/2020   |
| 21512442         | BH206                |          |           | 17/01/2020   |
| 21512443         | BH208                |          |           | 17/01/2020   |
| 21512452         | RIVER SAMPLE 1       |          |           | 17/01/2020   |
| 21512453         | RIVER SAMPLE 2       |          |           | 17/01/2020   |
| 21512454         | RIVER SAMPLE 3       |          |           | 17/01/2020   |
| 21512455         | RIVER SAMPLE 4       |          |           | 17/01/2020   |
| 21512444         | WS201                |          |           | 17/01/2020   |
| 21512449         | WS206                |          |           | 17/01/2020   |
| 21512445         | WS202A               |          |           | 17/01/2020   |
| 21512446         | WS204A               |          |           | 17/01/2020   |
| 21512447         | WS205A               |          |           | 17/01/2020   |
| 21512451         | WS207A               |          |           | 17/01/2020   |

#### Maximum Sample/Coolbox Temperature (°C) :

##### ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

#### 8.2

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.





# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 538707  
Location: Moathouse Farm, Rusper R Order Number: Superseded Report:

| Results Legend             |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      | BH204 | BH205 | BH208 | RIVER SAMPLE 1 | RIVER SAMPLE 2 | RIVER SAMPLE 3 |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|----------------|----------------|----------------|
| #                          | ISO17025 accredited.                                                                                                                                             |        |                                                                                                                           |       |       |       |                |                |                |
| M                          | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |       |       |       |                |                |                |
| sq                         | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |       |       |       |                |                |                |
| dis.filt                   | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |       |       |       |                |                |                |
| tot.unfilt                 | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |       |       |       |                |                |                |
| *                          | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |       |       |       |                |                |                |
| **                         | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |       |       |       |                |                |                |
| (F)                        | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |       |       |       |                |                |                |
| 1-3*§§                     | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |       |       |       |                |                |                |
| Component                  | LOD/Units                                                                                                                                                        | Method | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |       |       |       |                |                |                |
| Alkalinity, Total as CaCO3 | <2 mg/l                                                                                                                                                          | TM043  |                                                                                                                           | 362   | 134   | 90    | 90             | 95             | <2             |
| Conductivity @ 20 deg.C    | <0.005 mS/cm                                                                                                                                                     | TM120  |                                                                                                                           | 0.821 | 0.383 | 0.33  | 0.238          | 0.232          | 1.5            |
| pH                         | <1 pH Units                                                                                                                                                      | TM256  |                                                                                                                           | 7.57  | 7.04  | 6.66  | 7.39           | 7.5            | 2.53           |
| Trifluralin                | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.02 | <0.01          | <0.02          | <0.02          |
| alpha-HCH                  | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| gamma-HCH (Lindane)        | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Heptachlor                 | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.02 | <0.01          | <0.02          | <0.02          |
| Aldrin                     | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| beta-HCH                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Isodrin                    | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| delta-HCH                  | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Heptachlor epoxide         | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| o,p'-DDE                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Endosulphan I              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| trans-Chlordane            | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| cis-Chlordane              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| p,p'-DDE                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Dieldrin                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| o,p'-DDD (TDE)             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Endrin                     | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.02 | <0.01          | <0.02          | <0.02          |
| o,p'-DDT                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.02 | <0.01          | <0.02          | <0.02          |
| p,p'-DDD (TDE)             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Endosulphan II             | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.02 | <0.02 | <0.02          | <0.02          | <0.02          |
| p,p'-DDT                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.04 | <0.01          | <0.04          | <0.04          |
| o,p'-Methoxychlor          | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.03 | <0.01          | <0.03          | <0.03          |
| p,p'-Methoxychlor          | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.02 | <0.08 | <0.02          | <0.08          | <0.08          |
| Endosulphan Sulphate       | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.02 | <0.02 | <0.02          | <0.02          | <0.02          |
| Permethrin I               | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.02 | <0.01          | <0.02          | <0.02          |
| Permethrin II              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| 1,3,5-Trichlorobenzene     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| Hexachlorobutadiene        | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| 1,2,4-Trichlorobenzene     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |
| 1,2,3-Trichlorobenzene     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |       | <0.01 | <0.01 | <0.01          | <0.01          | <0.01          |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 538707  
Location: Moathouse Farm, Rusper Rd Order Number: Superseded Report:

| Results Legend      |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      |  | BH204             | BH205             | BH208             | RIVER SAMPLE 1    | RIVER SAMPLE 2    | RIVER SAMPLE 3    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| #                   | ISO17025 accredited.                                                                                                                                             |        | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |  | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) |
| M                   | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |  | 17/01/2020        | 17/01/2020        | 17/01/2020        | 17/01/2020        | 17/01/2020        | 17/01/2020        |
| aq                  | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |  |                   |                   |                   |                   |                   |                   |
| diss.filt           | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |  |                   |                   |                   |                   |                   |                   |
| tot.unfilt          | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |  |                   |                   |                   |                   |                   |                   |
| *                   | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |  |                   |                   |                   |                   |                   |                   |
| **                  | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |  | 18/01/2020        | 18/01/2020        | 18/01/2020        | 18/01/2020        | 18/01/2020        | 18/01/2020        |
| (F)                 | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |  | 200118-47         | 200118-47         | 200118-47         | 200118-47         | 200118-47         | 200118-47         |
| 1-3*5@              | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |  | 21512440          | 21512441          | 21512443          | 21512452          | 21512453          | 21512454          |
| Component           | LOD/Units                                                                                                                                                        | Method |                                                                                                                           |  |                   |                   |                   |                   |                   |                   |
| Dichlorvos          | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Dichlobenil         | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Mevinphos           | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Tecnazene           | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Hexachlorobenzene   | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Demeton-S-methyl    | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Phorate             | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Diazinon            | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Triallate           | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Atrazine            | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Simazine            | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Disulfoton          | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Propetamphos        | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Chlorpyrifos-methyl | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Dimethoate          | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Pirimiphos-methyl   | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Chlorpyrifos        | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Methyl Parathion    | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Malathion           | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Fenthion            | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Fenitrothion        | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Triadimefon         | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Pendimethalin       | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Parathion           | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Chlorfenvinphos     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| trans-Chlordane     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| cis-Chlordane       | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Ethion              | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Carbophenothion     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Triazophos          | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Phosalone           | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Azinphos methyl     | <0.02 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                   | <0.06             | <0.06             | <0.06             | <0.06             | <0.06             |





# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 538707  
Location: Moathouse Farm, Rusper Rd Order Number: Superseded Report:

| Results Legend             |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      | RIVER SAMPLE 4 | WS206 | WS202A | WS204A | WS205A |  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|----------------|-------|--------|--------|--------|--|
| #                          | ISO17025 accredited.                                                                                                                                             |        |                                                                                                                           |                |       |        |        |        |  |
| M                          | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |                |       |        |        |        |  |
| sq                         | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |                |       |        |        |        |  |
| dis.filt                   | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |                |       |        |        |        |  |
| tot.unfilt                 | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |                |       |        |        |        |  |
| *                          | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |                |       |        |        |        |  |
| **                         | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |                |       |        |        |        |  |
| (F)                        | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |                |       |        |        |        |  |
| 1-3*5@                     | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
| Component                  | LOD/Units                                                                                                                                                        | Method | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |                |       |        |        |        |  |
| Alkalinity, Total as CaCO3 | <2 mg/l                                                                                                                                                          | TM043  |                                                                                                                           | 70             | 307   | 240    | 168    | 210    |  |
| Conductivity @ 20 deg.C    | <0.005 mS/cm                                                                                                                                                     | TM120  |                                                                                                                           | 0.239          | 1.11  | 0.433  | 2.1    | 0.274  |  |
| pH                         | <1 pH Units                                                                                                                                                      | TM256  |                                                                                                                           | 7.67           | 6.55  | 8.21   | 6.41   | 5.93   |  |
| Trifluralin                | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| alpha-HCH                  | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| gamma-HCH (Lindane)        | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Heptachlor                 | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Aldrin                     | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| beta-HCH                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Isodrin                    | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| delta-HCH                  | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Heptachlor epoxide         | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| o,p'-DDE                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Endosulphan I              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| trans-Chlordane            | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| cis-Chlordane              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| p,p'-DDE                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Dieldrin                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| o,p'-DDD (TDE)             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Endrin                     | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| o,p'-DDT                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| p,p'-DDD (TDE)             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Endosulphan II             | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| p,p'-DDT                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.04          |       |        |        |        |  |
| o,p'-Methoxychlor          | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.03          |       |        |        |        |  |
| p,p'-Methoxychlor          | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.08          |       |        |        |        |  |
| Endosulphan Sulphate       | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Permethrin I               | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Permethrin II              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| 1,3,5-Trichlorobenzene     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Hexachlorobutadiene        | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.01          |       |        |        |        |  |
| 1,2,4-Trichlorobenzene     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.01          |       |        |        |        |  |
| 1,2,3-Trichlorobenzene     | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.01          |       |        |        |        |  |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 538707  
Location: Moathouse Farm, Rusper Rd Order Number: Superseded Report:

| Results Legend      |                                                                                                                                                                  | Customer Sample Ref.                                                                                                      | RIVER SAMPLE 4 | WS206 | WS202A | WS204A | WS205A |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------|-------|--------|--------|--------|
| #                   | ISO17025 accredited.                                                                                                                                             | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |                |       |        |        |        |
| M                   | mCERTS accredited.                                                                                                                                               |                                                                                                                           |                |       |        |        |        |
| aq                  | Aqueous / settled sample.                                                                                                                                        |                                                                                                                           |                |       |        |        |        |
| diss.filt           | Dissolved / filtered sample.                                                                                                                                     |                                                                                                                           |                |       |        |        |        |
| tot.unfilt          | Total / unfiltered sample.                                                                                                                                       |                                                                                                                           |                |       |        |        |        |
| *                   | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |                                                                                                                           |                |       |        |        |        |
| **                  | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |                                                                                                                           |                |       |        |        |        |
| (F)                 | Trigger breach confirmed                                                                                                                                         |                                                                                                                           |                |       |        |        |        |
| 1-3*5@              | Sample deviation (see appendix)                                                                                                                                  |                                                                                                                           |                |       |        |        |        |
| Component           | LOD/Units                                                                                                                                                        | Method                                                                                                                    |                |       |        |        |        |
| Dichlorvos          | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Dichlobenil         | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Mevinphos           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Tecnazene           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Hexachlorobenzene   | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Demeton-S-methyl    | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Phorate             | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Diazinon            | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Triallate           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Atrazine            | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Simazine            | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Disulfoton          | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Propetamphos        | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.01          |       |        |        |        |
| Chlorpyrifos-methyl | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Dimethoate          | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Pirimiphos-methyl   | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Chlorpyrifos        | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Methyl Parathion    | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Malathion           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Fenthion            | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Fenitrothion        | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Triadimefon         | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Pendimethalin       | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Parathion           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Chlorfenvinphos     | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| trans-Chlordane     | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| cis-Chlordane       | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Ethion              | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Carbophenothion     | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Triazophos          | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Phosalone           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.02          |       |        |        |        |
| Azinphos methyl     | <0.02 µg/l                                                                                                                                                       | TM344                                                                                                                     | <0.06          |       |        |        |        |





## CERTIFICATE OF ANALYSIS

Validated

**SDG:** 200118-47 **Client Reference:** J4175 Stantec/ L & G **Report Number:** 538707  
**Location:** Moathouse Farm, Rusper Rd **Order Number:** **Superseded Report:**

### Notification of NDPs (No determination possible)

Date Received : 18/01/2020 11:37:06

| Sample No | Customer Sample Ref. | Depth (m) | Test                           | Comment                          |
|-----------|----------------------|-----------|--------------------------------|----------------------------------|
| 21512440  | BH204                |           | Pesticides (Suite I) by GCMS   | Sample unsuitable for extraction |
| 21512440  | BH204                |           | Pesticides (Suite II) by GCMS  | Sample unsuitable for extraction |
| 21512440  | BH204                |           | Pesticides (Suite III) by GCMS | Sample unsuitable for extraction |



## CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47

Client Reference: J4175 Stantec/ L &amp; G

Report Number: 538707

Location: Moathouse Farm, Rusper Rd

Order Number:

Superseded Report:

### Table of Results - Appendix

| Method No | Reference                                                                                                                                                   | Description                                                         |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| TM043     | Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984                                                                                             | Determination of alkalinity in aqueous samples                      |
| TM120     | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970                                                                                              | Determination of Electrical Conductivity using a Conductivity Meter |
| TM256     | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter   |
| TM343     | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)                                                                 | Determination of Selected Pesticides (Suite I) in Liquids by GCMS   |
| TM344     | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)                                                                 | Determination of selected pesticides (Suite II) by GCMS             |
| TM345     | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)                                                                 | Determination of selected pesticides (Suite III) by GCMS            |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).



Validated

# CERTIFICATE OF ANALYSIS

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 538707  
 Location: Moathouse Farm, Rusper Rd Order Number: Superseded Report:

## Test Completion Dates

| Lab Sample No(s)                | 21512440     | 21512441     | 21512443     | 21512452       | 21512453       | 21512454       | 21512455       | 21512449     | 21512445     | 21512446     |
|---------------------------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|--------------|--------------|--------------|
| Customer Sample Ref.            | BH204        | BH205        | BH208        | RIVER SAMPLE 1 | RIVER SAMPLE 2 | RIVER SAMPLE 3 | RIVER SAMPLE 4 | WS206        | WS202A       | WS204A       |
| AGS Ref.                        |              |              |              |                |                |                |                |              |              |              |
| Depth                           |              |              |              |                |                |                |                |              |              |              |
| Type                            | Ground Water | Ground Water | Ground Water | Ground Water   | Ground Water   | Ground Water   | Ground Water   | Ground Water | Ground Water | Ground Water |
| Alkalinity as CaCO <sub>3</sub> | 23-Jan-2020  | 23-Jan-2020  | 24-Jan-2020  | 21-Jan-2020    | 21-Jan-2020    | 21-Jan-2020    | 21-Jan-2020    | 23-Jan-2020  | 21-Jan-2020  | 23-Jan-2020  |
| Conductivity (at 20 deg.C)      | 24-Jan-2020  | 24-Jan-2020  | 24-Jan-2020  | 24-Jan-2020    | 24-Jan-2020    | 24-Jan-2020    | 24-Jan-2020    | 24-Jan-2020  | 24-Jan-2020  | 24-Jan-2020  |
| Pesticides (Suite I) by GCMS    |              | 28-Jan-2020  | 28-Jan-2020  | 28-Jan-2020    | 28-Jan-2020    | 28-Jan-2020    | 28-Jan-2020    |              |              |              |
| Pesticides (Suite II) by GCMS   |              | 27-Jan-2020  | 27-Jan-2020  | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    |              |              |              |
| Pesticides (Suite III) by GCMS  |              | 27-Jan-2020  | 27-Jan-2020  | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    |              |              |              |
| pH Value                        | 23-Jan-2020  | 23-Jan-2020  | 23-Jan-2020  | 23-Jan-2020    | 23-Jan-2020    | 23-Jan-2020    | 23-Jan-2020    | 23-Jan-2020  | 23-Jan-2020  | 23-Jan-2020  |

| Lab Sample No(s)                | 21512447     |
|---------------------------------|--------------|
| Customer Sample Ref.            | WS205A       |
| AGS Ref.                        |              |
| Depth                           |              |
| Type                            | Ground Water |
| Alkalinity as CaCO <sub>3</sub> | 24-Jan-2020  |
| Conductivity (at 20 deg.C)      | 24-Jan-2020  |
| pH Value                        | 23-Jan-2020  |



# CERTIFICATE OF ANALYSIS

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 538707  
Location: athouse Farm, Rusper Rd, Horsham Order Number: Superseded Report:

## Appendix

## General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH<sub>4</sub> by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

### 18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

|   |                                                                             |
|---|-----------------------------------------------------------------------------|
| 1 | Container with Headspace provided for volatiles analysis                    |
| 2 | Incorrect container received                                                |
| 3 | Deviation from method                                                       |
| § | Sampled on date not provided                                                |
| ♦ | Sample holding time exceeded in laboratory                                  |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

### 19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

#### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbestos Type         | Common Name    |
|-----------------------|----------------|
| Chrysotile            | White Asbestos |
| Amosite               | Brown Asbestos |
| Crocidolite           | Blue Asbestos  |
| Fibrous Actinolite    | -              |
| Fibrous Anthophyllite | -              |
| Fibrous Tremolite     | -              |

#### Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

#### Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2107).

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park  
Manor Road (off Manor Lane)  
Hawarden  
Deeside  
CH5 3US

Tel: (01244) 528700

Fax: (01244) 528701

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

Endeavour Drilling  
Aldgate Tower  
2 Leman Street  
London  
E1 8FA

**Attention:** Oliver Wendland

## CERTIFICATE OF ANALYSIS

**Date of report Generation:** 13 February 2020  
**Customer:** Endeavour Drilling  
**Sample Delivery Group (SDG):** 200118-47  
**Your Reference:** J4175 Stantec/ L & G  
**Location:** Moathouse Farm, Rusper Rd, Horsham  
**Report No:** 541129

**This report has been revised and directly supersedes 538707 in its entirety.**

We received 16 samples on Saturday January 18, 2020 and 11 of these samples were scheduled for analysis which was completed on Thursday February 13, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

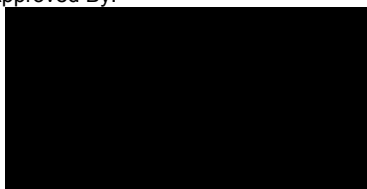
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



**Sonia McWhan**

Operations Manager





## CERTIFICATE OF ANALYSIS

Validated

**SDG:** 200118-47 **Client Reference:** J4175 Stantec/ L & G **Report Number:** 541129  
**Location:** Moathouse Farm, Rusper Rd **Order Number:** 13519AP **Superseded Report:** 538707

### Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-----------|--------------|
| 21512438         | BH201                |          |           | 17/01/2020   |
| 21512439         | BH203                |          |           | 17/01/2020   |
| 21512440         | BH204                |          |           | 17/01/2020   |
| 21512441         | BH205                |          |           | 17/01/2020   |
| 21512442         | BH206                |          |           | 17/01/2020   |
| 21512443         | BH208                |          |           | 17/01/2020   |
| 21512452         | RIVER SAMPLE 1       |          |           | 17/01/2020   |
| 21512453         | RIVER SAMPLE 2       |          |           | 17/01/2020   |
| 21512454         | RIVER SAMPLE 3       |          |           | 17/01/2020   |
| 21512455         | RIVER SAMPLE 4       |          |           | 17/01/2020   |
| 21512444         | WS201                |          |           | 17/01/2020   |
| 21512449         | WS206                |          |           | 17/01/2020   |
| 21512445         | WS202A               |          |           | 17/01/2020   |
| 21512446         | WS204A               |          |           | 17/01/2020   |
| 21512447         | WS205A               |          |           | 17/01/2020   |
| 21512451         | WS207A               |          |           | 17/01/2020   |

#### Maximum Sample/Coolbox Temperature (°C) :

##### ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

#### 8.2

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

**Only received samples which have had analysis scheduled will be shown on the following pages.**







# CERTIFICATE OF ANALYSIS

Validated

**SDG:** 200118-47 **Client Reference:** J4175 Stantec/ L & G **Report Number:** 541129  
**Location:** Moathouse Farm, Rusper Rd **Order Number:** 13519AP **Superseded Report:** 538707

| Results Legend                       |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      | BH204  | BH205 | BH208  | RIVER SAMPLE 1 | RIVER SAMPLE 2 | RIVER SAMPLE 3 |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|--------|-------|--------|----------------|----------------|----------------|
| #                                    | ISO17025 accredited.                                                                                                                                             |        |                                                                                                                           |        |       |        |                |                |                |
| M                                    | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |        |       |        |                |                |                |
| sq                                   | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |        |       |        |                |                |                |
| diss.filt                            | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |        |       |        |                |                |                |
| tot.unfilt                           | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |        |       |        |                |                |                |
| *                                    | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |        |       |        |                |                |                |
| **                                   | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |        |       |        |                |                |                |
| (F)                                  | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |        |       |        |                |                |                |
| 1-3*5@                               | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |        |       |        |                |                |                |
| Component                            | LOD/Units                                                                                                                                                        | Method | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |        |       |        |                |                |                |
| Alkalinity, Total as CaCO3           | <2 mg/l                                                                                                                                                          | TM043  |                                                                                                                           | 362    | 134   | 90     | 90             | 95             | <2             |
| Carbon, Organic (diss.filt)          | <3 mg/l                                                                                                                                                          | TM090  |                                                                                                                           | 5.23   | 4.69  | <3     | 8.4            | 8.74           | 10             |
| Ammoniacal Nitrogen as N (low level) | <0.01 mg/l                                                                                                                                                       | TM099  |                                                                                                                           | 0.0927 | 0.097 | 0.0609 | 0.0488         | 0.0423         | 0.0876         |
|                                      |                                                                                                                                                                  |        |                                                                                                                           | 2 #    | #     | 2 #    | #              | 2 #            | #              |
| Conductivity @ 20 deg.C              | <0.005 mS/cm                                                                                                                                                     | TM120  |                                                                                                                           | 0.821  | 0.383 | 0.33   | 0.238          | 0.232          | 1.5            |
| Sulphate                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           | 138    | 34.1  | 28.5   | 16.3           | 11.7           | 311            |
|                                      |                                                                                                                                                                  |        |                                                                                                                           | #      | #     | #      | #              | #              | #              |
| Chloride                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           | 111    | 24    | 33.3   | 16.2           | 15.5           | 16.2           |
|                                      |                                                                                                                                                                  |        |                                                                                                                           | #      | #     | #      | #              | #              | #              |
| Chromium, Hexavalent                 | <0.03 mg/l                                                                                                                                                       | TM241  |                                                                                                                           | <0.03  | <0.03 | <0.03  | <0.03          | <0.03          | <0.03          |
|                                      |                                                                                                                                                                  |        |                                                                                                                           | @ #    | @ #   | @ #    | @ #            | @ #            | @ #            |
| pH                                   | <1 pH Units                                                                                                                                                      | TM256  |                                                                                                                           | 7.57   | 7.04  | 6.66   | 7.39           | 7.5            | 2.53           |
| Trifluralin                          | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.02  | <0.01          | <0.02          | <0.02          |
| alpha-HCH                            | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| gamma-HCH (Lindane)                  | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| Heptachlor                           | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.02  | <0.01          | <0.02          | <0.02          |
| Aldrin                               | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| beta-HCH                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| Isodrin                              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| delta-HCH                            | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| Heptachlor epoxide                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| o,p'-DDE                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| Endosulphan I                        | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| trans-Chlordane                      | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| cis-Chlordane                        | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| p,p'-DDE                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| Dieldrin                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| o,p'-DDD (TDE)                       | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| Endrin                               | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.02  | <0.01          | <0.02          | <0.02          |
| o,p'-DDT                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.02  | <0.01          | <0.02          | <0.02          |
| p,p'-DDD (TDE)                       | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.01  | <0.01          | <0.01          | <0.01          |
| Endosulphan II                       | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.02 | <0.02  | <0.02          | <0.02          | <0.02          |
| p,p'-DDT                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.04  | <0.01          | <0.04          | <0.04          |
| o,p'-Methoxychlor                    | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.03  | <0.01          | <0.03          | <0.03          |
| p,p'-Methoxychlor                    | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.02 | <0.08  | <0.02          | <0.08          | <0.08          |
| Endosulphan Sulphate                 | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.02 | <0.02  | <0.02          | <0.02          | <0.02          |
| Permethrin I                         | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           |        | <0.01 | <0.02  | <0.01          | <0.02          | <0.02          |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 541129  
Location: Moathouse Farm, Rusper Rd Order Number: 13519AP Superseded Report: 538707

| Results Legend         |                                                                                                                                                                  | Customer Sample Ref.                                                                                                      | BH204             | BH205             | BH208             | RIVER SAMPLE 1    | RIVER SAMPLE 2    | RIVER SAMPLE 3    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| #                      | ISO17025 accredited.                                                                                                                                             | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) |
| M                      | mCERTS accredited.                                                                                                                                               |                                                                                                                           | 17/01/2020        | 17/01/2020        | 17/01/2020        | 17/01/2020        | 17/01/2020        | 17/01/2020        |
| aq                     | Aqueous / settled sample.                                                                                                                                        |                                                                                                                           | 18/01/2020        | 18/01/2020        | 18/01/2020        | 18/01/2020        | 18/01/2020        | 18/01/2020        |
| diss.filt              | Dissolved / filtered sample.                                                                                                                                     |                                                                                                                           | 200118-47         | 200118-47         | 200118-47         | 200118-47         | 200118-47         | 200118-47         |
| tot.unfilt             | Total / unfiltered sample.                                                                                                                                       |                                                                                                                           | 21512440          | 21512441          | 21512443          | 21512452          | 21512453          | 21512454          |
| *                      | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |                                                                                                                           |                   |                   |                   |                   |                   |                   |
| **                     | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |                                                                                                                           |                   |                   |                   |                   |                   |                   |
| (F)                    | Trigger breach confirmed                                                                                                                                         |                                                                                                                           |                   |                   |                   |                   |                   |                   |
| 1-3*5@                 | Sample deviation (see appendix)                                                                                                                                  |                                                                                                                           |                   |                   |                   |                   |                   |                   |
| Component              | LOD/Units                                                                                                                                                        | Method                                                                                                                    |                   |                   |                   |                   |                   |                   |
| Permethrin II          | <0.01 µg/l                                                                                                                                                       | TM343                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| 1,3,5-Trichlorobenzene | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Hexachlorobutadiene    | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| 1,2,4-Trichlorobenzene | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| 1,2,3-Trichlorobenzene | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Dichlorvos             | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Dichlobenil            | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Mevinphos              | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Tecnazene              | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Hexachlorobenzene      | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Demeton-S-methyl       | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Phorate                | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Diazinon               | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Triallate              | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Atrazine               | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Simazine               | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Disulfoton             | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Propetamphos           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |
| Chlorpyrifos-methyl    | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Dimethoate             | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Pirimiphos-methyl      | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Chlorpyrifos           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Methyl Parathion       | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Malathion              | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Fenthion               | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Fenitrothion           | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Triadimefon            | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Pendimethalin          | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Parathion              | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| Chlorfenvinphos        | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| trans-Chlordane        | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |
| cis-Chlordane          | <0.01 µg/l                                                                                                                                                       | TM344                                                                                                                     |                   | <0.02             | <0.02             | <0.02             | <0.02             | <0.02             |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 541129  
Location: Moathouse Farm, Rusper Rd Order Number: 13519AP Superseded Report: 538707

| Results Legend     |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      |  | BH204                                                                  | BH205                                                                  | BH208                                                                  | RIVER SAMPLE 1                                                         | RIVER SAMPLE 2                                                         | RIVER SAMPLE 3                                                         |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|
| #                  | ISO17025 accredited.                                                                                                                                             |        | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |  | Ground Water (GW)<br>17/01/2020<br>18/01/2020<br>200118-47<br>21512440 | Ground Water (GW)<br>17/01/2020<br>18/01/2020<br>200118-47<br>21512441 | Ground Water (GW)<br>17/01/2020<br>18/01/2020<br>200118-47<br>21512443 | Ground Water (GW)<br>17/01/2020<br>18/01/2020<br>200118-47<br>21512452 | Ground Water (GW)<br>17/01/2020<br>18/01/2020<br>200118-47<br>21512453 | Ground Water (GW)<br>17/01/2020<br>18/01/2020<br>200118-47<br>21512454 |
| M                  | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| aq                 | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| diss.filt          | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| tot.unfilt         | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| *                  | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| **                 | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| (F)                | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| 1-3*5@             | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| Component          | LOD/Units                                                                                                                                                        | Method |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| Ethion             | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  |
| Carbophenothion    | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  |
| Triazophos         | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  |
| Phosalone          | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  | <0.02                                                                  |
| Azinphos methyl    | <0.02 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                                                                        | <0.06                                                                  | <0.06                                                                  | <0.06                                                                  | <0.06                                                                  | <0.06                                                                  |
| Azinphos ethyl     | <0.02 µg/l                                                                                                                                                       | TM344  |                                                                                                                           |  |                                                                        | <0.04                                                                  | <0.02                                                                  | <0.04                                                                  | <0.04                                                                  | <0.04                                                                  |
| Etridiazole        | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Pentachlorobenzene | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Tributylphosphate  | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Propachlor         | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Quintozene (PCNB)  | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Omethoate          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Propazine          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Propyzamide        | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Alachlor           | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Prometryn          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Telodrin           | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Terbutryn          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Chlorothalonil     | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Etrimphos          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Metazachlor        | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Cyanazine          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Trietazine         | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Coumaphos          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Phosphamidon I     | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
| Phosphamidon II    | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           |  |                                                                        | <0.02                                                                  | <0.05                                                                  | <0.01                                                                  | <0.01                                                                  | <0.01                                                                  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                    |                                                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                    |                                                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                    |                                                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                    |                                                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                    |                                                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                    |                                                                                                                                                                  |        |                                                                                                                           |  |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |



# CERTIFICATE OF ANALYSIS

Validated

**SDG:** 200118-47 **Client Reference:** J4175 Stantec/ L & G **Report Number:** 541129  
**Location:** Moathouse Farm, Rusper Rd **Order Number:** 13519AP **Superseded Report:** 538707

| Results Legend                       |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      | RIVER SAMPLE 4 | WS206 | WS202A | WS204A | WS205A |  |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|----------------|-------|--------|--------|--------|--|
| #                                    | ISO17025 accredited.                                                                                                                                             |        |                                                                                                                           |                |       |        |        |        |  |
| M                                    | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |                |       |        |        |        |  |
| sq                                   | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |                |       |        |        |        |  |
| diss.filt                            | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |                |       |        |        |        |  |
| tot.unfilt                           | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |                |       |        |        |        |  |
| *                                    | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |                |       |        |        |        |  |
| **                                   | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |                |       |        |        |        |  |
| (F)                                  | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |                |       |        |        |        |  |
| 1-3+5@                               | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
| Component                            | LOD/Units                                                                                                                                                        | Method | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |                |       |        |        |        |  |
| Alkalinity, Total as CaCO3           | <2 mg/l                                                                                                                                                          | TM043  |                                                                                                                           | 70             | 307   | 240    | 168    | 210    |  |
| Carbon, Organic (diss.filt)          | <3 mg/l                                                                                                                                                          | TM090  |                                                                                                                           | 8.62           | 9.26  | 7.43   | 33.9   | 6.63   |  |
| Ammoniacal Nitrogen as N (low level) | <0.01 mg/l                                                                                                                                                       | TM099  |                                                                                                                           | 0.181          | <0.01 | 0.216  | 1.44   | 0.116  |  |
| Conductivity @ 20 deg.C              | <0.005 mS/cm                                                                                                                                                     | TM120  |                                                                                                                           | 0.239          | 1.11  | 0.433  | 2.1    | 0.274  |  |
| Sulphate                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           | 19.8           | 218   | 22.6   | 1010   | 63.6   |  |
| Chloride                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           | 22.8           | 113   | 16.9   | 120    | 33     |  |
| Chromium, Hexavalent                 | <0.03 mg/l                                                                                                                                                       | TM241  |                                                                                                                           | <0.03          | <0.03 | <0.03  | <0.03  | <0.03  |  |
| pH                                   | <1 pH Units                                                                                                                                                      | TM256  |                                                                                                                           | 7.67           | 6.55  | 8.21   | 6.41   | 5.93   |  |
| Trifluralin                          | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| alpha-HCH                            | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| gamma-HCH (Lindane)                  | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Heptachlor                           | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Aldrin                               | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| beta-HCH                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Isodrin                              | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| delta-HCH                            | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Heptachlor epoxide                   | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| o,p'-DDE                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Endosulphan I                        | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| trans-Chlordane                      | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| cis-Chlordane                        | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| p,p'-DDE                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Dieldrin                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| o,p'-DDD (TDE)                       | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Endrin                               | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| o,p'-DDT                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| p,p'-DDD (TDE)                       | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Endosulphan II                       | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| p,p'-DDT                             | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.04          |       |        |        |        |  |
| o,p'-Methoxychlor                    | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.03          |       |        |        |        |  |
| p,p'-Methoxychlor                    | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.08          |       |        |        |        |  |
| Endosulphan Sulphate                 | <0.02 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Permethrin I                         | <0.01 µg/l                                                                                                                                                       | TM343  |                                                                                                                           | <0.02          |       |        |        |        |  |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 541129  
Location: Moathouse Farm, Rusper Rd Order Number: 13519AP Superseded Report: 538707

| Results Legend         |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      |  | RIVER SAMPLE 4                                                             | WS206                                                                      | WS202A                                                                     | WS204A                                                                     | WS205A                                                                     |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| #                      | ISO17025 accredited.                                                                                                                                             |        | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |  | Ground Water (GW)<br>17/01/2020<br><br>18/01/2020<br>200118-47<br>21512455 | Ground Water (GW)<br>17/01/2020<br><br>18/01/2020<br>200118-47<br>21512449 | Ground Water (GW)<br>17/01/2020<br><br>18/01/2020<br>200118-47<br>21512445 | Ground Water (GW)<br>17/01/2020<br><br>18/01/2020<br>200118-47<br>21512446 | Ground Water (GW)<br>17/01/2020<br><br>18/01/2020<br>200118-47<br>21512447 |
| M                      | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| aq                     | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| diss.filt              | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| tot.unfilt             | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| *                      | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| **                     | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| (F)                    | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| 1-3*5@                 | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Component              | LOD/Units                                                                                                                                                        | Method |                                                                                                                           |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Permethrin II          | <0.01 µg/l                                                                                                                                                       | TM343  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| 1,3,5-Trichlorobenzene | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Hexachlorobutadiene    | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| 1,2,4-Trichlorobenzene | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| 1,2,3-Trichlorobenzene | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Dichlorvos             | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Dichlobenil            | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Mevinphos              | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Tecnazene              | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Hexachlorobenzene      | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Demeton-S-methyl       | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Phorate                | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Diazinon               | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Triallate              | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Atrazine               | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Simazine               | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Disulfoton             | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Propetamphos           | <0.01 µg/l                                                                                                                                                       | TM344  | <0.01                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Chlorpyrifos-methyl    | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Dimethoate             | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Pirimiphos-methyl      | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Chlorpyrifos           | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Methyl Parathion       | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Malathion              | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Fenthion               | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Fenitrothion           | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Triadimefon            | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Pendimethalin          | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Parathion              | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| Chlorfenvinphos        | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| trans-Chlordane        | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |
| cis-Chlordane          | <0.01 µg/l                                                                                                                                                       | TM344  | <0.02                                                                                                                     |  |                                                                            |                                                                            |                                                                            |                                                                            |                                                                            |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 541129  
Location: Moathouse Farm, Rusper Rd Order Number: 13519AP Superseded Report: 538707

| Results Legend     |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      | RIVER SAMPLE 4 | WS206 | WS202A | WS204A | WS205A |  |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|----------------|-------|--------|--------|--------|--|
| #                  | ISO17025 accredited.                                                                                                                                             |        | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |                |       |        |        |        |  |
| M                  | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |                |       |        |        |        |  |
| aq                 | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |                |       |        |        |        |  |
| diss.filt          | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |                |       |        |        |        |  |
| tot.unfilt         | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |                |       |        |        |        |  |
| *                  | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |                |       |        |        |        |  |
| **                 | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |                |       |        |        |        |  |
| (F)                | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |                |       |        |        |        |  |
| 1-3*5@             | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
| Component          | LOD/Units                                                                                                                                                        | Method |                                                                                                                           |                |       |        |        |        |  |
| Ethion             | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Carbophenothion    | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Triazophos         | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Phosalone          | <0.01 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.02          |       |        |        |        |  |
| Azinphos methyl    | <0.02 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.06          |       |        |        |        |  |
| Azinphos ethyl     | <0.02 µg/l                                                                                                                                                       | TM344  |                                                                                                                           | <0.04          |       |        |        |        |  |
| Etridiazole        | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Pentachlorobenzene | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Tributylphosphate  | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Propachlor         | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Quintozene (PCNB)  | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Omethoate          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Propazine          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Propyzamide        | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Alachlor           | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Prometryn          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Telodrin           | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Terbutryn          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Chlorothalonil     | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Etrimphos          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Metazachlor        | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Cyanazine          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Trietazine         | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Coumaphos          | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Phosphamidon I     | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
| Phosphamidon II    | <0.01 µg/l                                                                                                                                                       | TM345  |                                                                                                                           | <0.01          |       |        |        |        |  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |
|                    |                                                                                                                                                                  |        |                                                                                                                           |                |       |        |        |        |  |



## CERTIFICATE OF ANALYSIS

Validated

|                  |                           |                          |                      |                           |        |
|------------------|---------------------------|--------------------------|----------------------|---------------------------|--------|
| <b>SDG:</b>      | 200118-47                 | <b>Client Reference:</b> | J4175 Stantec/ L & G | <b>Report Number:</b>     | 541129 |
| <b>Location:</b> | Moathouse Farm, Rusper Rd | <b>Order Number:</b>     | 13519AP              | <b>Superseded Report:</b> | 538707 |

### Notification of NDPs (No determination possible)

Date Received : 18/01/2020 11:37:06

| Sample No | Customer Sample Ref. | Depth (m) | Test                           | Comment                          |
|-----------|----------------------|-----------|--------------------------------|----------------------------------|
| 21512440  | BH204                |           | Pesticides (Suite I) by GCMS   | Sample unsuitable for extraction |
| 21512440  | BH204                |           | Pesticides (Suite II) by GCMS  | Sample unsuitable for extraction |
| 21512440  | BH204                |           | Pesticides (Suite III) by GCMS | Sample unsuitable for extraction |



## CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47

Client Reference: J4175 Stantec/ L &amp; G

Report Number: 541129

Location: Moathouse Farm, Rusper Rd

Order Number: 13519AP

Superseded Report: 538707

### Table of Results - Appendix

| Method No | Reference                                                                                                                                                   | Description                                                                                 |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| TM043     | Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984                                                                                             | Determination of alkalinity in aqueous samples                                              |
| TM090     | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060                                                                               | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water       |
| TM099     | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984                                                                                                               | Determination of Ammonium in Water Samples using the Kone Analyser                          |
| TM120     | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970                                                                                              | Determination of Electrical Conductivity using a Conductivity Meter                         |
| TM184     | EPA Methods 325.1 & 325.2,                                                                                                                                  | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers |
| TM241     | Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.                               | The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser    |
| TM256     | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter                           |
| TM343     | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)                                                                 | Determination of Selected Pesticides (Suite I) in Liquids by GCMS                           |
| TM344     | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)                                                                 | Determination of selected pesticides (Suite II) by GCMS                                     |
| TM345     | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)                                                                 | Determination of selected pesticides (Suite III) by GCMS                                    |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200118-47 Client Reference: J4175 Stantec/ L & G Report Number: 541129  
Location: Moathouse Farm, Rusper Rd Order Number: 13519AP Superseded Report: 538707

## Test Completion Dates

| Lab Sample No(s)                   | 21512440     | 21512441     | 21512443     | 21512452       | 21512453       | 21512454       | 21512455       | 21512449     | 21512445     | 21512446     |
|------------------------------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|--------------|--------------|--------------|
| Customer Sample Ref.               | BH204        | BH205        | BH208        | RIVER SAMPLE 1 | RIVER SAMPLE 2 | RIVER SAMPLE 3 | RIVER SAMPLE 4 | WS206        | WS202A       | WS204A       |
| AGS Ref.                           |              |              |              |                |                |                |                |              |              |              |
| Depth                              |              |              |              |                |                |                |                |              |              |              |
| Type                               | Ground Water | Ground Water | Ground Water | Ground Water   | Ground Water   | Ground Water   | Ground Water   | Ground Water | Ground Water | Ground Water |
| Alkalinity as CaCO <sub>3</sub>    | 23-Jan-2020  | 23-Jan-2020  | 24-Jan-2020  | 21-Jan-2020    | 21-Jan-2020    | 21-Jan-2020    | 21-Jan-2020    | 23-Jan-2020  | 13-Feb-2020  | 23-Jan-2020  |
| Ammonium Low                       | 10-Feb-2020  | 10-Feb-2020  | 10-Feb-2020  | 10-Feb-2020    | 10-Feb-2020    | 10-Feb-2020    | 10-Feb-2020    | 10-Feb-2020  | 10-Feb-2020  | 10-Feb-2020  |
| Anions by Kone (w)                 | 08-Feb-2020  | 10-Feb-2020  | 10-Feb-2020  | 08-Feb-2020    | 08-Feb-2020    | 08-Feb-2020    | 08-Feb-2020    | 10-Feb-2020  | 08-Feb-2020  | 08-Feb-2020  |
| Conductivity (at 20 deg.C)         | 24-Jan-2020  | 24-Jan-2020  | 24-Jan-2020  | 24-Jan-2020    | 24-Jan-2020    | 24-Jan-2020    | 24-Jan-2020    | 24-Jan-2020  | 24-Jan-2020  | 24-Jan-2020  |
| Dissolved Organic/Inorganic Carbon | 11-Feb-2020  | 11-Feb-2020  | 11-Feb-2020  | 11-Feb-2020    | 11-Feb-2020    | 11-Feb-2020    | 11-Feb-2020    | 11-Feb-2020  | 11-Feb-2020  | 11-Feb-2020  |
| Hexavalent Chromium (w)            | 10-Feb-2020  | 10-Feb-2020  | 10-Feb-2020  | 10-Feb-2020    | 10-Feb-2020    | 10-Feb-2020    | 10-Feb-2020    | 10-Feb-2020  | 10-Feb-2020  | 10-Feb-2020  |
| Pesticides (Suite I) by GCMS       |              | 28-Jan-2020  | 28-Jan-2020  | 28-Jan-2020    | 28-Jan-2020    | 28-Jan-2020    | 28-Jan-2020    |              |              |              |
| Pesticides (Suite II) by GCMS      |              | 27-Jan-2020  | 27-Jan-2020  | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    |              |              |              |
| Pesticides (Suite III) by GCMS     |              | 27-Jan-2020  | 27-Jan-2020  | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    | 27-Jan-2020    |              |              |              |
| pH Value                           | 23-Jan-2020  | 23-Jan-2020  | 23-Jan-2020  | 23-Jan-2020    | 23-Jan-2020    | 23-Jan-2020    | 23-Jan-2020    | 23-Jan-2020  | 23-Jan-2020  | 23-Jan-2020  |

| Lab Sample No(s)                   | 21512447     |
|------------------------------------|--------------|
| Customer Sample Ref.               | WS205A       |
| AGS Ref.                           |              |
| Depth                              |              |
| Type                               | Ground Water |
| Alkalinity as CaCO <sub>3</sub>    | 24-Jan-2020  |
| Ammonium Low                       | 10-Feb-2020  |
| Anions by Kone (w)                 | 10-Feb-2020  |
| Conductivity (at 20 deg.C)         | 24-Jan-2020  |
| Dissolved Organic/Inorganic Carbon | 11-Feb-2020  |
| Hexavalent Chromium (w)            | 10-Feb-2020  |
| pH Value                           | 23-Jan-2020  |



# CERTIFICATE OF ANALYSIS

|                  |                                |                          |                      |                           |        |
|------------------|--------------------------------|--------------------------|----------------------|---------------------------|--------|
| <b>SDG:</b>      | 200118-47                      | <b>Client Reference:</b> | J4175 Stantec/ L & G | <b>Report Number:</b>     | 541129 |
| <b>Location:</b> | athouse Farm, Rusper Rd, Horsh | <b>Order Number:</b>     | 13519AP              | <b>Superseded Report:</b> | 538707 |

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH<sub>4</sub> by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

## General

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

### 18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

|   |                                                                             |
|---|-----------------------------------------------------------------------------|
| 1 | Container with Headspace provided for volatiles analysis                    |
| 2 | Incorrect container received                                                |
| 3 | Deviation from method                                                       |
| § | Sampled on date not provided                                                |
| ♦ | Sample holding time exceeded in laboratory                                  |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

### 19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

#### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbestos Type         | Common Name    |
|-----------------------|----------------|
| Chrysotile            | White Asbestos |
| Amosite               | Brown Asbestos |
| Crocidolite           | Blue Asbestos  |
| Fibrous Actinolite    | -              |
| Fibrous Anthophyllite | -              |
| Fibrous Tremolite     | -              |

#### Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

#### Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2107).

**Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.**

**The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.**



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Endeavour Drilling  
Aldgate Tower  
2 Leman Street  
London  
E1 8FA

**Attention:** Oliver Wendland

## CERTIFICATE OF ANALYSIS

|                                     |                                    |
|-------------------------------------|------------------------------------|
| <b>Date of report Generation:</b>   | 09 March 2020                      |
| <b>Customer:</b>                    | Endeavour Drilling                 |
| <b>Sample Delivery Group (SDG):</b> | 200218-57                          |
| <b>Your Reference:</b>              | J4175                              |
| <b>Location:</b>                    | Moathouse Farm, Rusper Rd, Horsham |
| <b>Report No:</b>                   | 544710                             |

**This report has been revised and directly supersedes 543037 in its entirety.**

We received 11 samples on Tuesday February 18, 2020 and 11 of these samples were scheduled for analysis which was completed on Monday March 09, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

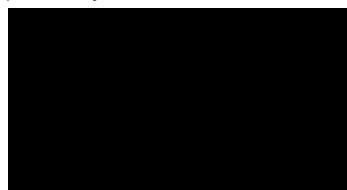
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



**So**  
Operations Manager



## CERTIFICATE OF ANALYSIS

Validated

SDG: 200218-57

Client Reference: J4175

Report Number: 544710

Location: Moathouse Farm, Rusper Rd

Order Number: 13555JW

Superseded Report: 543037

### Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-----------|--------------|
| 21708461         | BH204                |          |           | 17/02/2020   |
| 21708462         | BH205                |          |           | 17/02/2020   |
| 21708453         | BH208                |          |           | 17/02/2020   |
| 21708447         | RIVER SAMPLE 1       |          |           | 17/02/2020   |
| 21708448         | RIVER SAMPLE 2       |          |           | 17/02/2020   |
| 21708451         | RIVER SAMPLE 3       |          |           | 17/02/2020   |
| 21708452         | RIVER SAMPLE 4       |          |           | 17/02/2020   |
| 21708460         | WS206                |          |           | 17/02/2020   |
| 21708455         | WS202A               |          |           | 17/02/2020   |
| 21708456         | WS204A               |          |           | 17/02/2020   |
| 21708458         | WS205A               |          |           | 17/02/2020   |

#### Maximum Sample/Coolbox Temperature (°C) :

7.2

#### ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.







|          |                |  |  |                            |    |   |   |
|----------|----------------|--|--|----------------------------|----|---|---|
| 21708460 | WS206          |  |  | Vial (ALE297)              | GW |   |   |
|          |                |  |  | HNO3 Unfiltered (ALE204)   | GW | X |   |
|          |                |  |  | H2SO4 (ALE244)             | GW |   |   |
|          |                |  |  | 500ml Plastic (ALE208)     | GW |   |   |
|          |                |  |  | 0.5l glass bottle (ALE227) | GW |   | X |
| 21708452 | RIVER SAMPLE 4 |  |  | Vial (ALE297)              | GW |   |   |
|          |                |  |  | HNO3 Unfiltered (ALE204)   | GW | X |   |
|          |                |  |  | H2SO4 (ALE244)             | GW |   |   |
|          |                |  |  | 500ml Plastic (ALE208)     | GW |   |   |
|          |                |  |  | 0.5l glass bottle (ALE227) | GW |   | X |
| 21708451 | RIVER SAMPLE 3 |  |  | Vial (ALE297)              | GW |   |   |
|          |                |  |  | HNO3 Unfiltered (ALE204)   | GW | X |   |
|          |                |  |  | H2SO4 (ALE244)             | GW |   |   |
|          |                |  |  | 500ml Plastic (ALE208)     | GW |   |   |
|          |                |  |  | 0.5l glass bottle (ALE227) | GW |   | X |
| 21708448 | RIVER SAMPLE 2 |  |  | Vial (ALE297)              | GW |   |   |
|          |                |  |  | HNO3 Unfiltered (ALE204)   | GW | X |   |
|          |                |  |  | H2SO4 (ALE244)             | GW |   |   |
|          |                |  |  | 500ml Plastic (ALE208)     | GW |   |   |
|          |                |  |  | 0.5l glass bottle (ALE227) | GW |   | X |
| 21708447 | RIVER SAMPLE 1 |  |  | Vial (ALE297)              | GW |   |   |
|          |                |  |  | 500ml Plastic (ALE208)     | GW |   |   |
|          |                |  |  | 0.5l glass bottle (ALE227) | GW |   | X |
|          |                |  |  |                            |    |   |   |
|          |                |  |  |                            |    |   |   |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200218-57 Client Reference: J4175 Report Number: 544710  
Location: Moathouse Farm, Rusper Rd Order Number: 13555JW Superseded Report: 543037

## Results Legend

**X** Test  
**N** No Determination Possible

## Sample Types -

S - Soil/Solid  
UNS - Unspecified Solid  
GW - Ground Water  
SW - Surface Water  
LE - Land Leachate  
PL - Prepared Leachate  
PR - Process Water  
SA - Saline Water  
TE - Trade Effluent  
TS - Treated Sewage  
US - Untreated Sewage  
RE - Recreational Water  
DW - Drinking Water Non-regulatory  
UNL - Unspecified Liquid  
SL - Sludge  
G - Gas  
OTH - Other

| Lab Sample No(s)                   | Customer Sample Reference | AGS Reference        | Depth (m) | Container     |                          |                |                        |                            |               |                          |                |                        |                            | Sample Type |
|------------------------------------|---------------------------|----------------------|-----------|---------------|--------------------------|----------------|------------------------|----------------------------|---------------|--------------------------|----------------|------------------------|----------------------------|-------------|
|                                    |                           |                      |           | Vial (ALE297) | HNO3 Unfiltered (ALE204) | H2SO4 (ALE244) | 500ml Plastic (ALE208) | 0.5l glass bottle (ALE227) | Vial (ALE297) | HNO3 Unfiltered (ALE204) | H2SO4 (ALE244) | 500ml Plastic (ALE208) | 0.5l glass bottle (ALE227) |             |
| 21708455                           | WS202A                    |                      |           | GW            | GW                       | GW             | GW                     | GW                         | GW            | GW                       | GW             | GW                     | GW                         | GW          |
| 21708456                           | WS204A                    |                      |           | GW            | GW                       | GW             | GW                     | GW                         | GW            | GW                       | GW             | GW                     | GW                         | GW          |
| 21708458                           | WS205A                    |                      |           | GW            | GW                       | GW             | GW                     | GW                         | GW            | GW                       | GW             | GW                     | GW                         | GW          |
| Alkalinity as CaCO3                | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Ammonium Low                       | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Anions by Kone (w)                 | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Conductivity (at 20 deg.C)         | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Dissolved Metals by ICP-MS         | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Dissolved Organic/Inorganic Carbon | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| EPH CWG (Aliphatic) Aqueous GC (W) | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| EPH CWG (Aromatic) Aqueous GC (W)  | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| GRO by GC-FID (W)                  | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Hexavalent Chromium (w)            | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Mercury Dissolved                  | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Mercury Unfiltered                 | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| PAH Spec MS - Aqueous (W)          | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| pH Value                           | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |
| Phenols by HPLC (W)                | All                       | NDPs: 0<br>Tests: 11 |           |               |                          |                |                        |                            |               |                          |                |                        |                            |             |





# CERTIFICATE OF ANALYSIS

Validated

**SDG:** 200218-57 **Client Reference:** J4175 **Report Number:** 544710  
**Location:** Moathouse Farm, Rusper Rd **Order Number:** 13555JW **Superseded Report:** 543037

| Results Legend                       |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      | BH204  | BH205  | BH208  | RIVER SAMPLE 1 | RIVER SAMPLE 2 | RIVER SAMPLE 3 |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|----------------|----------------|----------------|
| #                                    | ISO17025 accredited.                                                                                                                                             |        |                                                                                                                           |        |        |        |                |                |                |
| M                                    | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |        |        |        |                |                |                |
| sq                                   | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |        |        |        |                |                |                |
| diss.filt                            | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |        |        |        |                |                |                |
| tot.unfilt                           | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |        |        |        |                |                |                |
| *                                    | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |        |        |        |                |                |                |
| **                                   | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |        |        |        |                |                |                |
| (F)                                  | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |        |        |        |                |                |                |
| 1-3+5@                               | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |        |        |        |                |                |                |
| Component                            | LOD/Units                                                                                                                                                        | Method | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |        |        |        |                |                |                |
| Alkalinity, Total as CaCO3           | <2 mg/l                                                                                                                                                          | TM043  |                                                                                                                           | 305    | 140    | 100    | 84.3           | 65.1           | 39             |
| Carbon, Organic (diss.filt)          | <3 mg/l                                                                                                                                                          | TM090  |                                                                                                                           | <3     | 4.59   | <3     | 8.3            | 9.07           | 9.25           |
| Ammoniacal Nitrogen as N (low level) | <0.01 mg/l                                                                                                                                                       | TM099  |                                                                                                                           | 0.0122 | 0.0931 | 0.0296 | 0.0259         | 0.241          | 0.0524         |
| Conductivity @ 20 deg.C              | <0.005 mS/cm                                                                                                                                                     | TM120  |                                                                                                                           | 0.803  | 0.334  | 0.365  | 0.231          | 0.161          | 0.146          |
| Arsenic (diss.filt)                  | <0.5 µg/l                                                                                                                                                        | TM152  |                                                                                                                           | 0.689  | <0.5   | <0.5   | 0.594          | <0.5           | <0.5           |
| Arsenic (tot.unfilt)                 | <2 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 152    | 13.9   | 38.8   | <2             | 3.31           | 2.88           |
| Cadmium (diss.filt)                  | <0.08 µg/l                                                                                                                                                       | TM152  |                                                                                                                           | <0.08  | <0.08  | 0.134  | <0.08          | <0.08          | <0.08          |
| Cadmium (tot.unfilt)                 | <0.5 µg/l                                                                                                                                                        | TM152  |                                                                                                                           | 4.7    | <3     | 3.53   | <0.5           | <0.5           | <0.5           |
| Chromium (tot.unfilt)                | <3 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 718    | 84.4   | 374    | 5.66           | 13.1           | 11.7           |
| Chromium (diss.filt)                 | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | <1     | <1     | <1     | <1             | <1             | <1             |
| Copper (tot.unfilt)                  | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 772    | 122    | 401    | 6.62           | 14.1           | 10.5           |
| Lead (tot.unfilt)                    | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 663    | 147    | 244    | 3.99           | 14.4           | 9.67           |
| Copper (diss.filt)                   | <0.3 µg/l                                                                                                                                                        | TM152  |                                                                                                                           | 0.475  | 1.36   | 0.72   | 3.09           | 2.75           | 2.94           |
| Lead (diss.filt)                     | <0.2 µg/l                                                                                                                                                        | TM152  |                                                                                                                           | <0.2   | <0.2   | <0.2   | 0.512          | <0.2           | 0.236          |
| Nickel (tot.unfilt)                  | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 857    | 156    | 416    | 4.47           | 10.8           | 9.96           |
| Selenium (tot.unfilt)                | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 22.2   | 9.77   | 13.4   | <1             | <1             | <1             |
| Nickel (diss.filt)                   | <0.4 µg/l                                                                                                                                                        | TM152  |                                                                                                                           | 7.05   | 3.94   | 26.8   | 1.42           | 1.28           | 1.92           |
| Selenium (diss.filt)                 | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 2.02   | <1     | 1      | <1             | <1             | <1             |
| Zinc (tot.unfilt)                    | <5 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 1880   | 361    | 890    | 21             | 61.8           | 51.5           |
| Zinc (diss.filt)                     | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           | 1.08   | 1.04   | 4.35   | 2.44           | 1.79           | 2.25           |
| Calcium (Dis.Filt)                   | <0.2 mg/l                                                                                                                                                        | TM152  |                                                                                                                           | 100    | 51.9   | 29     | 41.7           | 22.5           | 17.7           |
| Calcium (Tot. Unfilt.)               | <0.057 mg/l                                                                                                                                                      | TM152  |                                                                                                                           | 224    | 87.3   | 56     | 42             | 26.8           | 19.6           |
| Mercury (diss.filt)                  | <0.01 µg/l                                                                                                                                                       | TM183  |                                                                                                                           | <0.01  | <0.01  | <0.01  | 0.0258         | <0.01          | 0.115          |
| Mercury (tot.unfilt)                 | <0.02 µg/l                                                                                                                                                       | TM183  |                                                                                                                           | 0.182  | 0.15   | 0.0726 | <0.02          | 0.0314         | 0.0269         |
| Sulphate                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           | 135    | 30.3   | 44.2   | 14.8           | 7.8            | 13.3           |
| Chloride                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           | 97.9   | 23     | 33     | 14.1           | 13.3           | 16.8           |
| Chromium, Hexavalent                 | <0.03 mg/l                                                                                                                                                       | TM241  |                                                                                                                           | <0.03  | <0.03  | <0.03  | <0.03          | <0.03          | <0.03          |
| pH                                   | <1 pH Units                                                                                                                                                      | TM256  |                                                                                                                           | 7.44   | 6.93   | 6.72   | 7.53           | 7.44           | 7.11           |
| Phenol                               | <0.002 mg/l                                                                                                                                                      | TM259  |                                                                                                                           | <0.002 | <0.002 | <0.002 | <0.002         | <0.002         | <0.002         |
| Cresols                              | <0.006 mg/l                                                                                                                                                      | TM259  |                                                                                                                           | <0.006 | <0.006 | <0.006 | <0.006         | <0.006         | <0.006         |
| Xylenols                             | <0.008 mg/l                                                                                                                                                      | TM259  |                                                                                                                           | <0.008 | <0.008 | <0.008 | <0.008         | <0.008         | <0.008         |
| 2,3,5-Trimethylphenol                | <0.003 mg/l                                                                                                                                                      | TM259  |                                                                                                                           | <0.003 | <0.003 | <0.003 | <0.003         | <0.003         | <0.003         |
| 2-Isopropylphenol                    | <0.006 mg/l                                                                                                                                                      | TM259  |                                                                                                                           | <0.006 | <0.006 | <0.006 | <0.006         | <0.006         | <0.006         |





# CERTIFICATE OF ANALYSIS

Validated

**SDG:** 200218-57 **Client Reference:** J4175 **Report Number:** 544710  
**Location:** Moathouse Farm, Rusper Rd **Order Number:** 13555JW **Superseded Report:** 543037

| Results Legend                       |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      |  | RIVER SAMPLE 4    | WS206             | WS202A            | WS204A            | WS205A            |  |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|--|
| #                                    | ISO17025 accredited.                                                                                                                                             |        | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |  | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) |  |
| M                                    | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |  | 17/02/2020        | 17/02/2020        | 17/02/2020        | 17/02/2020        | 17/02/2020        |  |
| sq                                   | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| diss.filt                            | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| tot.unfilt                           | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |  | 18/02/2020        | 18/02/2020        | 18/02/2020        | 18/02/2020        | 18/02/2020        |  |
| *                                    | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |  | 200218-57         | 200218-57         | 200218-57         | 200218-57         | 200218-57         |  |
| **                                   | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |  | 21708452          | 21708460          | 21708455          | 21708456          | 21708458          |  |
| (F)                                  | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| 1-3+5@                               | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| Component                            | LOD/Units                                                                                                                                                        | Method |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| Alkalinity, Total as CaCO3           | <2 mg/l                                                                                                                                                          | TM043  |                                                                                                                           |  | 41                | 251               | 214               | 134               | 390               |  |
| Carbon, Organic (diss.filt)          | <3 mg/l                                                                                                                                                          | TM090  |                                                                                                                           |  | 9.59              | 14.3              | 5.5               | 24.5              | 9.33              |  |
| Ammoniacal Nitrogen as N (low level) | <0.01 mg/l                                                                                                                                                       | TM099  |                                                                                                                           |  | 0.0477            | 0.302             | 0.0852            | 1.25              | 0.16              |  |
| Conductivity @ 20 deg.C              | <0.005 mS/cm                                                                                                                                                     | TM120  |                                                                                                                           |  | 0.146             | 0.909             | 0.386             | 1.76              | 0.677             |  |
| Arsenic (diss.filt)                  | <0.5 µg/l                                                                                                                                                        | TM152  |                                                                                                                           |  | <0.5              | 0.637             | 0.792             | 1.32              | 0.742             |  |
| Arsenic (tot.unfilt)                 | <2 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | <2                | 16.2              | 10.2              | 27.8              | 113               |  |
| Cadmium (diss.filt)                  | <0.08 µg/l                                                                                                                                                       | TM152  |                                                                                                                           |  | <0.08             | 0.642             | <0.08             | 1.17              | <0.08             |  |
| Cadmium (tot.unfilt)                 | <0.5 µg/l                                                                                                                                                        | TM152  |                                                                                                                           |  | <0.5              | 2.2               | <0.5              | 1.6               | 5.11              |  |
| Chromium (tot.unfilt)                | <3 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | 8                 | 46.5              | 53.3              | 95.5              | 525               |  |
| Chromium (diss.filt)                 | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | <1                | <1                | 1.06              | <1                | <1                |  |
| Copper (tot.unfilt)                  | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | 9.27              | 61.2              | 73.9              | 89                | 789               |  |
| Lead (tot.unfilt)                    | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | 9.85              | 65.1              | 63.9              | 122               | 757               |  |
| Copper (diss.filt)                   | <0.3 µg/l                                                                                                                                                        | TM152  |                                                                                                                           |  | 3.11              | 3.84              | 10.5              | 9.13              | 2.3               |  |
| Lead (diss.filt)                     | <0.2 µg/l                                                                                                                                                        | TM152  |                                                                                                                           |  | 0.325             | <0.2              | <0.2              | 0.35              | <0.2              |  |
| Nickel (tot.unfilt)                  | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | 8.96              | 85.6              | 46.6              | 82.4              | 631               |  |
| Selenium (tot.unfilt)                | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | <1                | 3.21              | 3.18              | 7.33              | 31.1              |  |
| Nickel (diss.filt)                   | <0.4 µg/l                                                                                                                                                        | TM152  |                                                                                                                           |  | 2.07              | 35.9              | 2.12              | 25                | 5.84              |  |
| Selenium (diss.filt)                 | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | <1                | <1                | <1                | 1.92              | 2.2               |  |
| Zinc (tot.unfilt)                    | <5 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | 43.1              | 229               | 192               | 321               | 1500              |  |
| Zinc (diss.filt)                     | <1 µg/l                                                                                                                                                          | TM152  |                                                                                                                           |  | 2.09              | 17.8              | 2.81              | 48.6              | 2.7               |  |
| Calcium (Dis.Filt)                   | <0.2 mg/l                                                                                                                                                        | TM152  |                                                                                                                           |  | 18.2              | 83.9              | 72.8              | 339               | 56.7              |  |
| Calcium (Tot. Unfilt.)               | <0.057 mg/l                                                                                                                                                      | TM152  |                                                                                                                           |  | 21.2              | 79.8              | 107               | 335               | 224               |  |
| Mercury (diss.filt)                  | <0.01 µg/l                                                                                                                                                       | TM183  |                                                                                                                           |  | <0.01             | <0.01             | <0.01             | <0.01             | <0.01             |  |
| Mercury (tot.unfilt)                 | <0.02 µg/l                                                                                                                                                       | TM183  |                                                                                                                           |  | 0.0245            | 0.0503            | 0.251             | 0.166             | 1.25              |  |
| Sulphate                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           |  | 13.5              | 145               | 19.7              | 919               | 91.4              |  |
| Chloride                             | <2 mg/l                                                                                                                                                          | TM184  |                                                                                                                           |  | 16.8              | 97.1              | 18.1              | 105               | 53.4              |  |
| Chromium, Hexavalent                 | <0.03 mg/l                                                                                                                                                       | TM241  |                                                                                                                           |  | <0.03             | <0.03             | <0.03             | <0.03             | <0.03             |  |
| pH                                   | <1 pH Units                                                                                                                                                      | TM256  |                                                                                                                           |  | 7.22              | 6.47              | 7.72              | 6.31              | 7.15              |  |
| Phenol                               | <0.002 mg/l                                                                                                                                                      | TM259  |                                                                                                                           |  | <0.002            | <0.002            | <0.002            | <0.002            | <0.002            |  |
| Cresols                              | <0.006 mg/l                                                                                                                                                      | TM259  |                                                                                                                           |  | <0.006            | <0.006            | <0.006            | <0.006            | <0.006            |  |
| Xylenols                             | <0.008 mg/l                                                                                                                                                      | TM259  |                                                                                                                           |  | <0.008            | <0.008            | <0.008            | <0.008            | <0.008            |  |
| 2,3,5-Trimethylphenol                | <0.003 mg/l                                                                                                                                                      | TM259  |                                                                                                                           |  | <0.003            | <0.003            | <0.003            | <0.003            | <0.003            |  |
| 2-Isopropylphenol                    | <0.006 mg/l                                                                                                                                                      | TM259  |                                                                                                                           |  | <0.006            | <0.006            | <0.006            | <0.006            | <0.006            |  |









# CERTIFICATE OF ANALYSIS

Validated

SDG: 200218-57 Client Reference: J4175 Report Number: 544710  
Location: Moathouse Farm, Rusper Rd Order Number: 13555JW Superseded Report: 543037

## TPH CWG (W)

| Results Legend                           |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      | BH204                                                                  | BH205                                                                  | BH208                                                                  | RIVER SAMPLE 1                                                         | RIVER SAMPLE 2                                                         | RIVER SAMPLE 3                                                         |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|
| #                                        | ISO17025 accredited.                                                                                                                                             |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| M                                        | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| sq                                       | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| dis.filt                                 | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| tot.unfilt                               | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| *                                        | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| **                                       | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| (F)                                      | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| 1-3+5@                                   | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
| Component                                | LOD/Units                                                                                                                                                        | Method | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference | Ground Water (GW)<br>17/02/2020<br>18/02/2020<br>200218-57<br>21708461 | Ground Water (GW)<br>17/02/2020<br>18/02/2020<br>200218-57<br>21708462 | Ground Water (GW)<br>17/02/2020<br>18/02/2020<br>200218-57<br>21708453 | Ground Water (GW)<br>17/02/2020<br>18/02/2020<br>200218-57<br>21708447 | Ground Water (GW)<br>17/02/2020<br>18/02/2020<br>200218-57<br>21708448 | Ground Water (GW)<br>17/02/2020<br>18/02/2020<br>200218-57<br>21708451 |
| GRO Surrogate % recovery**               | %                                                                                                                                                                | TM245  |                                                                                                                           | 99                                                                     | 111                                                                    | 103                                                                    | 100                                                                    | 98                                                                     | 97                                                                     |
| GRO >C5-C12                              | <50 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <50                                                                    | <50                                                                    | <50                                                                    | <50                                                                    | <50                                                                    | <50                                                                    |
| Methyl tertiary butyl ether (MTBE)       | <3 µg/l                                                                                                                                                          | TM245  |                                                                                                                           | <3                                                                     | <3                                                                     | <3                                                                     | <3                                                                     | <3                                                                     | <3                                                                     |
| Benzene                                  | <7 µg/l                                                                                                                                                          | TM245  |                                                                                                                           | <7                                                                     | <7                                                                     | <7                                                                     | <7                                                                     | <7                                                                     | <7                                                                     |
| Toluene                                  | <4 µg/l                                                                                                                                                          | TM245  |                                                                                                                           | <4                                                                     | <4                                                                     | <4                                                                     | <4                                                                     | <4                                                                     | <4                                                                     |
| Ethylbenzene                             | <5 µg/l                                                                                                                                                          | TM245  |                                                                                                                           | <5                                                                     | <5                                                                     | <5                                                                     | <5                                                                     | <5                                                                     | <5                                                                     |
| m,p-Xylene                               | <8 µg/l                                                                                                                                                          | TM245  |                                                                                                                           | <8                                                                     | <8                                                                     | <8                                                                     | <8                                                                     | <8                                                                     | <8                                                                     |
| o-Xylene                                 | <3 µg/l                                                                                                                                                          | TM245  |                                                                                                                           | <3                                                                     | <3                                                                     | <3                                                                     | <3                                                                     | <3                                                                     | <3                                                                     |
| Sum of detected Xylenes                  | <11 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <11                                                                    | <11                                                                    | <11                                                                    | <11                                                                    | <11                                                                    | <11                                                                    |
| Sum of detected BTEX                     | <28 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <28                                                                    | <28                                                                    | <28                                                                    | <28                                                                    | <28                                                                    | <28                                                                    |
| Aliphatics >C5-C6                        | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aliphatics >C6-C8                        | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aliphatics >C8-C10                       | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aliphatics >C10-C12                      | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aliphatics >C12-C16 (aq)                 | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aliphatics >C16-C21 (aq)                 | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aliphatics >C21-C35 (aq)                 | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | 52                                                                     | <10                                                                    | <10                                                                    | <10                                                                    |
| Total Aliphatics >C12-C35 (aq)           | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | 52                                                                     | <10                                                                    | <10                                                                    | <10                                                                    |
| Aromatics >EC5-EC7                       | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aromatics >EC7-EC8                       | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aromatics >EC8-EC10                      | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aromatics >EC10-EC12                     | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aromatics >EC12-EC16 (aq)                | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aromatics >EC16-EC21 (aq)                | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | <10                                                                    | <10                                                                    | <10                                                                    | <10                                                                    |
| Aromatics >EC21-EC35 (aq)                | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | 31                                                                     | <10                                                                    | <10                                                                    | <10                                                                    |
| Total Aromatics >EC12-EC35 (aq)          | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | 31                                                                     | <10                                                                    | <10                                                                    | <10                                                                    |
| Total Aliphatics & Aromatics >C5-35 (aq) | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <10                                                                    | 83                                                                     | <10                                                                    | <10                                                                    | <10                                                                    |
| Aliphatics >C16-C35 Aqueous              | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           | <10                                                                    | <20                                                                    | 52                                                                     | <10                                                                    | <10                                                                    | <10                                                                    |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |                                                                        |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200218-57 Client Reference: J4175 Report Number: 544710  
Location: Moathouse Farm, Rusper Rd Order Number: 13555JW Superseded Report: 543037

## TPH CWG (W)

| Results Legend                           |                                                                                                                                                                  |        | Customer Sample Ref.                                                                                                      |  | RIVER SAMPLE 4    | WS206             | WS202A            | WS204A            | WS205A            |  |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|--|
| #                                        | ISO17025 accredited.                                                                                                                                             |        | Depth (m)<br>Sample Type<br>Date Sampled<br>Sample Time<br>Date Received<br>SDG Ref<br>Lab Sample No.(s)<br>AGS Reference |  | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) |  |
| M                                        | mCERTS accredited.                                                                                                                                               |        |                                                                                                                           |  | 17/02/2020        | 17/02/2020        | 17/02/2020        | 17/02/2020        | 17/02/2020        |  |
| sq                                       | Aqueous / settled sample.                                                                                                                                        |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| dis.filt                                 | Dissolved / filtered sample.                                                                                                                                     |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| tot.unfilt                               | Total / unfiltered sample.                                                                                                                                       |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| *                                        | Subcontracted - refer to subcontractor report for accreditation status.                                                                                          |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| **                                       | % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery |        |                                                                                                                           |  | 18/02/2020        | 18/02/2020        | 18/02/2020        | 18/02/2020        | 18/02/2020        |  |
| (F)                                      | Trigger breach confirmed                                                                                                                                         |        |                                                                                                                           |  | 200218-57         | 200218-57         | 200218-57         | 200218-57         | 200218-57         |  |
| 1-3+5@                                   | Sample deviation (see appendix)                                                                                                                                  |        |                                                                                                                           |  | 21708452          | 21708460          | 21708455          | 21708456          | 21708458          |  |
| Component                                | LOD/Units                                                                                                                                                        | Method |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
| GRO Surrogate % recovery**               | %                                                                                                                                                                | TM245  |                                                                                                                           |  | 103               | 97                | 104               | 102               | 100               |  |
| GRO >C5-C12                              | <50 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <50               | <50               | <50               | <50               | <50               |  |
| Methyl tertiary butyl ether (MTBE)       | <3 µg/l                                                                                                                                                          | TM245  |                                                                                                                           |  | <3                | <3                | <3                | <3                | <3                |  |
| Benzene                                  | <7 µg/l                                                                                                                                                          | TM245  |                                                                                                                           |  | <7                | <7                | <7                | <7                | <7                |  |
| Toluene                                  | <4 µg/l                                                                                                                                                          | TM245  |                                                                                                                           |  | <4                | <4                | <4                | <4                | <4                |  |
| Ethylbenzene                             | <5 µg/l                                                                                                                                                          | TM245  |                                                                                                                           |  | <5                | <5                | <5                | <5                | <5                |  |
| m,p-Xylene                               | <8 µg/l                                                                                                                                                          | TM245  |                                                                                                                           |  | <8                | <8                | <8                | <8                | <8                |  |
| o-Xylene                                 | <3 µg/l                                                                                                                                                          | TM245  |                                                                                                                           |  | <3                | <3                | <3                | <3                | <3                |  |
| Sum of detected Xylenes                  | <11 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <11               | <11               | <11               | <11               | <11               |  |
| Sum of detected BTEX                     | <28 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <28               | <28               | <28               | <28               | <28               |  |
| Aliphatics >C5-C6                        | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aliphatics >C6-C8                        | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aliphatics >C8-C10                       | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aliphatics >C10-C12                      | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aliphatics >C12-C16 (aq)                 | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | <10               | 17                | <10               | <20               |  |
| Aliphatics >C16-C21 (aq)                 | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 20                | 38                | <10               | <20               |  |
| Aliphatics >C21-C35 (aq)                 | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 262               | 205               | 42                | 87                |  |
| Total Aliphatics >C12-C35 (aq)           | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 282               | 260               | 42                | 87                |  |
| Aromatics >EC5-EC7                       | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aromatics >EC7-EC8                       | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aromatics >EC8-EC10                      | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aromatics >EC10-EC12                     | <10 µg/l                                                                                                                                                         | TM245  |                                                                                                                           |  | <10               | <10               | <10               | <10               | <10               |  |
| Aromatics >EC12-EC16 (aq)                | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | <10               | 18                | <10               | <20               |  |
| Aromatics >EC16-EC21 (aq)                | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 21                | 125               | <10               | <20               |  |
| Aromatics >EC21-EC35 (aq)                | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 280               | 92                | <10               | 101               |  |
| Total Aromatics >EC12-EC35 (aq)          | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 301               | 235               | <10               | 101               |  |
| Total Aliphatics & Aromatics >C5-35 (aq) | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 583               | 495               | 54                | 188               |  |
| Aliphatics >C16-C35 Aqueous              | <10 µg/l                                                                                                                                                         | TM174  |                                                                                                                           |  | <10               | 282               | 243               | 42                | 87                |  |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |
|                                          |                                                                                                                                                                  |        |                                                                                                                           |  |                   |                   |                   |                   |                   |  |



## CERTIFICATE OF ANALYSIS

Validated

SDG: 200218-57

Client Reference: J4175

Report Number: 544710

Location: Moathouse Farm, Rusper Rd

Order Number: 13555JW

Superseded Report: 543037

### Table of Results - Appendix

| Method No | Reference                                                                                                                                                   | Description                                                                                                      |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| TM043     | Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984                                                                                             | Determination of alkalinity in aqueous samples                                                                   |
| TM090     | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060                                                                               | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water                            |
| TM099     | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984                                                                                                               | Determination of Ammonium in Water Samples using the Kone Analyser                                               |
| TM120     | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970                                                                                              | Determination of Electrical Conductivity using a Conductivity Meter                                              |
| TM152     | Method 3125B, AWWA/APHA, 20th Ed., 1999                                                                                                                     | Analysis of Aqueous Samples by ICP-MS                                                                            |
| TM174     | Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria                                                            | Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID                                |
| TM178     | Modified: US EPA Method 8100                                                                                                                                | Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters                                      |
| TM183     | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3                                                                                                    | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry |
| TM184     | EPA Methods 325.1 & 325.2,                                                                                                                                  | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers                      |
| TM241     | Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.                               | The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser                         |
| TM245     | By GC-FID                                                                                                                                                   | Determination of GRO by Headspace in waters                                                                      |
| TM256     | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter                                                |
| TM259     | by HPLC                                                                                                                                                     | Determination of Phenols in Waters and Leachates by HPLC                                                         |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).



# CERTIFICATE OF ANALYSIS

Validated

SDG: 200218-57  
Location: Moathouse Farm, Rusper Rd

Client Reference: J4175  
Order Number: 13555JW

Report Number: 544710  
Superseded Report: 543037

## Test Completion Dates

| Lab Sample No(s)                   | 21708461     | 21708462     | 21708453     | 21708447       | 21708448       | 21708451       | 21708452       | 21708460     | 21708455     | 21708456     |
|------------------------------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|--------------|--------------|--------------|
| Customer Sample Ref.               | BH204        | BH205        | BH208        | RIVER SAMPLE 1 | RIVER SAMPLE 2 | RIVER SAMPLE 3 | RIVER SAMPLE 4 | WS206        | WS202A       | WS204A       |
| AGS Ref.                           |              |              |              |                |                |                |                |              |              |              |
| Depth                              |              |              |              |                |                |                |                |              |              |              |
| Type                               | Ground Water | Ground Water | Ground Water | Ground Water   | Ground Water   | Ground Water   | Ground Water   | Ground Water | Ground Water | Ground Water |
| Alkalinity as CaCO <sub>3</sub>    | 25-Feb-2020  | 25-Feb-2020  | 25-Feb-2020  | 25-Feb-2020    | 25-Feb-2020    | 25-Feb-2020    | 25-Feb-2020    | 25-Feb-2020  | 25-Feb-2020  | 25-Feb-2020  |
| Ammonium Low                       | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020  |
| Anions by Kone (w)                 | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020    | 21-Feb-2020    | 21-Feb-2020    | 21-Feb-2020    | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020  |
| Conductivity (at 20 deg.C)         | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020    | 24-Feb-2020    | 21-Feb-2020    | 21-Feb-2020    | 24-Feb-2020  | 21-Feb-2020  | 21-Feb-2020  |
| Dissolved Metals by ICP-MS         | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020  | 24-Feb-2020  | 25-Feb-2020  |
| Dissolved Organic/Inorganic Carbon | 24-Feb-2020  | 25-Feb-2020  | 21-Feb-2020  | 21-Feb-2020    | 25-Feb-2020    | 21-Feb-2020    | 25-Feb-2020    | 25-Feb-2020  | 21-Feb-2020  | 21-Feb-2020  |
| EPH CWG (Aliphatic) Aqueous GC (W) | 27-Feb-2020  | 28-Feb-2020  | 03-Mar-2020  | 27-Feb-2020    | 28-Feb-2020    | 27-Feb-2020    | 28-Feb-2020    | 03-Mar-2020  | 29-Feb-2020  | 03-Mar-2020  |
| EPH CWG (Aromatic) Aqueous GC (W)  | 27-Feb-2020  | 28-Feb-2020  | 03-Mar-2020  | 27-Feb-2020    | 28-Feb-2020    | 27-Feb-2020    | 28-Feb-2020    | 03-Mar-2020  | 29-Feb-2020  | 03-Mar-2020  |
| GRO by GC-FID (W)                  | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020  |
| Hexavalent Chromium (w)            | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020    | 21-Feb-2020    | 21-Feb-2020    | 21-Feb-2020    | 21-Feb-2020  | 21-Feb-2020  | 21-Feb-2020  |
| Mercury Dissolved                  | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020    | 24-Feb-2020  | 24-Feb-2020  | 24-Feb-2020  |
| Mercury Unfiltered                 | 25-Feb-2020  | 25-Feb-2020  | 25-Feb-2020  | 25-Feb-2020    | 25-Feb-2020    | 25-Feb-2020    | 25-Feb-2020    | 25-Feb-2020  | 25-Feb-2020  | 25-Feb-2020  |
| PAH Spec MS - Aqueous (W)          | 25-Feb-2020  | 26-Feb-2020  | 25-Feb-2020  | 26-Feb-2020    | 26-Feb-2020    | 25-Feb-2020    | 26-Feb-2020    | 25-Feb-2020  | 26-Feb-2020  | 25-Feb-2020  |
| pH Value                           | 23-Feb-2020  | 23-Feb-2020  | 23-Feb-2020  | 23-Feb-2020    | 23-Feb-2020    | 24-Feb-2020    | 23-Feb-2020    | 23-Feb-2020  | 23-Feb-2020  | 23-Feb-2020  |
| Phenols by HPLC (W)                | 24-Feb-2020  | 25-Feb-2020  | 25-Feb-2020  | 25-Feb-2020    | 24-Feb-2020    | 25-Feb-2020    | 24-Feb-2020    | 25-Feb-2020  | 24-Feb-2020  | 25-Feb-2020  |
| Total Metals by ICP-MS             | 26-Feb-2020  | 26-Feb-2020  | 26-Feb-2020  | 26-Feb-2020    | 26-Feb-2020    | 26-Feb-2020    | 26-Feb-2020    | 26-Feb-2020  | 26-Feb-2020  | 26-Feb-2020  |
| TPH CWG (W)                        | 27-Feb-2020  | 28-Feb-2020  | 03-Mar-2020  | 27-Feb-2020    | 28-Feb-2020    | 27-Feb-2020    | 28-Feb-2020    | 03-Mar-2020  | 29-Feb-2020  | 03-Mar-2020  |

| Lab Sample No(s)                   | 21708458     |
|------------------------------------|--------------|
| Customer Sample Ref.               | WS205A       |
| AGS Ref.                           |              |
| Depth                              |              |
| Type                               | Ground Water |
| Alkalinity as CaCO <sub>3</sub>    | 25-Feb-2020  |
| Ammonium Low                       | 24-Feb-2020  |
| Anions by Kone (w)                 | 21-Feb-2020  |
| Conductivity (at 20 deg.C)         | 24-Feb-2020  |
| Dissolved Metals by ICP-MS         | 24-Feb-2020  |
| Dissolved Organic/Inorganic Carbon | 24-Feb-2020  |
| EPH CWG (Aliphatic) Aqueous GC (W) | 09-Mar-2020  |
| EPH CWG (Aromatic) Aqueous GC (W)  | 09-Mar-2020  |
| GRO by GC-FID (W)                  | 24-Feb-2020  |
| Hexavalent Chromium (w)            | 21-Feb-2020  |
| Mercury Dissolved                  | 24-Feb-2020  |
| Mercury Unfiltered                 | 25-Feb-2020  |
| PAH Spec MS - Aqueous (W)          | 26-Feb-2020  |
| pH Value                           | 23-Feb-2020  |
| Phenols by HPLC (W)                | 24-Feb-2020  |
| Total Metals by ICP-MS             | 26-Feb-2020  |
| TPH CWG (W)                        | 09-Mar-2020  |



# CERTIFICATE OF ANALYSIS

|                  |                                |                          |         |                           |        |
|------------------|--------------------------------|--------------------------|---------|---------------------------|--------|
| <b>SDG:</b>      | 200218-57                      | <b>Client Reference:</b> | J4175   | <b>Report Number:</b>     | 544710 |
| <b>Location:</b> | athouse Farm, Rusper Rd, Horsh | <b>Order Number:</b>     | 13555JW | <b>Superseded Report:</b> | 543037 |

## Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH<sub>4</sub> by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

## General

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

### 18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

|   |                                                                             |
|---|-----------------------------------------------------------------------------|
| 1 | Container with Headspace provided for volatiles analysis                    |
| 2 | Incorrect container received                                                |
| 3 | Deviation from method                                                       |
| § | Sampled on date not provided                                                |
| ♦ | Sample holding time exceeded in laboratory                                  |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

### 19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

#### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbestos Type         | Common Name    |
|-----------------------|----------------|
| Chrysotile            | White Asbestos |
| Amosite               | Brown Asbestos |
| Crocidolite           | Blue Asbestos  |
| Fibrous Actinolite    | -              |
| Fibrous Anthophyllite | -              |
| Fibrous Tremolite     | -              |

#### Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

#### Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2107).

**Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.**

**The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.**



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## **Analytical Report Number : 20-79313**

**Project / Site name:** L&G - LNO Horsham

**Samples received on:**

**Your job number:** J4175

**Samples instructed on:** 23/12/2019

**Your order number:**

**Analysis completed by:** 10/01/2020

**Report Issue Number:** 1

**Report issued on:** 10/01/2020

**Samples Analysed:** 6 soil samples

**Signed:** [REDACTED]

Zina Abdul Razzak  
Senior Quality Specialist

**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 20-79313

Project / Site name: L&G - LNO Horsham

| Lab Sample Number                       |       |                       |                         | 1403258       | 1403259       | 1403260       | 1403261       | 1403262       |
|-----------------------------------------|-------|-----------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                       |                         | BH201         | BH201         | BH202         | BH202         | BH203         |
| Sample Number                           |       |                       |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                       |                         | 2.84-2.94     | 9.86-10.14    | 12.48-12.58   | 18.50-18.67   | 6.80-6.98     |
| Date Sampled                            |       |                       |                         | Deviating     | Deviating     | Deviating     | Deviating     | Deviating     |
| Time Taken                              |       |                       |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of<br>detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                   | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | N/A                   | NONE                    | 9.5           | 6.7           | 5.0           | 8.8           | 7.8           |
| Total mass of sample received           | kg    | 0.001                 | NONE                    | 2.0           | 2.0           | 2.0           | 2.0           | 2.0           |

#### General Inorganics

|                                                                         |          |         |        |        |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|--------|--------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS | 7.0    | 7.0   | 7.0   | 7.7   | 7.4   |
| Total Sulphate as SO <sub>4</sub>                                       | %        | 0.005   | MCERTS | 0.023  | 0.017 | 0.024 | 0.018 | 0.016 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS | 0.0097 | 0.032 | 0.055 | 0.012 | 0.027 |
| Total Sulphur                                                           | %        | 0.005   | MCERTS | 0.009  | 0.102 | 0.163 | 0.020 | 0.069 |
| Organic Matter                                                          | %        | 0.1     | MCERTS | 0.4    | 0.9   | 1.0   | 0.7   | 0.9   |

Analytical Report Number: 20-79313

Project / Site name: L&G - LNO Horsham

|                                         |       |                       |                         |               |  |  |  |  |
|-----------------------------------------|-------|-----------------------|-------------------------|---------------|--|--|--|--|
| Lab Sample Number                       |       |                       |                         | 1403263       |  |  |  |  |
| Sample Reference                        |       |                       |                         | BH203         |  |  |  |  |
| Sample Number                           |       |                       |                         | None Supplied |  |  |  |  |
| Depth (m)                               |       |                       |                         | 10.90-11.02   |  |  |  |  |
| Date Sampled                            |       |                       |                         | Deviating     |  |  |  |  |
| Time Taken                              |       |                       |                         | None Supplied |  |  |  |  |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of<br>detection | Accreditation<br>Status |               |  |  |  |  |
| Stone Content                           | %     | 0.1                   | NONE                    | < 0.1         |  |  |  |  |
| Moisture Content                        | %     | N/A                   | NONE                    | 8.5           |  |  |  |  |
| Total mass of sample received           | kg    | 0.001                 | NONE                    | 2.0           |  |  |  |  |

#### General Inorganics

|                                                                            |          |         |        |       |  |  |  |  |
|----------------------------------------------------------------------------|----------|---------|--------|-------|--|--|--|--|
| pH - Automated                                                             | pH Units | N/A     | MCERTS | 7.5   |  |  |  |  |
| Total Sulphate as SO <sub>4</sub>                                          | %        | 0.005   | MCERTS | 0.015 |  |  |  |  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate<br>Equivalent) | g/l      | 0.00125 | MCERTS | 0.023 |  |  |  |  |
| Total Sulphur                                                              | %        | 0.005   | MCERTS | 0.075 |  |  |  |  |
| Organic Matter                                                             | %        | 0.1     | MCERTS | 1.0   |  |  |  |  |

**Analytical Report Number : 20-79313**

**Project / Site name: L&G - LNO Horsham**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)   | Sample Description * |
|-------------------|------------------|---------------|-------------|----------------------|
| 1403258           | BH201            | None Supplied | 2.84-2.94   | Light brown clay.    |
| 1403259           | BH201            | None Supplied | 9.86-10.14  | Grey clay.           |
| 1403260           | BH202            | None Supplied | 12.48-12.58 | Grey clay.           |
| 1403261           | BH202            | None Supplied | 18.50-18.67 | Grey clay and sand.  |
| 1403262           | BH203            | None Supplied | 6.80-6.98   | Grey clay and sand.  |
| 1403263           | BH203            | None Supplied | 10.90-11.02 | Grey clay.           |

Analytical Report Number : 20-79313

Project / Site name: L&G - LNO Horsham

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

| Analytical Test Name                               | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                                                       | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                     | In-house method based on BS1377 Part 2, 1990, Classification tests                                                                | L019-UK/PL    | W                  | NONE                 |
| Organic matter (Automated) in soil                 | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                             | BS1377 Part 3, 1990, Chemical and Electrochemical Tests""                                                                         | L009-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                         | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests                                                  | L099-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                               | In-house method based on British Standard Methods and MCERTS requirements.                                                        | L019-UK/PL    | D                  | NONE                 |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES. | L038-PL       | D                  | MCERTS               |
| Total Sulphate in soil as %                        | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.                                                                   | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""                                                | L038-PL       | D                  | MCERTS               |
| Total Sulphur in soil as %                         | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.                                      | In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil                      | L038-PL       | D                  | MCERTS               |

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

| Sample ID | Other ID | Sample Type | Job      | Sample Number | Sample Deviation Code | test_name | test_ref | Test Deviation code |
|-----------|----------|-------------|----------|---------------|-----------------------|-----------|----------|---------------------|
| BH201     |          | S           | 20-79313 | 1403258       | a                     |           |          |                     |
| BH201     |          | S           | 20-79313 | 1403259       | a                     |           |          |                     |
| BH202     |          | S           | 20-79313 | 1403260       | a                     |           |          |                     |
| BH202     |          | S           | 20-79313 | 1403261       | a                     |           |          |                     |
| BH203     |          | S           | 20-79313 | 1403262       | a                     |           |          |                     |
| BH203     |          | S           | 20-79313 | 1403263       | a                     |           |          |                     |



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## **Analytical Report Number : 20-79314**

**Project / Site name:** L&G - LNO Horsham

**Samples received on:** 23/12/2019

**Your job number:** J4175

**Samples instructed on:** 23/12/2019

**Your order number:**

**Analysis completed by:** 08/01/2020

**Report Issue Number:** 1

**Report issued on:** 08/01/2020

**Samples Analysed:** 4 soil samples

**Signed:** [REDACTED]

Katarzyna Lewicka  
Head of Reporting Section

**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 20-79314

Project / Site name: L&G - LNO Horsham

|                                         |  |  |  |               |                       |                         |               |  |
|-----------------------------------------|--|--|--|---------------|-----------------------|-------------------------|---------------|--|
| Lab Sample Number                       |  |  |  | 1403264       | 1403265               | 1403266                 | 1403267       |  |
| Sample Reference                        |  |  |  | TP234         | TP210                 | TP224                   | TP254         |  |
| Sample Number                           |  |  |  | 2             | 4                     | 3                       | 1             |  |
| Depth (m)                               |  |  |  | 1.80          | 3.10                  | 3.90                    | 0.50          |  |
| Date Sampled                            |  |  |  | Deviating     | Deviating             | Deviating               | Deviating     |  |
| Time Taken                              |  |  |  | None Supplied | None Supplied         | None Supplied           | None Supplied |  |
| Analytical Parameter<br>(Soil Analysis) |  |  |  | Units         | Limit of<br>detection | Accreditation<br>Status |               |  |
| Stone Content                           |  |  |  | %             | 0.1                   | NONE                    | < 0.1         |  |
| Moisture Content                        |  |  |  | %             | N/A                   | NONE                    | 13            |  |
| Total mass of sample received           |  |  |  | kg            | 0.001                 | NONE                    | 0.47          |  |

#### General Inorganics

|                                                                         |          |         |        |       |       |        |       |  |
|-------------------------------------------------------------------------|----------|---------|--------|-------|-------|--------|-------|--|
| pH - Automated                                                          | pH Units | N/A     | MCERTS | 5.9   | 5.4   | 6.0    | 6.6   |  |
| Total Sulphate as SO <sub>4</sub>                                       | %        | 0.005   | MCERTS | 0.028 | 0.027 | 0.023  | 0.054 |  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS | 0.021 | 0.015 | 0.0098 | 0.015 |  |
| Total Sulphur                                                           | %        | 0.005   | MCERTS | 0.013 | 0.009 | 0.009  | 0.023 |  |
| Organic Matter                                                          | %        | 0.1     | MCERTS | < 0.1 | 0.2   | 0.1    | 1.9   |  |

**Analytical Report Number : 20-79314**

**Project / Site name: L&G - LNO Horsham**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description *                           |
|-------------------|------------------|---------------|-----------|------------------------------------------------|
| 1403264           | TP234            | 2             | 1.80      | Light grey sandy clay with gravel.             |
| 1403265           | TP210            | 4             | 3.10      | Light grey gravelly clay.                      |
| 1403266           | TP224            | 3             | 3.90      | Light grey clay.                               |
| 1403267           | TP254            | 1             | 0.50      | Grey loam and clay with gravel and vegetation. |

Analytical Report Number : 20-79314

Project / Site name: L&G - LNO Horsham

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

| Analytical Test Name                               | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                                                       | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                     | In-house method based on BS1377 Part 2, 1990, Classification tests                                                                | L019-UK/PL    | W                  | NONE                 |
| Organic matter (Automated) in soil                 | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                             | BS1377 Part 3, 1990, Chemical and Electrochemical Tests""                                                                         | L009-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                         | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests                                                  | L099-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                               | In-house method based on British Standard Methods and MCERTS requirements.                                                        | L019-UK/PL    | D                  | NONE                 |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES. | L038-PL       | D                  | MCERTS               |
| Total Sulphate in soil as %                        | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.                                                                   | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""                                                | L038-PL       | D                  | MCERTS               |
| Total Sulphur in soil as %                         | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.                                      | In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil                      | L038-PL       | D                  | MCERTS               |

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

| Sample ID | Other ID | Sample Type | Job      | Sample Number | Sample Deviation Code | test_name | test_ref | Test Deviation code |
|-----------|----------|-------------|----------|---------------|-----------------------|-----------|----------|---------------------|
| TP210     | 4        | S           | 20-79314 | 1403265       | a                     |           |          |                     |
| TP224     | 3        | S           | 20-79314 | 1403266       | a                     |           |          |                     |
| TP234     | 2        | S           | 20-79314 | 1403264       | a                     |           |          |                     |
| TP254     | 1        | S           | 20-79314 | 1403267       | a                     |           |          |                     |



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## **Analytical Report Number : 20-80142**

**Project / Site name:** L&G - LNO Horsham

**Samples received on:** 08/01/2020

**Your job number:** J4175

**Samples instructed on:** 08/01/2020

**Your order number:**

**Analysis completed by:** 20/01/2020

**Report Issue Number:** 1

**Report issued on:** 20/01/2020

**Samples Analysed:** 2 soil samples

**Signed:** [REDACTED]

Zina Abdul Razzak  
Senior Quality Specialist

**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 20-80142

Project / Site name: L&G - LNO Horsham

|                                         |       |                       |                         |               |               |  |  |  |
|-----------------------------------------|-------|-----------------------|-------------------------|---------------|---------------|--|--|--|
| Lab Sample Number                       |       |                       |                         | 1407360       | 1407361       |  |  |  |
| Sample Reference                        |       |                       |                         | BH207         | BH207         |  |  |  |
| Sample Number                           |       |                       |                         | None Supplied | None Supplied |  |  |  |
| Depth (m)                               |       |                       |                         | 6.93-7.12     | 15.86-16.07   |  |  |  |
| Date Sampled                            |       |                       |                         | Deviating     | Deviating     |  |  |  |
| Time Taken                              |       |                       |                         | None Supplied | None Supplied |  |  |  |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of<br>detection | Accreditation<br>Status |               |               |  |  |  |
| Stone Content                           | %     | 0.1                   | NONE                    | < 0.1         | < 0.1         |  |  |  |
| Moisture Content                        | %     | N/A                   | NONE                    | 6.6           | 11            |  |  |  |
| Total mass of sample received           | kg    | 0.001                 | NONE                    | 0.84          | 0.67          |  |  |  |

#### General Inorganics

|                                                                         |          |         |        |       |       |  |  |  |
|-------------------------------------------------------------------------|----------|---------|--------|-------|-------|--|--|--|
| pH - Automated                                                          | pH Units | N/A     | MCERTS | 7.6   | 8.6   |  |  |  |
| Total Sulphate as SO <sub>4</sub>                                       | %        | 0.005   | MCERTS | 0.022 | 0.014 |  |  |  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS | 0.060 | 0.015 |  |  |  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS | 60.3  | 14.7  |  |  |  |
| Total Sulphur                                                           | %        | 0.005   | MCERTS | 0.131 | 0.011 |  |  |  |
| Organic Matter                                                          | %        | 0.1     | MCERTS | 1.0   | < 0.1 |  |  |  |



**Analytical Report Number : 20-80142**

**Project / Site name: L&G - LNO Horsham**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)   | Sample Description * |
|-------------------|------------------|---------------|-------------|----------------------|
| 1407360           | BH207            | None Supplied | 6.93-7.12   | Grey clay.           |
| 1407361           | BH207            | None Supplied | 15.86-16.07 | Grey clay.           |

**Analytical Report Number : 20-80142**

**Project / Site name: L&G - LNO Horsham**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                                                       | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                     | In-house method based on BS1377 Part 2, 1990, Classification tests                                                                | L019-UK/PL    | W                  | NONE                 |
| Organic matter (Automated) in soil                 | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                             | BS1377 Part 3, 1990, Chemical and Electrochemical Tests""                                                                         | L009-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                         | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests                                                  | L099-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                               | In-house method based on British Standard Methods and MCERTS requirements.                                                        | L019-UK/PL    | D                  | NONE                 |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES. | L038-PL       | D                  | MCERTS               |
| Total Sulphate in soil as %                        | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.                                                                   | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""                                                | L038-PL       | D                  | MCERTS               |
| Total Sulphur in soil as %                         | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.                                      | In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil                      | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

| Sample ID | Other ID | Sample Type | Job      | Sample Number | Sample Deviation Code | test_name | test_ref | Test Deviation code |
|-----------|----------|-------------|----------|---------------|-----------------------|-----------|----------|---------------------|
| BH207     |          | S           | 20-80142 | 1407360       | a                     |           |          |                     |
| BH207     |          | S           | 20-80142 | 1407361       | a                     |           |          |                     |

**Appendix D**

**Glanville's Drainage Statement (Approved as part of DC/24/0446)**

# DRAINAGE STATEMENT

Mowbray, North Horsham, West Sussex (Phase 1) – Moat Road Extension



Prepared for: Legal & General (Strategic Land North Horsham) Limited  
Ref: 119\_8220585\_JD\_Drainage\_Statement\_MRE

## Document History

| Issue | Date      | Description                       | Prepared By | Checked By |
|-------|-----------|-----------------------------------|-------------|------------|
| 1     | 14 Feb 24 | First draft                       | J Dunesby   | C Salt     |
| 2     | 29 Feb 24 | Amended following client comments | J Dunesby   | C Salt     |
| 3     | 6 Mar 24  | Amended following client comments | J Dunesby   | C Salt     |
|       |           |                                   |             |            |
|       |           |                                   |             |            |
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## Appendices

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| Appendix J: | Exceedance Flow Route Plan                                                 |
| Appendix K: | Approved Site-Wide Foul Water Strategy                                     |

## 1.0 Introduction

- 1.1 This Drainage Statement has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support an application for the approval of reserved matters for the extension of the Phase 1 Primary Road (herein referred to as Moat Road) at the Mowbray development, North Horsham, West Sussex.
- 1.2 Outline planning permission was granted in March 2018 for the following development on Land North of Horsham (planning application reference: DC/16/1677):
- "Outline planning application with all matters reserved except access for a mixed use strategic development to include housing (up to 2,750 dwellings), business park (up to 46,450m<sup>2</sup>), retail, community centre, leisure facilities, education facilities, public open space, landscaping and related infrastructure."*
- 1.3 The first section of Moat Road (previously referred to as the Phase 1 Primary Road in the outline planning permission) was consented under Reserved Matters application DC/20/2345, dated 27 November 2020, and was constructed as part of the initial infrastructure works undertaken for Phase 1 of the Mowbray development. The approval of reserved matters is now sought for the extension of Moat Road westwards (including land to the south for ecology and sustainable drainage purposes) up to, but not including Old Holbrook. The Old Holbrook crossroads located to the west of the Moat Road extension has been consented under the outline planning permission (consented drawing reference 25216/5506/007B).
- 1.4 The description of development is as follows:
- "Application for approval of Reserved Matters pursuant to Condition 5 of Outline Planning Permission DC/16/1677 for the extension of the Phase 1 Primary Road to Old Holbrook, landscaping, SUDS, ecological enhancements, substation, footbridge and the Sub Phase 1D Strategic Landscape Buffer."*
- 1.5 This report provides describes the disposal of surface water run-off generated by the Moat Road extension and adjacent residential parcels and the provision of suitable foul drainage infrastructure to accommodate the disposal of foul effluent generated by the upstream catchments in accordance with Conditions 54 and 55 of the outline planning permission.
- 1.6 Condition 17 of the outline planning permission (with wording as subsequently amended via a Section 96a application reference DC/19/0984) related to the site-wide surface water strategy principles and was discharged in 2019 (application reference DISC/19/0214).

1.7 Condition 54 of the outline planning permission states:

*"Each Reserved Matters application shall be accompanied by a Detailed Surface Water Strategy demonstrating how the principles established in the approved Site Wide-Surface Water Strategy will be achieved within the area covered by that Reserved Matters Application and shall include details of all Sustainable Drainage Systems (SuDS) and their catchment areas and the location, size and appearance of all features such as ponds, basins and swales, details of critical stormwater storage, details of any surface water sewers, the timing of delivery of the infrastructure necessary to deliver the Detailed Surface Water Strategy and details of long-term management and maintenance of the surface water drainage systems, as well as any temporary measures necessary to facilitate development until the approved surface water drainage strategy is provided in full. The development shall be implemented in accordance with the approved Detailed Surface Water Strategy and thereafter managed and maintained in accordance with the approved details."*

1.8 Condition 55 of the outline planning permission states:

*"Each Reserved Matters application shall be accompanied by a foul water drainage scheme (including implementation timetable) for that Reserved Matters Area. The approved foul water drainage scheme shall be implemented for each Reserved Matters Area as approved and no development in that Reserved Matters Area shall be occupied until the foul water drainage system has been completed in accordance with the approved details."*

## 2.0 Existing Situation and Proposed Development

### Site Context

- 2.1 The wider Mowbray development at North Horsham is currently under construction with various applications for the approval of reserved matters for individual infrastructure elements and sub-phases, both under consideration and determined. Prior to development, the wider Mowbray site had a mix of uses, including agricultural land and associated buildings, and dwellings.
- 2.2 The application site is wholly within Phase 1 of the Mowbray development. It is located to the west of the existing section of Moat Road and extends westwards as far as the road known as Old Holbrook, including land to the south for ecology and sustainable drainage purposes. The first section of Moat Road (previously referred to as the Phase 1 Primary Road in the outline planning permission) was consented under Reserved Matters application DC/20/2345, dated 27 November 2020, and was constructed as part of the initial infrastructure works undertaken for Phase 1 of the Mowbray development. A location plan showing the extent of the application site edged in red is provided in Appendix A.
- 2.3 The application site currently comprises previously undeveloped land used in the past for agricultural purposes.

### Existing Drainage Infrastructure

- 2.4 No formal drainage infrastructure exists within the application site boundary, apart from that which serves the already constructed section of Moat Road. Foul and surface water sewers in the south-east corner of the application site have also been designed, approved, and constructed under the S104 agreement for the Southern Loop Road. There is an unnamed watercourse that runs through the application site. The topographical survey (submitted as part of the outline planning application) confirms that surface water run-off from the undeveloped agricultural land within the application site drains overland to this watercourse and others around the site.

### Proposed Development

- 2.5 The proposals for which reserved matters approval is sought comprise the extension of Moat Road westwards to Old Holbrook, together with associated infrastructure. None of the drainage works proposed affect land that is subject to the Section 38 and Section 104 Agreements for the adoption of the first section of Moat Road and its associated infrastructure.
- 2.6 Drawings relevant to drainage that illustrate the proposals are provided in Appendix B, as follows:

Mowbray-GLA-RMA1-PH2-D-C-1001 - Adoption Plan

Mowbray-GLA-RMA1-PH2-D-C-1101 - General Arrangement Layout

Mowbray-GLA-RMA1-PH2-D-C-1102 - Road Levels Layout

Mowbray-GLA-RMA1-PH2-D-C-1103 - Road Longitudinal Sections

### 3.0 Surface Water Drainage

3.1 This section provides details of the proposed disposal arrangements for surface water run-off generated by the proposed development within the application site in accordance with Condition 54 of the outline planning permission. This condition requires each reserved matters application to demonstrate the principles set out in the site-wide surface water drainage strategy, approved through the discharge of Condition 17 of the outline consent (application reference DISC/19/0214). As such, this strategy has been prepared with reference to the approved Site-Wide Surface Water Strategy Report (Rev. A, dated August 2019). The approved strategy drawings are included in Appendix C.

3.2 The application site is split into two main catchment areas, the extension to Moat Road (Catchment MRE), and the future development parcel (RM4) to the south of the road (Catchment RM4), which are discussed further in this section.

#### **Moat Road Extension (Catchment MRE)**

3.3 A section of Moat Road that has already been constructed, along with the extension to Moat Road subject of this reserved matters application, have been designed to discharge to a watercourse, with an offline pond (Pond MREa) providing storage and a flow control restricting discharge to the watercourse. This pond and outfall were approved under application reference DC/22/0369 and has since been constructed.

3.4 The proposed drainage strategy serving the Moat Road extension has therefore been prepared based on the existing drainage infrastructure approved and constructed as part of Moat Road, specifically the pond and associated surface water drainage which will provide conveyance and attenuation of surface water run-off generated by the Moat Road extension. The approved detailed design drawings of the pond are included in Appendix D. The proposed surface water drainage strategy is illustrated on drawing Mowbray-GLA-MRE-PH1-D-C-1201, included in Appendix E.

3.5 The surface water drainage system within the proposed Moat Road extension will solely serve highway infrastructure for which the approval reserved matters is sought under this application, together with surface water run-off from the proposed Old Holbrook crossroads located just outside of the application site boundary to the west. Works to form the Old Holbrook Crossroads, in accordance with the details shown on drawing number 25216/5506/007B, were approved under the outline planning permission (DC/16/1677) and are therefore outside the scope of this application for the approval of reserved matters.

3.6 The impermeable area for this catchment has been taken from the general arrangement drawing included at Appendix B, with the areas detailed in Table 1.

3.7 Since the pond and flow control were approved at planning, designed, and built, the impermeable area of the catchment (comprising the existing section of Moat Road, Moat Road extension and Old Holbrook crossroads) has increased by 45%.

3.8 Given the flow control serving the Moat Road pond has already been constructed, the approved discharge rate utilised within this structure of 5.0 l/s for all storm events has been adopted within the proposed drainage design for Catchment MRE.

- 3.9 InfoDrainage calculations included in Appendix G demonstrate that the Moat Road pond provides attenuation storage for all storm events up to and including the 1 in 100 year storm event, with a 20% allowance for climate change. This demonstrates that the surface water drainage networks and pond can accommodate the increase in catchment area without flooding from surface water or encroaching on the freeboard of the pond.
- 3.10 Whilst Pond MREa has sufficient capacity to accommodate run-off generated by the Moat Road extension, the calculated discharge rates for the respective storm events (which have been reproduced in Table 1 below) highlight that the calculated discharge rate for the 1 in 100 year +CC event exceeds the proposed rate of 5.0l/s.

*Table 1: Proposed and Calculated Discharge Rates*

|                      | Total Catchment Area (ha) | Discharge Rate (l/s) |           |                    |
|----------------------|---------------------------|----------------------|-----------|--------------------|
|                      |                           | 1:2 Year             | 1:30 Year | 1:100 Year +20% CC |
| <b>Approved 2022</b> | 0.253                     | 5.0                  |           |                    |
| <b>Revised 2024</b>  | 0.367                     | 5.0                  | 5.0       | 5.2                |

- 3.11 The increase in impermeable area has been the result of various design revisions for the Moat Road extension, which ultimately increases the surface water run-off volume entering the existing pond and subsequently increases the discharge rate due to an increase in head at the flow control.
- 3.12 However, whilst the discharge rate of the 1 in 100 year +CC event slightly exceeds 5.0l/s, the rate increases by only 4% relative to the additional 45% of impermeable area being accommodated by the pond without increasing its associated risk of flooding. Therefore, the slight increase in discharge rate to what was previously approved is considered to be within acceptable limits.

#### **Development Parcel (Catchment RM4)**

- 3.13 Catchment RM4 comprises the future residential development parcel RM4 located within the application site.
- 3.14 Catchment RM4 will discharge run-off to the existing watercourse with on-site attenuation provided by a basin (Pond ref. RM4a). The route between the basin and the watercourse utilises a surface water sewer located outside of the application boundary, that has already been designed, approved, and constructed under a S104 agreement.
- 3.15 The proposed surface water drainage strategy is illustrated on drawing Mowbray-GLA-MRE-PH1-D-C-1201, included in Appendix E. This strategy has been prepared with reference to the approved Site-Wide Surface Water Strategy Report (Rev. A, August 2019), including the following principles.

#### *Surface Water Outfall*

- 3.16 The site-wide surface water drainage strategy established in accordance with the drainage hierarchy that all discharges from the development will be to the local network of watercourses running through and around the site.
- 3.17 Given the above, it is proposed to discharge surface water run-off generated by the application site to the watercourse running through the site, as per the existing situation.

### Discharge Rate Approach

- 3.18 The site-wide surface water strategy employed a staged discharge approach to restrict discharge from the development to the greenfield run-off rates – Q1 for the 1 in 1 year event and Q100 for the 1 in 100 year plus climate change event. This strategy has been approved and Condition 17 discharged accordingly. As such, a staged discharge approach has been adopted for the drainage infrastructure serving the future residential parcel within the application site.
- 3.19 The approved site-wide surface water strategy calculated greenfield run-off rates as set out in Table 2 and these rates have been adopted for the future residential parcel within the application site.

Table 2: Greenfield Rates

| Return Period | Greenfield Rate |
|---------------|-----------------|
| QBAR          | 5.2 l/s/ha      |
| Q1            | 4.4 l/s/ha      |
| Q30           | 11.8 l/s/ha     |
| Q100          | 16.5 l/s/ha     |

- 3.20 Utilising the impermeable area for RM4 (refer to Table 4), the greenfield run-off rates for the 1 in 1 year, 1 in 30 year, and 1 in 100 year plus climate change events have been determined as detailed in Table 3 and applied within the hydraulic model for catchment RM4 as a staged discharge.

Table 3: Greenfield Run-Off Rates

| Catchment | Pond Ref. | Greenfield Run-Off Rate (l/s) |           |                       |
|-----------|-----------|-------------------------------|-----------|-----------------------|
|           |           | 1:2 Year                      | 1:30 Year | 1:100 Year<br>+20% CC |
| RM4       | RM4a      | 3.4                           | 20.0      | 28.0                  |

### Rainfall Data and Climate Change

- 3.21 The latest FEH 2022 dataset has been adopted.
- 3.22 Condition 17 of the outline application states that a 20% allowance for the effects of climate change should be assessed for surface water drainage systems. As such, a 20% climate change allowance has also been included.
- 3.23 Condition 17 of the outline application also states that an exceedance event equivalent to the 1 in 100 year plus 40% climate change event should also be assessed for surface water drainage systems. As such, this event has been modelled for the drainage system serving the future residential parcel and its outputs discussed later in this report.

### Impermeable Areas

- 3.24 The site-wide surface water drainage strategy calculated impermeable areas based on housing density within each drainage catchment, with an additional allowance for highway infrastructure, where appropriate.
- 3.25 Given the above, and that detailed proposals for the future housing catchment are not available at the time of writing this report, a similar approach is proposed to be adopted for the drainage design for the development parcel within the application site.

- 3.26 A further allowance for urban creep has also been included for residential areas, based on the housing density in the catchment as outlined in West Sussex County Council's (WSCC) Local Standards.
- 3.27 By adopting this design approach and including an allowance for urban creep, the impermeable area detailed within Table 4 has been calculated for RM4.

Table 4: Parcel Impermeable Areas

| Catchment | Contributing<br>Parcels | Pond<br>Ref. | Impermeable Area<br>incl. Urban Creep (ha) |
|-----------|-------------------------|--------------|--------------------------------------------|
| RM4       | 4                       | RM4a         | 1.827                                      |

#### Long-Term Storage

- 3.28 Given the staged discharge approach has been applied within the surface water drainage design for catchment RM4, an assessment of the run-off volumes pre- and post-development has been completed to determine if long term storage is required.
- 3.29 Table 5 below details both the greenfield run-off volume and post-development discharge volume which confirms the discharge volume from RM4 does not increase from pre- to post-development. Therefore, provision of long-term storage is not required.

Table 5: Greenfield Run-Off Volume and Post-Development Discharge Volume

| Catchment | Pond Ref. | Greenfield Run-off<br>Volume (100 Year 6<br>Hour Event) (m <sup>3</sup> ) | Post-Development<br>Discharge Volume (100<br>Year 6 Hour Event) (m <sup>3</sup> ) |
|-----------|-----------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| RM4       | RM4a      | 441.1                                                                     | 414.4                                                                             |

#### Hydraulic Calculations

- 3.30 InfoDrainage calculations for the proposed basin included in Appendix G demonstrate that the basin has been sized to provide attenuation storage for all storm events up to and including the 1 in 100 year storm event, with a 20% allowance for climate change. This demonstrates that the surface water drainage network and basin can accommodate the 1 in 100 year plus 20% climate change storm without flooding from surface water.
- 3.31 The InfoDrainage model has been run with a surcharged outfall in order to represent the condition that the watercourse would be in when in flood as detailed in the attached calculations at Appendix H. The following results were found:
- no flooding of the network upstream of the basin(s) occurs;
  - freeboard in the basins reduces, however no flooding occurs;
  - no flooding occurs around the outfall location; and
  - there is no increase in flow rates off-site.
- 3.32 As such, there is no risk to the proposed residential development in this scenario, and no increase in flood flows off-site.

### **Adoption and Maintenance Measures**

- 3.33 All new surface water infrastructure will be designed and constructed in accordance with the Building Regulations, adoptable standards, and best practice, as appropriate.
- 3.34 The proposed surface water pipe network and associated drainage infrastructure serving the Moat Road extension (Catchment MRE) will be offered for adoption to WSCC as highway authority.
- 3.35 Surface water drainage infrastructure serving RM4 will be offered for adoption by the sewerage undertaker, with the exception of basin RM4a which will remain private and be the responsibility of a management company. This follows the approach taken throughout Phase 1 of the development.
- 3.36 The SuDS Management and Maintenance Plan included in Appendix I outlines typical maintenance tasks for drainage infrastructure. This plan will be implemented by the management company upon completion of the related drainage works associated with Moat Road Extension.

### **Exceedance Flow Routes**

- 3.37 Any surface flooding caused by system failure or during extreme events above the design event which may overload the system will be routed away from the proposed residential parcels. Levels on-site have been designed such that any exceedance flows from drainage infrastructure within the proposed highway will be contained within the highway, with exceedance flows from the proposed basin overtopping at the lowest top of bank level in the south-west corner of the basin and flowing overland toward ditches along Old Hollbrook road. Exceedance flows from the surface water drainage system are shown on the drawing provided in Appendix J.
- 3.38 In addition, an exceedance event of the 1 in 100 year + 40% climate change event has been run within the InfoDrainage model for Catchment RM4 to determine how the proposed drainage infrastructure operates during exceedance and to validate this assessment. The following results were found:
- no flooding of the network upstream of the basin occurs;
  - freeboard in the basins reduce, however no flooding occurs; and
  - no flooding occurs around the outfall location.

## 4.0 Foul Water Drainage

### Site-Wide Principles

- 4.1 The site wide foul water drainage strategy, dated August 2016, submitted within the consented outline planning application (application ref. DC/16/1677) generally follows the topography of the site, draining within various natural catchments. This results in five main proposed pump stations (FWPS1 – FWPS5) indicated within the strategy being required due to an inability to gravitate to the existing Southern Water foul network. Further smaller (and some private) pump stations are located within the development, where required, pumping to these five main pump stations. The approved strategy drawing is included in Appendix K.

### Foul Water Drainage Strategy for Moat Road Extension

- 4.2 The foul water drainage strategy proposed as part of the Moat Road extension has been designed such that the foul water sewers have sufficient capacity to accommodate foul flows generated by the adjacent future residential parcels.
- 4.3 The foul water sewer within the Moat Road extension itself has already been designed, approved and partially built. It will convey some flows generated by the future development parcel (RM4) and discharge into the downstream foul network serving Phase 1. Foul flows will then drain to the adoptable pump station FWPS1 and be pumped off-site.
- 4.4 The majority of flows from the future development parcel (RM4) located within the application site will however convey flows to the foul water sewer located to the south-east which has already been constructed under the Southern Loop Road S104 Agreement. Foul flows will then drain to the adoptable pump station FWPS2 and be pumped off-site.
- 4.5 Both foul water networks discharging flows to pump stations FWPS1 and FWPS2 have been technically approved by Southern Water under a S104 and have been constructed to adoptable standards. Foul water pump stations FWPS1 and FWPS2 have been designed by TT Pumps and Willow Pumps respectively, have subsequently been technically approved by Southern Water and have been constructed to adoptable standards.
- 4.6 It should also be noted that the residential units associated with the future residential parcel (RM4) were always envisaged and the downstream foul water network and foul water pump stations FWPS1 and FWPS2 were subsequently designed to accommodate these units.

### Sewer Adoption

- 4.7 All new foul water infrastructure will be designed in accordance with the Building Regulation Part H, adoptable standards, and best practice, as appropriate.
- 4.8 Where not already subject to a S104 agreement, the proposed foul water network constructed as part of the Moat Road Extension application and serving the adjacent future residential parcels will be offered for adoption by the sewerage undertaker.

## 5.0 Summary and Conclusion

### Summary

- 5.1 This Drainage Statement has been prepared to support an application for the approval of reserved matters for the extension of the Phase 1 Primary Road (Moat Road) at the Mowbray development, North Horsham.
- 5.2 This report demonstrates how suitable measures will be implemented to deal with surface and foul water drainage from the application site and surrounding catchments, in compliance with Conditions 54 and 55 of the outline planning consent DC/16/1677.
- 5.3 The surface water drainage strategy demonstrates that there will be no flooding for all storm events up to and including the 1 in 100 year storm event, with a 20% allowance for the effects of climate change. Flood risk on-site will therefore not increase either on-site or elsewhere as a result of the development.
- 5.4 Foul flows generated by the upstream catchments from the Moat Road extension will be conveyed via adoptable systems, which will discharge flows into the foul drainage networks serving Phase 1 and drain to the adoptable pump stations FWPS1 and FWPS2, which have been built.

### Conclusion

- 5.5 In conclusion, this report has demonstrated that the proposed Moat Road extension:
- will not increase flood risk elsewhere;
  - will employ a surface water drainage strategy based on the principles of sustainable drainage and the approved site wide drainage strategy; and
  - suitable provision for the disposal of foul effluent generated by the upstream catchments has also been demonstrated to be feasible.
- 5.6 On this basis, the proposals are considered to fully comply with National, Regional and Local planning policy such that the requirements of Conditions 54 and 55 of the outline planning consent are met.

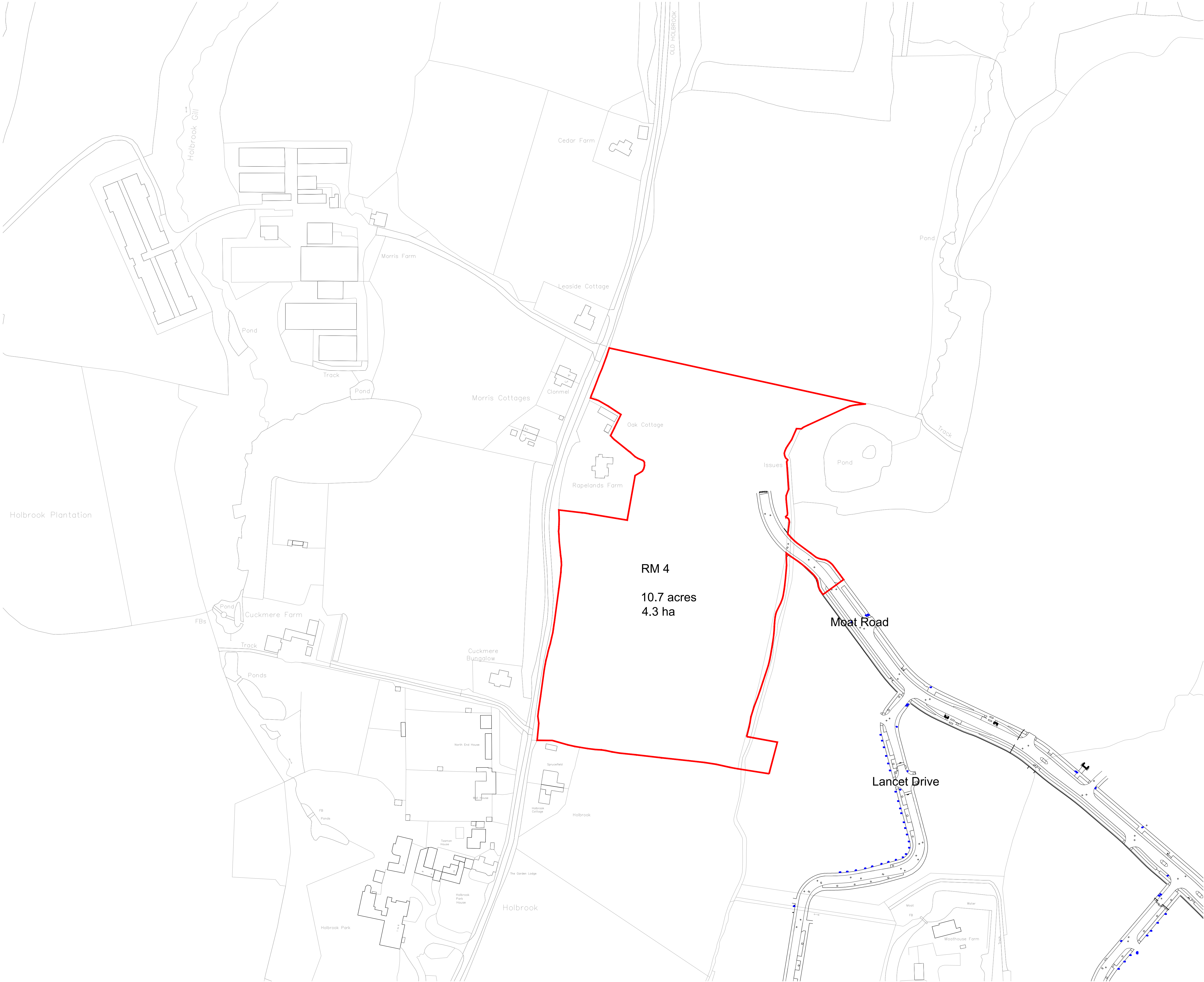
## Appendices



## **Appendix A**

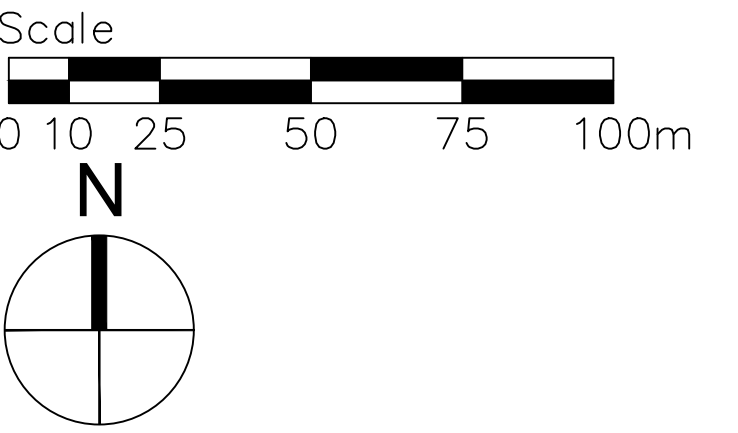
### **Site Location Plan**





Contractors and consultants are not to scale dimensions from this drawing

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AL 1000 17893 Broadway Malyan Limited



| Revision | Date | Description |
|----------|------|-------------|
|          |      |             |

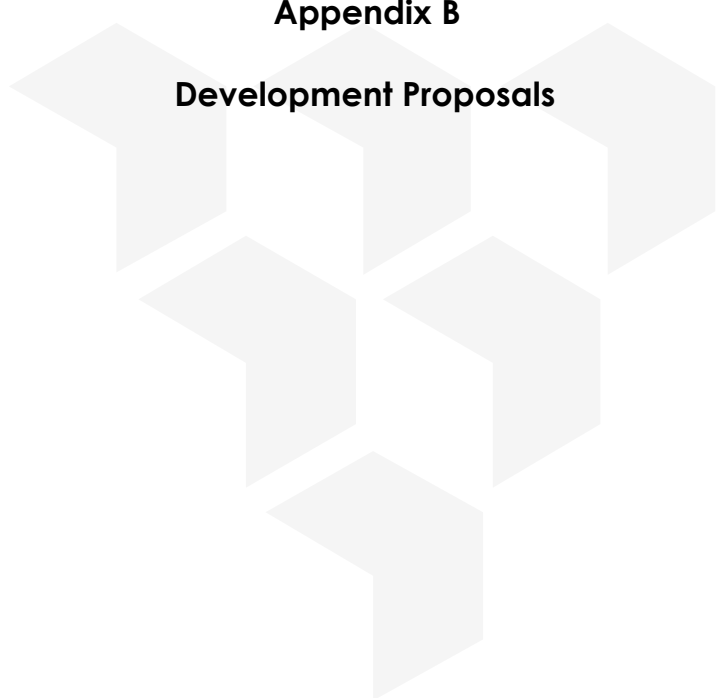
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[www.BroadwayMalyan.com](http://www.BroadwayMalyan.com)

Client  
**Legal and General**  
  
Project  
**Mowbray**

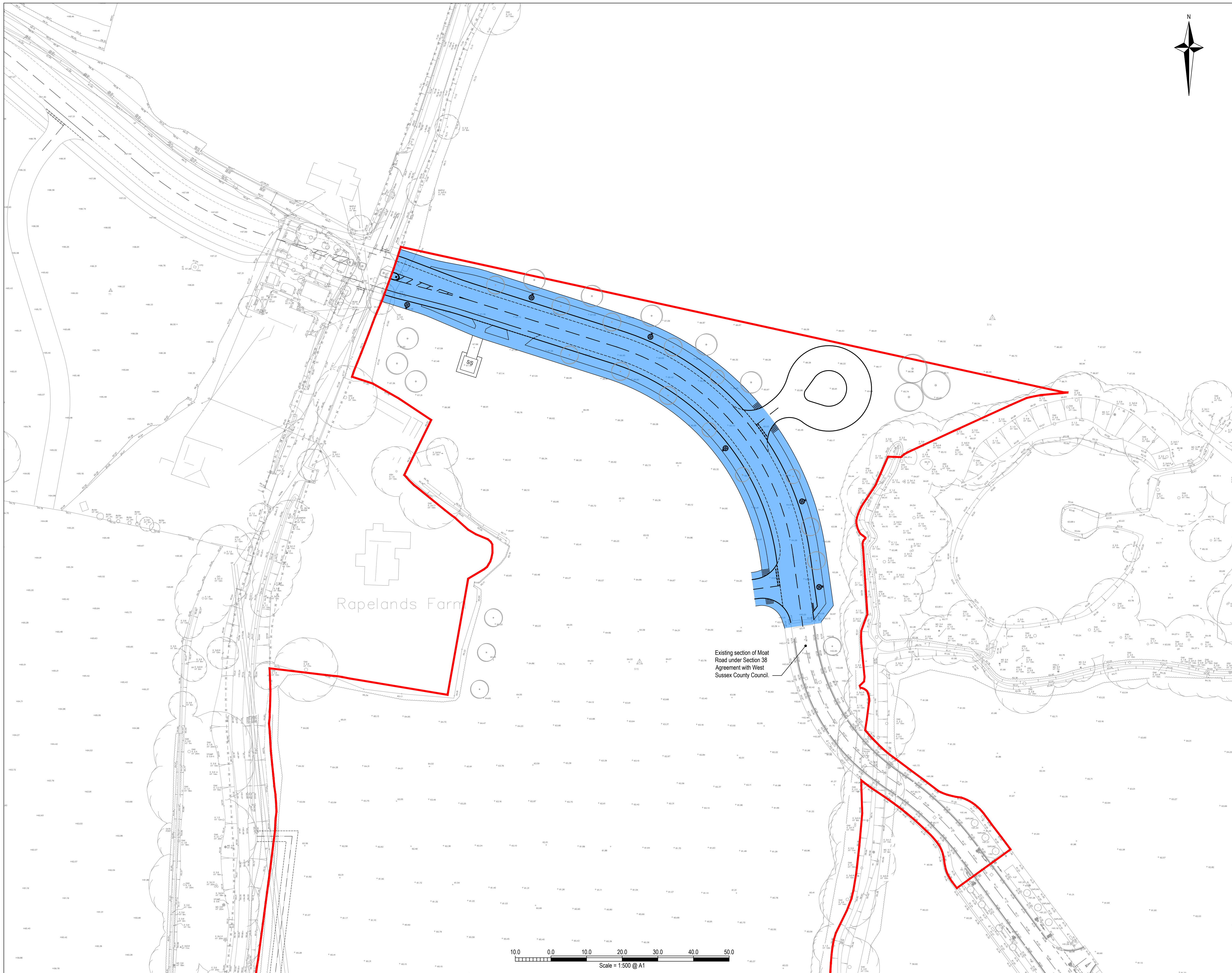
Description  
**Moat Road Extension  
Reserved Matters Application Red Line**

|            |                |          |
|------------|----------------|----------|
| Status     | Planning       |          |
| Scale      | Drawn By       | Date     |
| 1:1250@A1  | MK             | Feb 2024 |
| Job Number | Drawing Number | Revision |
| 34854      | 700            | C        |



## **Appendix B**

### **Development Proposals**



NOTES

1. This drawing is to be read in conjunction with all relevant documents and specifications.
2. Scaleable for planning purposes only.
3. This drawing has been prepared for information purposes only and must not be used for tender of construction purposes.
4. White lining is show indicatively only and subject to detailed design.
5. Tactile paving requirements to be confirmed at detailed design.
6. Adoption plan details the extents of the highway being offered for adoption as part of the Moat Road Extension reserved matters application.

KEY

Extent of highway to be offered for adoption subject to detailed design and amendments requested by WSCC as part of the Section 38 process.

|    |                                     |            |    |    |
|----|-------------------------------------|------------|----|----|
| P5 | Soft landscaping proposals updated. | 06/03/2024 | MM | CS |
|----|-------------------------------------|------------|----|----|

| Rev. | Description | Date | By | Chkd |
|------|-------------|------|----|------|
|------|-------------|------|----|------|



Survey > Plan > Engineer

 Civil Engineering

 Structural Engineering

 Transport Planning

 Highways Engineering

 Building Surveying

 Geomatics

Hertfordshire

Oxfordshire

Cambridgeshire

Bristol

Client: Legal & General  
(Strategic Land North Horsham) Ltd

Project: Mowbray (Land North of Horsham)

Title: Moat Road Extension  
Adoption Plan

Engineer: C. Salt Date: February 2024

Director: J. Birch Scale: 1:500 @ A1

Status: PLANNING

|                          |     |
|--------------------------|-----|
| Drawing No.              | Rev |
| MOW-GLA-MRE-PH1-D-C-1001 | P5  |

WORKS TO FORM THE OLD HOLBROOK CROSSROADS IN ACCORDANCE WITH THE DETAILS SHOWN ON DRAWING NUMBER 25216/5506/007B AS APPROVED BY THE OUTLINE PLANNING PERMISSION (DC/16/1677). ARRANGEMENT SUBJECT TO DETAILED DESIGN AND SHOWN FOR CONTEXT ONLY.

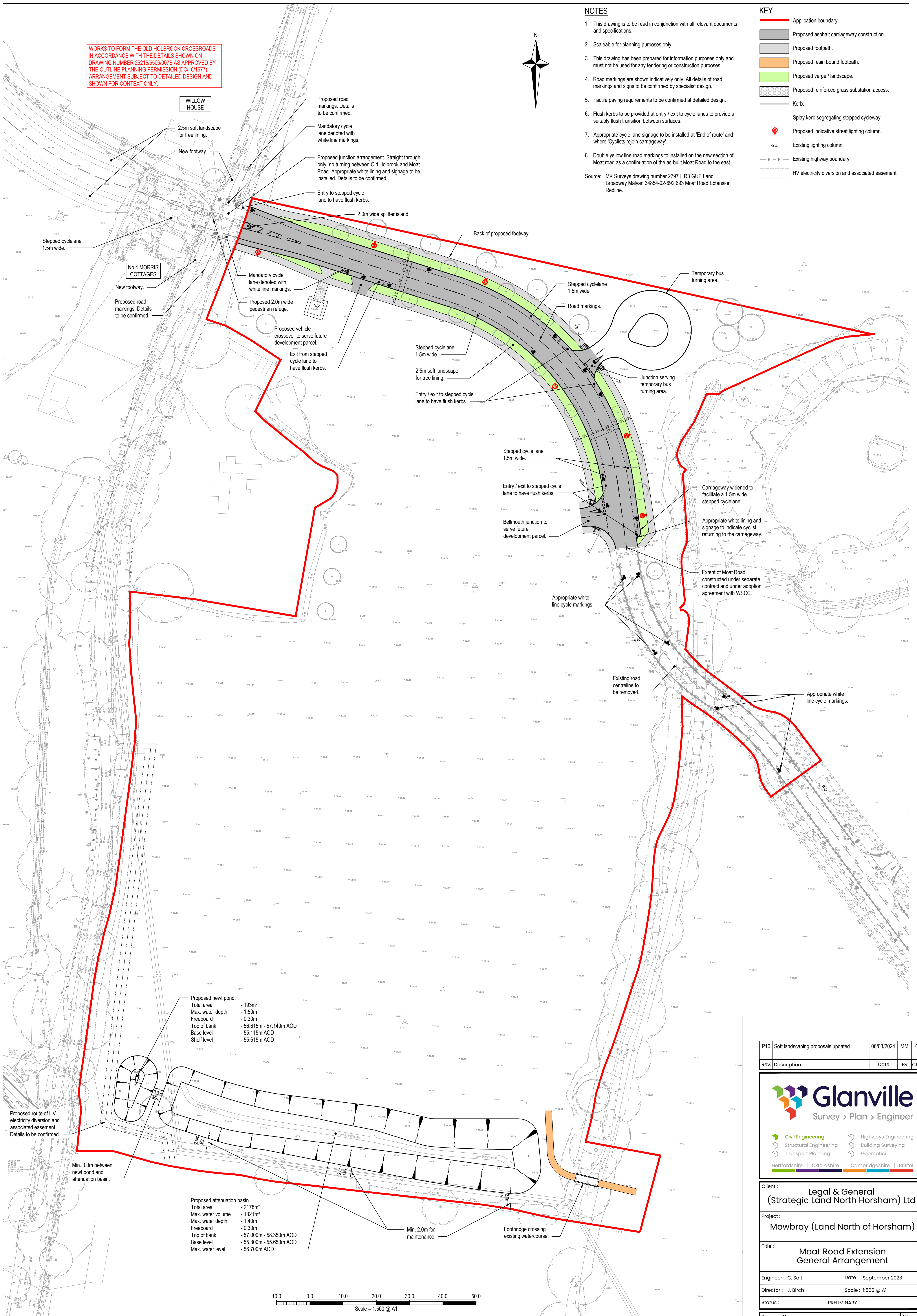
#### NOTES

- This drawing is to be read in conjunction with all relevant documents and specifications.
- Scaleable for planning purposes only.
- This drawing has been prepared for information purposes only and must not be used for any tendering or construction purposes.
- Road markings are shown indicatively only. All details of road markings and signs to be confirmed by specialist design.
- Tactile paving requirements to be confirmed at detailed design.
- Flush kerbs to be provided at entry / exit to cycle lanes to provide a suitably flush transition between surfaces.
- Appropriate cycle lane signage to be installed at 'End of route' and where 'Cyclists rejoin carriageway'.
- Double yellow line road markings to be installed on the new section of Moat Road as a continuation of the as-built Moat Road to the east.

Source: MK Surveys drawing number 27971\_R3 GUE Land.  
Broadway Malayan 34854-02-692 693 Moat Road Extension Redline.

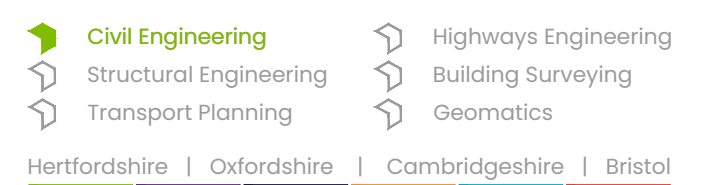
#### KEY

- Application boundary.
- Proposed asphalt carriageway construction.
- Proposed footpath.
- Proposed resin bound footpath.
- Proposed verge / landscape.
- Proposed reinforced grass substation access.
- Kerb.
- Splay kerb segregating stepped cycleway.
- Proposed indicative street lighting column.
- Existing lighting column.
- Existing highway boundary.
- HV electricity diversion and associated easement.



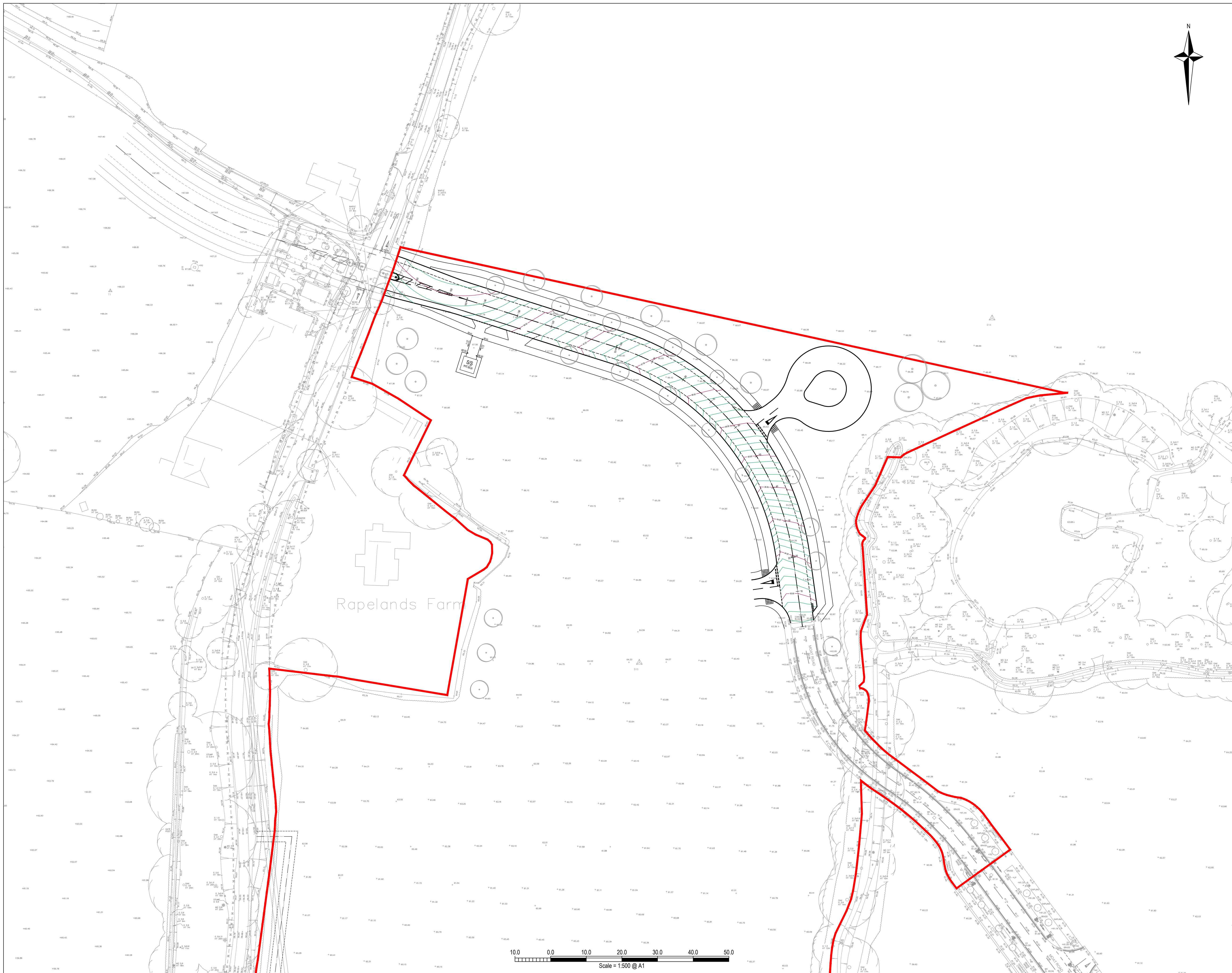
|     |                                     |            |    |    |
|-----|-------------------------------------|------------|----|----|
| P10 | Soft landscaping proposals updated. | 06/03/2024 | MM | CS |
|-----|-------------------------------------|------------|----|----|

| Rev | Description | Date | By | Chkd |
|-----|-------------|------|----|------|
|-----|-------------|------|----|------|



|                     |                                                       |
|---------------------|-------------------------------------------------------|
| Client :            | Legal & General<br>(Strategic Land North Horsham) Ltd |
| Project :           | Mowbray (Land North of Horsham)                       |
| Title :             | Moat Road Extension<br>General Arrangement            |
| Engineer : C. Salt  | Date : September 2023                                 |
| Director : J. Birch | Scale : 1:500 @ A1                                    |
| Status :            | PRELIMINARY                                           |

|             |                          |     |     |
|-------------|--------------------------|-----|-----|
| Drawing No. | MOW-GLA-MRE-PHI-D-C-1101 | Rev | P10 |
|-------------|--------------------------|-----|-----|



NOTES

1. This drawing is to be read in conjunction with all relevant documents and specifications.
2. Scaleable for planning purposes only.
3. This drawing has been prepared for information purposes only and must not be used for tender of construction purposes.
4. Refer to drawing Mowbray-GLA-MRE-PH1-D-C-1103 for road longitudinal sections and chainage references.

KEY

- Application boundary.
- Proposed carriageway contours.
  - Major contours 0.5m
  - Minor contours 0.1m
- Road centerline and chainage references.
- Proposed spot level.

|    |                                     |            |    |    |
|----|-------------------------------------|------------|----|----|
| P4 | Soft landscaping proposals updated. | 06/03/2024 | MM | CS |
|----|-------------------------------------|------------|----|----|

| Rev. | Description | Date | By | Chkd |
|------|-------------|------|----|------|
|------|-------------|------|----|------|



**Glanville**  
Survey > Plan > Engineer

 Civil Engineering

 Structural Engineering

 Transport Planning

 Highways Engineering

 Building Surveying

 Geomatics

Hertfordshire | Oxfordshire | Cambridgeshire | Bristol

Client: **Legal & General  
(Strategic Land North Horsham) Ltd**

Project: **Mowbray (Land North of Horsham)**

Title: **Moat Road Extension  
Levels Layout**

Engineer: C. Salt Date: February 2024

Director: J. Birch Scale: 1:500 @ A1

Status: PLANNING

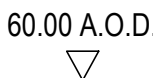
|                          |     |
|--------------------------|-----|
| Drawing No.              | Rev |
| MOW-GLA-MRE-PH1-D-C-1102 | P4  |

## NOTES

- This drawing is to be read in conjunction with all relevant documents and specifications.

## KEY

— — — — — Existing ground profile



Scale 1:500 Horiz. 1:100 Vert

|    |                    |            |    |    |
|----|--------------------|------------|----|----|
| P1 | Preliminary issue. | 14/02/2024 | MM | CS |
|----|--------------------|------------|----|----|



Client : Legal & General  
(Strategic Land North Horsham) Ltd

Project : Mowbray (Land North of Horsham)

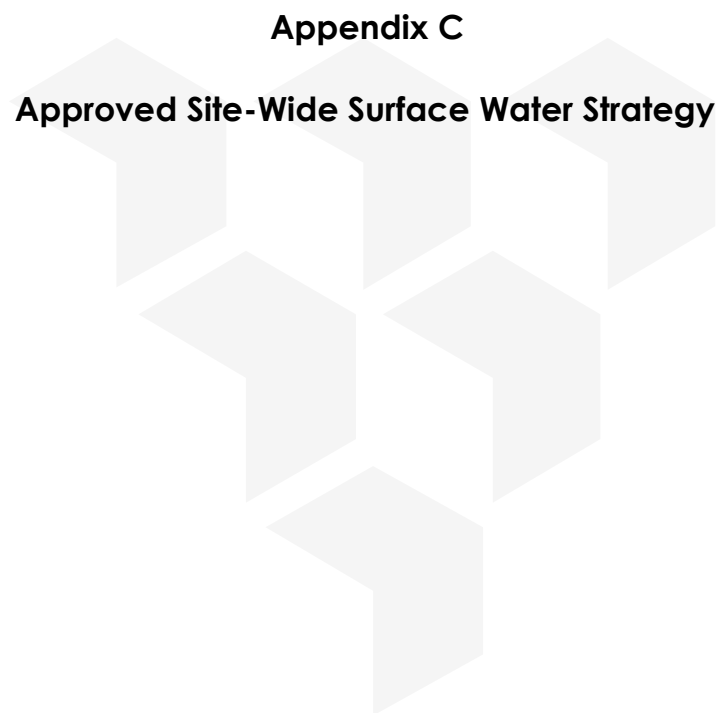
Title : Moat Road Extension  
Road Longitudinal Section

Engineer : C. Salt                      Date : February 2024

Director : J. Birch                      Scale : As Shown @ A1

Status : PLANNING

|                          |     |
|--------------------------|-----|
| Drawing No.              | Rev |
| MOW-GLA-MRE-PH1-D-C-1103 | P   |



## **Appendix C**

### **Approved Site-Wide Surface Water Strategy**



NOTES

1. DRAWING BASED ON BDB DESIGN MASTERPLAN DRG. No. 2153A-160.  
2. AREA OF STATIC WATER/BASE OF TANKS IS 53184m².

KEY

NOTIONAL CORE AREA OF GREAT CRESTED NEWTS

CATCHMENT AREAS

G.C. NEWT PONDS

SWALE

1 IN 100 yr PLUS CLIMATE CHANGE FLOOD EXTENT

PERMANENTLY WET POND

GRASSED ATTENUATION BASIN

SUB-SURFACE TANK

| POND REF      | FLOOD STORAGE VOLUME | STORAGE DEPTH  | COMMENTS                                                                                   |
|---------------|----------------------|----------------|--------------------------------------------------------------------------------------------|
| R18           | 400m3                | 0.8m           |                                                                                            |
| R19           | 611 m3               | 1.0m           |                                                                                            |
| R22A          | 300m3.               | 0.2m           | Existing moat - assuming 200mm mightbe available as on-line attenuation. Subject to survey |
|               |                      |                |                                                                                            |
| R22B, C and D | Combined 3150m3      | Varying depths | Includes limited pitch flooding                                                            |
| R23A          | 1600m3               | 1.5m           |                                                                                            |
| R23B          | 800m3                | 1.5m           |                                                                                            |
| R23C          | 700m3                | 1.5m           |                                                                                            |
| R24A          | 200m3                | 0.2m           |                                                                                            |
| R24B          | 1500m3               | 1m             |                                                                                            |
| R24C          | 1250m3               | 1.5m           |                                                                                            |
| R25A          | 1200m3               | 1m             |                                                                                            |
| R25B          | 1200m3               | 0.8m           |                                                                                            |
| R25C          | 300m3                | 1m             |                                                                                            |
| R27           | 1200m3               | 1.5m           |                                                                                            |
| R52A          | 260m3                | 0.3m           |                                                                                            |
| R52B          | 120m3                | 0.5m           |                                                                                            |
| R52C          | 1000m3               | 1.5m           |                                                                                            |

All volumes subject to detail design.

STORAGE DEPTHS ARE THAT REQUIRED FOR THE ATTENUATION OF A 1 IN 100 YEAR RAINFALL EVENT ALLOWING FOR +20% CLIMATE CHANGE AND AN APPROPRIATE INCREASE FOR URBAN CREEP. STATIC WATER DEPTHS NOT INCLUDED WHICH WILL VARY UP TO A MAXIMUM OF 2m.

|      |                                                                    |          |       |      |      |
|------|--------------------------------------------------------------------|----------|-------|------|------|
| I    | TABLE ADDED                                                        | 23.01.20 | JHW   | IJF  |      |
| H    | PONDS RENUMBERED                                                   | 22.01.20 | JHW   | IJF  |      |
| G    | DRAWING TITLE AMENDED                                              | 10.12.19 | JHW   | IJF  |      |
| F    | CATCHMENTS ADJUSTED TO SUIT RUSPAR ROAD AND MEAT FARM REQUIREMENTS | 29.11.19 | JHW   | IJF  |      |
| E    | REDRAWN TO SUIT NEW MASTERPLAN 2153A-160                           | 21.06.19 | SF    | IJF  |      |
| D    | REDRAWN TO SUIT NEW MASTERPLAN 2153-150Q                           | 26.05.16 | JW    | IJF  |      |
| C    | REDRAWN TO SUIT NEW MASTERPLAN 2153-150N                           | 03.02.16 | JW    | IJF  |      |
| B    | REDRAWN TO SUIT NEW MASTERPLAN 2153-150                            | 02.06.15 | JW    | IJF  |      |
| A    | REDRAWN TO SUIT COMMENTS AND 2153-59B                              | 24.03.15 | JW    | IJF  |      |
| Mark | Revision                                                           | Date     | Drawn | Chkd | Appd |

SCALING NOTE: Do not scale this drawing - any errors or omissions shall be reported to Stantec without delay.  
UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

Drawing Issue Status

FOR PLANNING

LAND NORTH OF HORSHAM  
PLANNING APPLICATION  
SUDS FEATURES AND CATCHMENTS  
SHEET 2 OF 3

Client

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Date of 1st Issue  
24.03.15

Designed

Drawn  
JW

A1 Scale  
1:2500

Checked  
IJF

Approved

Drawing Number  
25216/2007/SK02

Revision  
I

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