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Phase II Contaminated Land Risk Assessment

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Hologic, Crewe Road, Wythenshawe

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May 2020

Site Ref: 6041/HOO-CLRA v1.00

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|                                                      |    |
|------------------------------------------------------|----|
| 1. Introduction .....                                | 3  |
| 2. Description of the Site .....                     | 3  |
| 3. Review Of Previous Reports .....                  | 3  |
| 4. Intrusive Investigation .....                     | 4  |
| 4.1 Intrusive Investigation Objectives .....         | 4  |
| 4.2 Intrusive Investigation Strategy .....           | 4  |
| 4.3 Methods Used For Forming Exploratory Holes ..... | 4  |
| 4.4 Exploratory Hole Programme .....                 | 5  |
| 4.5 Field Sampling and Testing .....                 | 5  |
| 5. Laboratory Investigation .....                    | 6  |
| 5.1 Contamination Testing .....                      | 6  |
| 6. Subsurface Stratigraphy .....                     | 7  |
| 7. Groundwater .....                                 | 7  |
| 8. Part IIA Legislation .....                        | 7  |
| 8.1 Assessment Methodology .....                     | 8  |
| 8.2 Soils .....                                      | 8  |
| 8.3 Subsoil Deposits.....                            | 9  |
| 8.4 Discussion.....                                  | 10 |
| 9. Conceptual Model .....                            | 11 |
| 10. Conclusions .....                                | 12 |
| 10.1 Supplementary Recommendations.....              | 12 |
| Appendices                                           |    |
| A1. Site Plan with Exploratory Hole Locations        |    |
| A2. Proposed Development Plan                        |    |
| B1. Exploratory Hole Logs                            |    |
| C1. SAL Chemical Test Results                        |    |
| C2. Analysis of Results with Assessment Criteria     |    |

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## 1. Introduction

This report is an account of a Phase II Contaminated Land Risk Assessment carried out by GeoAssist Limited at the request of Brennan Consult Ltd on behalf of their Client JDA-Architects for the development at Hologic, Crewe Road, Wythenshawe.

The work was commissioned following acceptance of the quotation and an instruction to proceed issued by Brennan Consult Ltd on behalf of the Client, JDA-Architects on 11th February 2020.

The purpose of this Phase II investigation is to provide information following the conclusions of the phase I report produced by others to ensure that the site:

- Is assessed in accordance with the methodology outlined in CLR11
- Satisfies the relevant requirements of the National Planning Policy Framework March 2012
- Is suitable for the intended proposed land use. In this case, as a Commercial Development

The approximate grid reference for the centre of the site is 380225, 389920. The particular area of the site scheduled for investigation is outlined with a solid red line on the site plan in Appendix A1. The positions of exploratory holes are also indicated on the plan.

## 2. Description of the Site

### 2.1 Present

The site is accessed off Crewe Road, Wythenshawe and currently incorporates warehouse/offices with associated hard standing and soft landscaping. The site to be developed forms an irregular shape and is relatively level with the surrounding area. The vast majority of the area for the proposed development is surfaced with grass.

The site is bounded by Wythenshawe Road to the west and north, a wooded area to the north along with residential properties on Wythenshawe Road, existing warehouse and offices to the east, and Crewe Road and commercial premises to the south.

### 2.2 Proposed

At present the proposed plan for the Site is to construct a warehouse to the west of the existing building together with an extensive hard standing area to the west of the new structure.

### 3. Review Of Previous Reports

It is understood that a limited contaminated land risk assessment has been undertaken by others some years earlier for a development area considerably smaller than that proposed presently. The issues to be covered in the present investigation are to provide information in respect of any potentially unacceptable geo-environmental risks arising from previous land uses in the immediate area and the potential for any sources of contamination and ground gas to impact both present and future receptors, including:

- § Human
- § Controlled waters via established pathways
- § Property
- § Adjoining land

### 4. Intrusive Investigation

#### 4.1 Intrusive Investigation Objectives

The objectives of the site investigation are to collect data to confirm whether or not the soils beneath the site, in their current state, pose a risk by reason of substances within or under the land that;

- § Significant harm is being caused or there is significant possibility of such harm being caused; or
- § Pollution of controlled waters is being, or is likely to be, caused.

Data to describe the following parameters has been collected at a suitable spatial resolution in accordance with BS10175, 2011:

- § Soil Characteristics including type of material
- § Chemical profile of the soil.

These data will be used to refine a conceptual site model and confirm the existence of any established pollutant linkages in accordance with Contaminated Land Report 11 Model Procedures for the Management of Land Contamination, 2004 as well as The Environment Agency Requirements for Land Contamination Reports, 2005.

#### 4.2 Intrusive Investigation Strategy

The ground investigation was carried out in accordance with British Standard 5930: 2015 Code of Practice for Site Investigations and BS BS10175: 2011 Investigation of potentially contaminated sites.

All fieldwork was supervised by suitably qualified GeoAssist Limited Environmental Engineers.

Analytical testing was carried out in an independent UKAS accredited Laboratory.

#### 4.3 Methods Used For Forming Exploratory Holes

The shallow depth exploratory holes undertaken across the site as part of this investigation were established using dynamic windowless sampling methods along with a single light cable tool percussive hole. Information obtained from the Phase I Preliminary Contaminated Land Risk Assessment was used to inform a decision on the actual exploratory hole locations whilst taking account of the positions of proposed hardstanding areas for the final scheme. A plan showing the locations of the exploratory holes established as part of the investigation forms Appendix A1 to this report.

#### 4.4 Exploratory Hole Programme

In total seven exploratory holes for sample recovery were established across the site. The details of the strata in the exploratory holes were recorded by a suitably qualified Professional Engineer.

Upon completion of the fieldwork gas / groundwater monitoring installations were formed in exploratory holes WS1, WS2 and WS4 incorporating a length of plain pipe with a cement/bentonite surround, connected to a length of slotted pipe with a filter sock and pea gravel surround. The headworks comprised of a gas valve and lockable steel cover set in concrete flush with the surrounding ground.

The remaining exploratory holes were backfilled in accordance with the specification in order to prevent the establishment of any potential pollutant pathways and the surface reinstated.

All intrusive work was carried out generally in accordance with:

- § British standard 5930: 2015 Code of Practice for Site Investigations where appropriate
- § British Standard 10175: 2011 where applicable

The fieldwork was completed in two stages. The first stage on 25/02/2020 and the second 17/04/2020.

#### 4.5 Field Sampling and Testing

A non-targeted exploratory hole layout was selected as the most appropriate strategy for this site as the Phase I report had highlighted that the precise location and nature of any potential contaminants of concern was unknown. Representative samples were taken of all the strata encountered in the exploratory holes. Once exposed, samples to be subjected to chemical analysis were immediately placed into a suitable container and stored in a cool dark sample box prior to submission to the laboratory in order to prevent alteration of the composition of the samples. In all cases 500ml wide necked amber glass jars were used with a Teflon faced foamed polyethylene cap liner that offers excellent chemical resistance with the compressibility and sealing properties of polyethylene foam. These containers were filled with sample, sealed and delivered to the laboratory for testing. Samples for volatile compounds were placed into appropriate containers with a screw cap and pierceable septum as supplied by the testing laboratory specifically appropriate to the determinand. These containers were filled with sample sealed and delivered to the laboratory for testing. Observations of groundwater conditions were recorded throughout the fieldwork operations. All other samples were stored in airtight containers and returned to the laboratory for examination and geotechnical testing where necessary.

## 5. Laboratory Investigation

### 5.1 Contamination Testing

In total 5 soil samples were collected and subjected to elements of the suite of chemical testing as outlined below.

All tests were conducted by Concept Life Sciences Laboratories under UKAS Testing No 1549. The results of all the chemical analysis tests are given in Appendix C1.

Table 5.1 Analytical Determinands

| Soils                 |                        |
|-----------------------|------------------------|
| Arsenic               | Acenaphthene           |
| Boron (water-soluble) | Acenaphthylene         |
| Cadmium               | Anthracene             |
| Chromium              | Benzo(a)Anthracene     |
| Chromium VI           | Benzo(a)Pyrene         |
| Copper                | Benzo(b/k)Fluoranthene |
| Cyanide(Total)        | Benzo(ghi)Perylene     |
| Cyanide(free)         | Chrysene               |
| Lead                  | Dibenzo(ah)Anthracene  |
| Mercury               | Fluoranthene           |
| Nickel                | Fluorene               |
| pH                    | Indeno(123-cd)Pyrene   |
| Phenols(Mono)         | Naphthalene            |
| Selenium              | Phenanthrene           |
| SO4(Total)            | Pyrene                 |
| Sulphide              |                        |
| Sulphur(Free)         | Asbestos Screen        |
| Thiocyanate           |                        |
| Zinc                  |                        |

## 6. Subsurface Stratigraphy

The subsoil profile obtained from the exploratory holes consists of made ground to depths between 0.60m to 0.70m over silty sand with fibrous peat horizon over sands and gravels underlain by slightly gravelly sandy very silty clay with siltstone and Mudstone bedrock present at depth.

Further details of the subsurface stratigraphy can be found in the exploratory hole log sheets which form Appendix C1 to this report.

Table 7.0 Subsoil Profile Summary

| Strata                                      | Depth of Strata<br>(m) below ground level |               |
|---------------------------------------------|-------------------------------------------|---------------|
|                                             | Top                                       | Base          |
| Made Ground - MG<br>Variable mixed granular | Ground Level                              | 0.30 to 0.70  |
| Upper silty Sand                            | 0.30 to 0.70                              | 1.30 to 1.70  |
| Fibrous Peat                                | 1.30 to 1.70                              | 1.50 to 2.00  |
| Lower silty Sands and Gravels               | 1.50 to 2.00                              | 3.80 to 4.60  |
| Very silty Clay with gravel                 | 3.80 to 4.60                              | 9.70 to 11.10 |
| Clayey Siltstone and Mudstone               | 9.70 to 11.10                             | Not proven    |

## 7. Groundwater

Groundwater was encountered at depths between 0.80m and 1.80m during the course of the fieldwork. The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.

Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.

Subsequent monitoring of groundwater levels spanning a period from 28<sup>th</sup> February to 1<sup>st</sup> of May 2020 in the standpipe installations at WS1, WS2 and WS4, indicate the groundwater depths range between 1.25m and 2.00m. The indications are that there is an upper groundwater at shallow depth (0.80 to 1.00m) perched on the fibrous peat which inhibits and slows the flow of water to the silty sands and gravels present directly beneath the peat.

## 8. Part IIA Legislation

Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides a new regime for the control of specific threats to health or the environment from existing land contamination. In accordance with the Act and the statutory guidance document on The Contaminated Land (England) Regulations 2000, the definition of contaminated land is intended to embody the concept of risk assessment. Within the meaning of the Act, land is only “contaminated land” where it appears to the regulatory authority, by reason of substances within or under the land that

- § Significant harm is being caused or there is significant possibility of such harm being caused; or
- § Pollution of controlled waters is being, or is likely to be, caused.

The guidance defines “risk” as the combination of

- § The probability, or frequency, of occurrence of a defined hazard (for example, exposure of a property to a substance with the potential to cause harm); and
- § The magnitude (including the seriousness) of the consequences.

For a risk of pollution or environmental harm to occur as a result of ground contamination, all of the following elements must be present:

- § A source, i.e. a substance that is capable of causing pollution or harm;
- § A receptor (or target). i.e. something which could be adversely affected by the contaminant; and
- § A pathway, i.e. a route by which the contaminant can reach the receptor.

If one of these elements is missing there can be no significant risk. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor and the nature of the migration pathway.

### 8.1 Assessment Methodology

In order to assess the environmental risk posed by potential contaminants within the near surface soils considering the final levels of the scheme, GeoAssist Limited undertook an initial screen of the laboratory results using GeoAssist Limited Generic Assessment Criteria (GACs) and where applicable Category 4 Screening Levels or Suitable 4 Use Levels as given as part of Appendix C2.

The GeoAssist Limited GACs and Category 4 Screening levels (C4SLs and S4UL herein) are generated in consideration of the proposed end use of the site, in this case as Commercial land. Contaminant concentrations below the GACs and or C4SLs levels are considered not to warrant further risk assessment. Concentrations of potential contaminants above the GACs and C4SLs levels require further consideration of the potential pollutant linkages. It should be noted that exceedance of the GACs and or C4SLs levels does not necessarily mean that the site requires remediation, although this is dependent on the nature, type and depth of the contaminant and further justification may be required.

### 8.2 Soils

For assessment of the soil analysis results with regard to potential human health risks, GeoAssist Limited GACs are

selected from the following sources which represent minimal risk to site users:

CLEA Soil Guideline Values (SGVs). These values have been developed by the Department of the Environment, Food and Rural Affairs (DEFRA) and the Environment Agency (EA) using the Contaminated Land Exposure Assessment (CLEA) Model, and are considered to be protective of human health (considered to be a potential receptor on site). To date, SGVs have been published for only a limited suite of contaminants, with SGVs derived for each contaminant for three different land use scenarios namely:

- § residential
- § allotments
- § commercial and industrial.

The proposed assessment of this site is as Commercial land as this is considered to be the most appropriate land use scenario for the current and proposed situation on site.

Chartered Institute of Environmental Health Generic Assessment Criteria (LQM CIEH GAC) have been used where available and where CLEA SGVs have not yet been published.

Where CLEA or LQIM CIEH GAC values are not available, Atkins at Risk GAC values have been selected as appropriate all of which represent a minimal risk to receptors.

C4SLs have been used in conjunction with the above GAC and these represent a Low Level of Toxicological Concern (LLTC herein). LLTC represent an intake of low concern that remains suitably protective of health, and definitely does not approach an intake level that could be defined as Significant Possibility of Significant Harm.

The CLEA guidelines state that for each contaminant, apart from lead, the upper 95th percentile of the mean measured concentration should be calculated where appropriate and this value should be compared to the applicable screening value (defined here as the GeoAssist Limited GACs). For Lead impacts the geometric mean should be calculated and compared to the GAC or C4SL.

The CLEA model states that, 'the contamination is assumed to be at or within 1 m of the surface (CLR10 page 10 now withdrawn).' It is considered that at depths greater than 1m, the probability of human exposure via the direct contact pathways are significantly reduced, leaving inhalation of volatile compounds as the dominant pathway. Typically, volatile compounds only significantly affect the indoor inhalation pathway.

### 8.3 Subsoil Deposits

The contaminants that were identified above the GeoAssist Limited GACs, SGVs or C4SLs for a Commercial end use from the GeoAssist Limited investigations are summarised below:

Table 8.3 Summary identified impacts.

| Determinand    | GAC<br>(mg/kg)<br>Comm. | No of<br>tests | No of<br>samples<br>exceeding<br>SGV/GAC/<br>C4SL | Max Value<br>(mg/kg) | Treat as a<br>Hotspot | US95 Value<br>or Geometric<br>Mean<br>(for Lead) | Further<br>action<br>required |
|----------------|-------------------------|----------------|---------------------------------------------------|----------------------|-----------------------|--------------------------------------------------|-------------------------------|
| Non-Identified |                         |                |                                                   |                      |                       |                                                  |                               |

The assessment of chemical analysis summarised in table 8.3 has not identified any potential risks to end users of the site from elevated levels of anthropogenic contamination within the soils on the site.

Abestos fibres have not been detected in any of the samples of made ground submitted for testing.

The results of all the chemical laboratory analytical tests form appendix C1 to this report and the analysis of the results forms appendix C2 to this report.

#### 8.4 Discussion

The assessment of the chemical laboratory analytical tests has identified that the soils on this site pose a low risk to end users when assessed in accordance with the current UK methodology. Consequently, the risk to end user receptors from ground contamination is classified as low given a commercial end use scenario.

##### Construction Workers

The risk to construction workers and site users during the construction phase is assessed to be low as a consequence of the age class of such receptors. Standard PPE & RPE precautions should be employed at the site strip stage including the use of disposable coveralls, particulate masks and damping down to suppress airborne dust where conditions dictate.

##### Groundwater

The results of the soils chemical analysis also indicate that the underlying aquifer beneath the site or any close by controlled waters are highly unlikely to be at risk from the passage of water through the site. especially given the clay aquiclude layer underlying the site.

##### Water Supply Pipes

The risk to building and services from chemical attack is likely to be negligible and as such no special precautions are required to protect the building fabric or services entering the buildings. However, this should be confirmed by a competent person once proposed service routes and locations are known.

## 9. Conceptual Model

The updated conceptual model based on the information and test results presented in this report including contamination sources, pathways and receptors is presented below.

Table 9.0 Amended Conceptual Site Model based on information as presented within this report.

| Potential Source /Hazard                                                                   | Nature of Hazard (Risk Level to site given a commercial end use)      | Contaminants Associated with Source | Potential Pathway                                                          | Potential Receptor                                 |
|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------|
| <i>Previous ON SITE Land uses:</i>                                                         |                                                                       |                                     |                                                                            |                                                    |
| 1. Previous: Greenfield Site Possible infilled pond features                               | Ground contamination<br><b>Low Risk</b><br>Given proposed development | None Identified                     | <del>Dermal Contact</del><br><del>Ingestion</del><br><del>Inhalation</del> | Site Users<br>Construction workers                 |
|                                                                                            | Gas from in-filled ground<br>See Gas Risk Assessment                  | See Gas Risk Assessment             | See Gas Risk Assessment                                                    | Site Users<br>Future Buildings & Services          |
| 2. Current: Factory warehouse and Yard                                                     | Ground contamination<br><b>Low Risk</b><br>Given proposed development | None Identified                     | <del>Dermal Contact</del><br><del>Ingestion</del><br><del>Inhalation</del> | Site Users<br>Construction workers                 |
|                                                                                            | Gas from in-filled ground<br>See Gas Risk Assessment                  | See Gas Risk Assessment             | See Gas Risk Assessment                                                    | Site Users<br>Future Buildings & Services          |
| <i>Previous OFF SITE land uses within 250m as indicated by Historical Plans Including:</i> |                                                                       |                                     |                                                                            |                                                    |
| 3. Infilled Pond                                                                           | Ground contamination<br><b>Low Risk</b>                               | None Identified                     | Dermal Contact<br>Inhalation                                               | Site Users<br>Construction workers                 |
|                                                                                            | Gas from in-filled ground<br>See Gas Risk Assessment                  | See Gas Risk Assessment             | Vertical and Lateral Migration                                             | Site Users<br>Future Buildings & Services          |
| 4. Coal Workings & Mineral Extraction                                                      | Geotechnical Hazard<br><b>Low Risk</b>                                | None                                | Ground Collapse<br>Subsidence                                              | Humans (site users)<br>Future Buildings & Services |
|                                                                                            | Ground contamination<br><b>Low Risk</b>                               | None                                | None                                                                       | Site Users<br>Services                             |
|                                                                                            | Mine Gas<br><b>Low Risk</b>                                           | None                                | None                                                                       | Humans (site users)<br>Future Buildings & Services |

Only sources that have not been present on site in the past or currently are considered within the off site category. Unless the information is deemed to be pertinent to the analysis.

## 10. Conclusions

Evidence presented elsewhere within this report indicates that the ground on this site presents a Low risk to end user receptors given a commercial end use scenario.

Elsewhere,

- § The controlled waters (groundwater) beneath the site are unlikely to become impacted by the passage of water through the soils on site.
- § The site is unlikely to be defined as contaminated land within the context of part IIA.
- § The site, in its present condition, does not represent a significant risk to the environment and is unlikely to become an environmental liability in the future.
- § The risk to building and services from chemical attack is likely to be negligible and as such no special precautions are required to protect the building fabric or services entering the buildings. However, this should be confirmed by a competent person once service routes and locations have been decided.

### 10.1 Supplementary Recommendations

None.



Matthew Benson MSc GMICE  
Geotechnical/Environmental Engineer



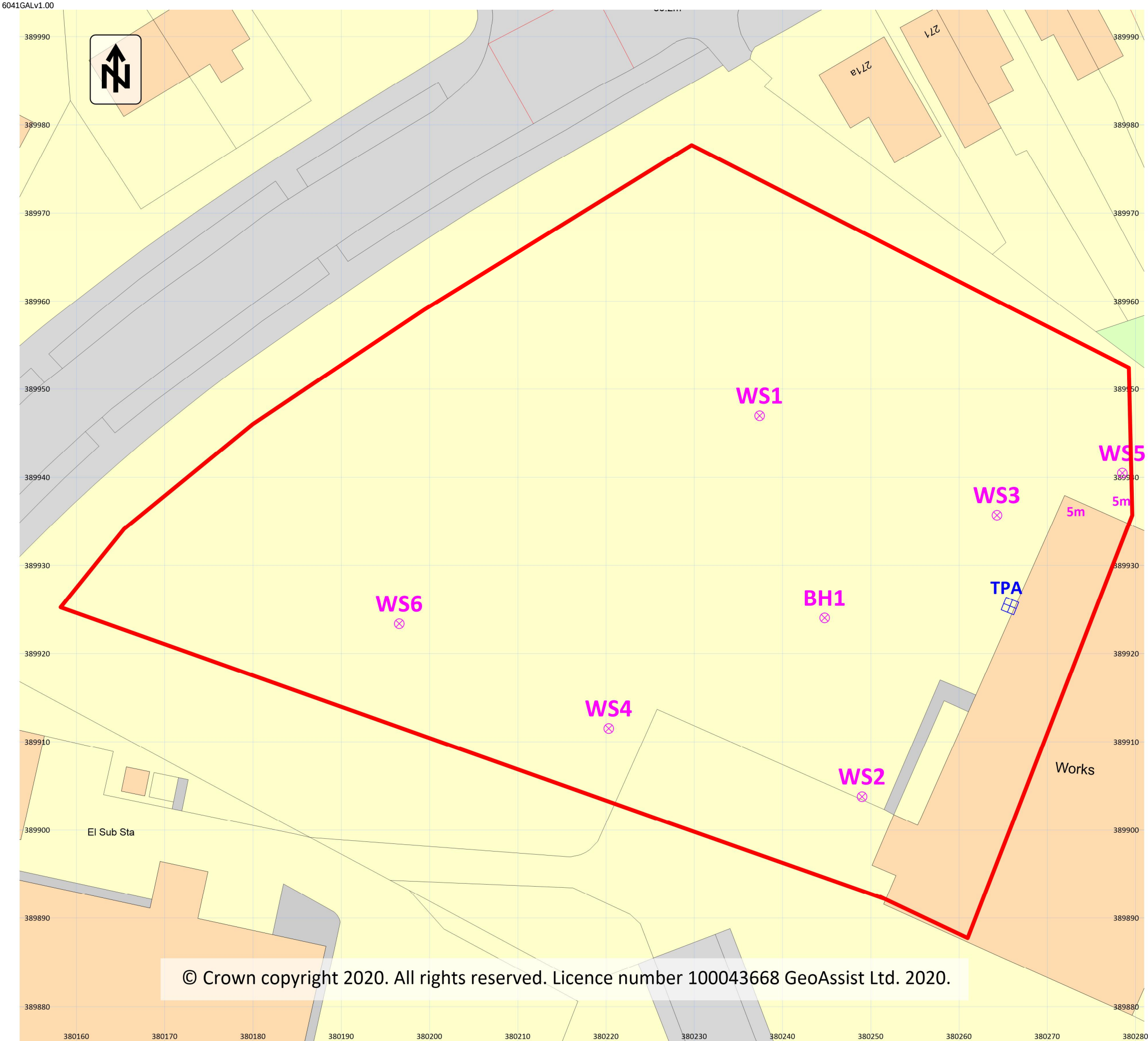
Mark Richardson MSc CEng MICE  
Technical Director

Field investigations have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions are, and can be, variable and have only been tested at isolated locations across the site. Therefore the potential exists for ground conditions to be encountered which are different to those considered in this report. Chemical analysis was conducted for a number of parameters based on an expert understanding of the historical and operational data available at the time and it should not be inferred or otherwise, that other chemical species are not present.

This report has been prepared by GeoAssist Limited with all reasonable professional skill, care and diligence within the terms of the contract with JDA-Architects. The report is confidential to JDA-Architects, their/the named persons advisors and bankers, and GeoAssist Limited accepts no responsibility of whatever nature to third parties to whom this report may be divulged. GeoAssist Limited owns the copyright in this report. All rights are reserved, and unauthorised use is prohibited. JDA-Architects may use the report for their/her/his own purposes.

## Appendix A

### A1 Site Plan with Exploratory Hole Locations



# A1 Site Plan

|                      |                                                                  |
|----------------------|------------------------------------------------------------------|
| Site Name            | Hologic                                                          |
| Location             | Crewe Road, Wythenshawe                                          |
| GeoAssist Ref        | 6041HOO                                                          |
| Client               | JDA-Architects                                                   |
|                      | The Warehouse<br>Saxon Street<br>Denton<br>Manchester<br>M34 3DS |
| Planning Consultant  | Brennan Consult Ltd                                              |
| NGR (centre of site) | 380225,389920                                                    |
| Production Date      | April 2020                                                       |
| Survey Method        |                                                                  |
| Surveyor             | Others                                                           |
| Status               | Final v1.00                                                      |
|                      |                                                                  |
| Base Survey          | OSGB36                                                           |

## Appendix B

### B1 Exploratory Hole Logs

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                            |                            |                                            |               |     |                                                                                                                                                                 |                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------|---------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <b>GeoAssist Limited</b><br><br><b>Consultant:</b><br>Brennan Consult Ltd<br><br><b>Client:</b><br>JDA-Architects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <b>Exploratory Hole Record Sheet</b>                                                                                       |                            |                                            |               |     | <b>Ref: BH1</b><br><br><b>Sheet: 1</b>                                                                                                                          |                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>Project:</b> Hologic<br><b>Location:</b> Crewe Road, Wythenshawe<br><br><b>Equipment:</b><br>Light Cable Percussive Rig |                            |                                            |               |     | <b>Ground Level:</b> 30.17 m.AOD<br><b>Co-ordinates:</b> Easting: 380244.8(m)<br>Northing: 389924(m)<br><b>Dates:</b> 24/02/2020 to 24/02/2020                  |                                                          |
| Drilling Foreman: M Walton<br><b>STRATUM DESCRIPTION</b><br>Engineer/Geologist: M Benson                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | Depth<br>(Thick)<br>(m)                                                                                                    | Reduced<br>Level<br>(mAOD) | Strata<br>Legend/<br>Standpipe<br>Backfill | Samples/Tests |     | Blow<br>Count<br>N/(U)                                                                                                                                          | Field Records                                            |
| 0 Grey/dark brown gravel - MADE GROUND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 0.20                                                                                                                       | 29.97                      |                                            |               |     |                                                                                                                                                                 |                                                          |
| Brown silty fine to medium sand with brick and sandstone fragments - MADE GROUND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | (0.50)<br>0.70                                                                                                             | 29.47                      |                                            | 0.30 0.40     | C1  |                                                                                                                                                                 |                                                          |
| Medium dense brown with dark grey bands silty fine to medium SAND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | (1.00)                                                                                                                     |                            |                                            | 0.70 0.80     | C2  |                                                                                                                                                                 | Standing water in insepction pit at 0.80m depth          |
| Dark grey/black sandy clayey fine fibrous PEAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | 1.70                                                                                                                       | 28.47                      |                                            | 1.00 1.45     | P1  | 15                                                                                                                                                              | P1 at 1.00m - 2,4/3,4,4,4                                |
| 2 Loose grey silty fine to medium SAND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 1.70                                                                                                                       | 28.47                      |                                            | 1.50 1.60     | D1  |                                                                                                                                                                 |                                                          |
| 2 Loose grey silty fine to medium SAND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 2.00                                                                                                                       | 28.17                      |                                            | 1.70 1.80     | D2  |                                                                                                                                                                 |                                                          |
| 3 Medium dense grey slightly silty very sandy rounded to subrounded GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2.00                                                                                                                       | 28.17                      |                                            | 2.00 2.45     | P2  | 5                                                                                                                                                               | P2 at 2.00m - 1,2/1,2,1,1                                |
| 3 Medium dense grey slightly silty very sandy rounded to subrounded GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | (1.00)                                                                                                                     |                            |                                            | 2.50 2.60     | D3  |                                                                                                                                                                 |                                                          |
| 3 Medium dense grey slightly silty very sandy rounded to subrounded GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 3.00                                                                                                                       | 27.17                      |                                            | 3.00 3.45     | CP1 |                                                                                                                                                                 |                                                          |
| 3 Medium dense grey slightly silty very sandy rounded to subrounded GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | (1.10)                                                                                                                     |                            |                                            | 3.00 3.10     | D4  | 17                                                                                                                                                              | CP1 at 3.00m - 3,3/3,4,4,6                               |
| 4 Firm brown medium strength silty CLAY with silt partings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 3.00                                                                                                                       | 27.17                      |                                            | 3.50 3.60     | D5  |                                                                                                                                                                 |                                                          |
| 4 Firm brown medium strength silty CLAY with silt partings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 4.10                                                                                                                       | 26.07                      |                                            | 4.00 4.45     | P3  | 9                                                                                                                                                               | P3 at 4.00m - 1,1/2,2,2,3                                |
| 5 Firm to stiff medium to high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | (1.40)                                                                                                                     |                            |                                            | 4.50 4.60     | D6  |                                                                                                                                                                 |                                                          |
| 5 Firm to stiff medium to high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 5.50                                                                                                                       | 24.67                      |                                            | 5.00 5.45     | U1  | (17)                                                                                                                                                            | Hand vane at 5.00m - 79kPa                               |
| 5 Firm to stiff medium to high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | (4.30)                                                                                                                     |                            |                                            | 5.50 5.60     | D7  |                                                                                                                                                                 | Hand vane at 5.40m - 71kPa<br>Hand vane at 5.50m - 69kPa |
| 6 Stiff to very stiff high to very high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 6.00                                                                                                                       |                            |                                            | 6.00 6.10     | D8  |                                                                                                                                                                 |                                                          |
| 6 Stiff to very stiff high to very high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 6.50                                                                                                                       |                            |                                            | 6.50 6.95     | P4  | 13                                                                                                                                                              | P4 at 6.50m 2,2/3,3,3,4                                  |
| 6 Stiff to very stiff high to very high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 7.00                                                                                                                       |                            |                                            | 7.00 7.10     | D9  |                                                                                                                                                                 |                                                          |
| 6 Stiff to very stiff high to very high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 8.00                                                                                                                       |                            |                                            | 8.00 8.45     | U2  | (22)                                                                                                                                                            | Hand vane at 8.00m - 63kPa                               |
| 6 Stiff to very stiff high to very high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 8.50                                                                                                                       |                            |                                            | 8.50 8.60     | D10 |                                                                                                                                                                 | Hand vane at 8.40m - 81kPa                               |
| 6 Stiff to very stiff high to very high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 9.80                                                                                                                       | 20.37                      |                                            | 9.80 10.25    | P5  | 28                                                                                                                                                              | P5 at 9.80m - 2,2/4,6,8,10                               |
| 10 Stiff to very stiff high to very high strength brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                            |                            |                                            |               |     |                                                                                                                                                                 |                                                          |
| <b>Remarks:</b> 24/01/2020: Inspection pit excavated to 1.00m depth to avoid services.<br>Hard Boring form 11.10m to 11.70m - 30 minutes<br><br>The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.<br>Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall. |  |                                                                                                                            |                            |                                            |               |     | <b>Logged:</b> M Benson<br><b>Date:</b> 26/02/2020<br><b>Checked:</b> M Richardson<br><b>Date:</b> 28/02/2020<br><b>Site Ref:</b> 6041/HOO<br><b>Scale 1:50</b> |                                                          |



**GeoAssist Limited**

**Consultant:**  
Brennan Consult Ltd

**Client:**  
JDA-Architects

## Exploratory Hole Record Sheet

**Project:** Hologic

**Location:** Crewe Road, Wythenshawe

**Equipment:**  
Light Cable Percussive Rig

**Ground Level:** 30.17 m.AOD

**Co-ordinates:** Easting: 380244.8(m)  
Northing: 389924(m)

**Dates:** 24/02/2020 to 24/02/2020

**Ref:** BH1

**Sheet:** 2

Drilling Foreman: M Walton

**STRATUM DESCRIPTION**

Engineer/Geologist: M Benson

| Depth (Thick) (m)                     | Reduced Level (mAOD) | Strata Legend/ Standpipe Backfill | Samples/Tests  |       |                | Field Records                                                                                                                                                           |
|---------------------------------------|----------------------|-----------------------------------|----------------|-------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       |                      |                                   | Depth (m) from | to    | Sample Type/No |                                                                                                                                                                         |
| (1.00)                                |                      |                                   |                |       |                |                                                                                                                                                                         |
| 10.80                                 | 19.37                |                                   | 10.50          | 10.60 | D11            | Hand penetrometer at 10.50m - 172kPa                                                                                                                                    |
| 11.10                                 | 19.07                |                                   | 11.00          | 11.45 | P6             | 68 P6 at 11.00m - 4,7/12,15,16,25                                                                                                                                       |
| (1.05)                                |                      |                                   | 11.70          | 12.15 | P7             | 88 P7 at 11.70m - 7,11/21,15,19,33                                                                                                                                      |
| 12.15                                 | 18.02                |                                   |                |       |                | 24/02/2020: On completion of exploratory hole at 12.15m. Casing at 4.50m. Standing water level Nil. On withdrawal of casing exploratory hole backfilled and reinstated. |
| Exploratory Hole terminated at 12.15m |                      |                                   |                |       |                |                                                                                                                                                                         |

**Remarks:** 24/01/2020: Inspection pit excavated to 1.00m depth to avoid services.  
Hard Boring form 11.10m to 11.70m - 30 minutes

The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.

Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.

**Logged:** M Benson

**Date:** 26/02/2020

**Checked:** M Richardson

**Date:** 28/02/2020

**Site Ref:** 6041/HOO

**Scale 1:50**

GeoAssist Limited

Consultant:

Brennan Consult Ltd

Client:

JDA-Architects

Exploratory Hole Record Sheet

Project: Hologic

Location: Crewe Road, Wythenshawe

Equipment:

Archway Dart Rig and Dynamic Probing

Ground Level: 30.08 m.AOD

Co-ordinates: Easting: 380237.4(m)  
Northing: 389947(m)

Dates: 25/02/2020 to 25/02/2020

Ref: WS1

Sheet: 1

Drilling Foreman: M Walton

Engineer/Geologist: M Benson

STRATUM DESCRIPTION

Depth (Thick) (m)

Reduced Level (mAOD)

Strata Legend/ Standpipe Backfill

Samples/Tests

Depth (m) from to

Sample Type/No

Blow Count N/(U)

Field Records

|   |                                                                              |                 |       |  |  |                                |                 |    |  |  |  |                            |
|---|------------------------------------------------------------------------------|-----------------|-------|--|--|--------------------------------|-----------------|----|--|--|--|----------------------------|
| 0 | Grass over dark grey sandy TOPSOIL                                           | 0.20            | 29.88 |  |  |                                |                 |    |  |  |  |                            |
|   | Dark grey gravelly silty sandy clay - MADE GROUND                            | (0.40)<br>0.60  | 29.48 |  |  |                                |                 |    |  |  |  |                            |
|   | Loose to medium dense brown ironstained slightly silty fine to medium SAND   | (1.00)          |       |  |  | 0.70 0.80<br>0.90 1.00<br>1.00 | D1<br>D2<br>CP1 | 10 |  |  |  | Damp at 0.60m depth        |
|   | Brown clayey fine fibrous PEAT                                               | 1.60            | 28.48 |  |  | 1.60 1.80                      | U1              |    |  |  |  |                            |
|   | Grey gravelly silty SAND                                                     | 1.80            | 28.28 |  |  |                                |                 |    |  |  |  |                            |
|   | Loose to medium dense grey/brown silty SAND and GRAVEL                       | 2.00            | 28.08 |  |  | 2.00                           | CP2             | 10 |  |  |  | Wet from 1.90m depth       |
|   |                                                                              | (1.00)          |       |  |  |                                |                 |    |  |  |  |                            |
|   |                                                                              | 3.00            | 27.08 |  |  | 3.00                           | CP3             | 11 |  |  |  |                            |
|   | Medium dense grey slightly silty SAND and GRAVEL                             | (1.00)          |       |  |  | 3.50 3.60                      | D3              |    |  |  |  |                            |
|   |                                                                              | 4.00            | 26.08 |  |  | 4.00                           | CP4             | 10 |  |  |  |                            |
|   | Medium dense brown silty SAND                                                | (0.60)<br>4.60  | 25.48 |  |  |                                |                 |    |  |  |  |                            |
|   | Firm brown very silty CLAY - Interpreted Stratum                             |                 |       |  |  | 4.80 4.90<br>5.00              | D4<br>CP5       | 8  |  |  |  | Hand vane at 4.80m - 55kPa |
|   | Dynamic Probing from 5.00m depth<br>Interpreted Strata from from 5.00m depth | (2.60)          |       |  |  | 6.00                           | CP6             | 14 |  |  |  |                            |
|   |                                                                              | 7.20            | 22.88 |  |  | 7.00                           | CP7             | 23 |  |  |  |                            |
|   | Firm to stiff very silty CLAY - Interpreted Stratum                          | (2.00)          |       |  |  | 8.00                           | CP8             | 26 |  |  |  |                            |
|   |                                                                              | 9.20            | 20.88 |  |  | 9.00                           | CP9             | 52 |  |  |  |                            |
|   | Stiff to very stiff very silty CLAY - Interpreted Stratum                    | (0.80)<br>10.00 | 20.08 |  |  |                                |                 |    |  |  |  |                            |

Remarks:

The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.

Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.

Logged: M Benson

Date: 26/02/2020

Checked: M Richardson

Date: 28/02/2020

Site Ref: 6041/HOO

Scale 1:50

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <div>GeoAssist Limited</div> <div>Consultant:<br/>Brennan Consult Ltd</div> <div>Client:<br/>JDA-Architects</div>                                                                                                                                                                                                                                                                                                                                                                            | <div>Exploratory Hole Record Sheet</div> <div>Project: Hologic</div> <div>Location: Crewe Road, Wythenshawe</div> |                   |                         |                            |                                                                                                                                                       |               | <div>Ref: WS1</div> <div>Sheet: 2</div>                                                                                                                                  |                                                                                                                                                                                                                                              |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <div>Equipment:<br/>Archway Dart Rig and Dynamic Probing</div>                                                    |                   |                         |                            | <div>Ground Level: 30.08 m.AOD</div> <div>Co-ordinates: Easting: 380237.4(m)<br/>Northing: 389947(m)</div> <div>Dates: 25/02/2020 to 25/02/2020</div> |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <div>Drilling Foreman: M Walton</div> <div>Engineer/Geologist: M Benson</div>                                     |                   | Depth<br>(Thick)<br>(m) | Reduced<br>Level<br>(mAOD) | Strata<br>Legend/<br>Standpipe<br>Backfill                                                                                                            | Samples/Tests |                                                                                                                                                                          | Blow<br>Count<br>N/(U)                                                                                                                                                                                                                       | Field Records |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                   | Depth (m)<br>from |                         |                            |                                                                                                                                                       | to            | Sample<br>Type/No                                                                                                                                                        |                                                                                                                                                                                                                                              |               |
| 10 Clayey SILTSTONE and MUDSTONE - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                   | (0.40)<br>10.40   | 19.68                   |                            | 10.10                                                                                                                                                 | CP10          | 94                                                                                                                                                                       | 25/02/2020: On completion of exploratory hole at 10.40m. Casing at 4.00m. Standing water level at 1.70m depth. On withdrawal of casing groundwater/gas monitoring standpipe installed to 4.00m depth with response zone from 1.00m to 4.00m. |               |
| Exploratory Hole complete at 10.40m                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| -20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               |                                                                                                                                                                          |                                                                                                                                                                                                                                              |               |
| <div>Remarks:</div> <div>The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.<br/>Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.</div> |                                                                                                                   |                   |                         |                            |                                                                                                                                                       |               | <div>Logged: M Benson</div> <div>Date: 26/02/2020</div> <div>Checked: M Richardson</div> <div>Date: 28/02/2020</div> <div>Site Ref: 6041/HOO</div> <div>Scale 1:50</div> |                                                                                                                                                                                                                                              |               |

**Consultant:**

Brennan Consult Ltd

**Client:**

JDA-Architects

Project: Hologic

**Location:** Crewe Road, Wythenshawe

**Equipment:**

## Archway Dart Rig and Dynamic Probing

**Ground Level:** 30.14 m.AOD

**Co-ordinates:** Easting: 380249(m)  
Northing: 389903.8(m)

**Dates:** 25/02/2020 to 25/02/2020

| Drilling Foreman: M Walton   |                                                                              | Depth (Thick) (m) | Reduced Level (mAOD) | Strata Legend/ Standpipe Backfill | Samples/Tests |                | Blow Count N/(U) | Field Records              |
|------------------------------|------------------------------------------------------------------------------|-------------------|----------------------|-----------------------------------|---------------|----------------|------------------|----------------------------|
| STRATUM DESCRIPTION          |                                                                              |                   |                      |                                   | Depth (m)     | Sample Type/No |                  |                            |
| Engineer/Geologist: M Benson |                                                                              |                   |                      |                                   |               |                |                  |                            |
| 0                            | Grey/brown sandy gravel and brick - MADE GROUND                              | (0.70)            |                      |                                   |               |                |                  |                            |
|                              |                                                                              | 0.70              | 29.44                |                                   |               |                |                  |                            |
| 1                            | Medium dense brown ironstained slightly silty fine to medium SAND            | (0.70)            |                      |                                   | 0.70 0.80     | D1             |                  | Damp at 0.70m depth        |
|                              |                                                                              | 1.40              | 28.74                |                                   | 0.90 1.00     | D2             |                  |                            |
|                              |                                                                              | 1.60              | 28.54                |                                   |               | CP1            | 14               |                            |
|                              | Brown clayey fine fibrous PEAT                                               | 1.60              | 28.54                |                                   | 1.50 1.60     | D3             |                  | Wet from 1.60m depth       |
|                              | Grey gravelly silty SAND                                                     | (0.40) 2.00       | 28.14                |                                   |               |                |                  |                            |
| 2                            | Medium dense grey/brown silty SAND and GRAVEL                                |                   |                      |                                   | 2.00          | CP2            | 21               |                            |
|                              |                                                                              |                   |                      |                                   | 2.50 2.60     | D4             |                  |                            |
| 3                            |                                                                              | (1.80)            |                      |                                   | 3.00          | CP3            | 23               |                            |
|                              |                                                                              | 3.80              | 26.34                |                                   |               |                |                  |                            |
| 4                            | Firm to stiff brown very silty CLAY                                          |                   |                      |                                   | 3.90 4.00     | D5             |                  | Hand vane at 3.90m - 98kPa |
|                              |                                                                              |                   |                      |                                   |               | CP4            | 10               |                            |
| 5                            | Dynamic Probing from 5.00m depth<br>Interpreted Strata from from 5.00m depth | (2.20)            |                      |                                   | 5.00          | CP5            | 14               |                            |
|                              |                                                                              | 6.00              | 24.14                |                                   |               |                |                  |                            |
| 6                            | Stiff brown very silty CLAY - Interpreted Stratum                            |                   |                      |                                   | 6.00          | CP6            | 26               |                            |
|                              |                                                                              |                   |                      |                                   |               |                |                  |                            |
| 7                            |                                                                              | (2.50)            |                      |                                   | 7.00          | CP7            | 32               |                            |
|                              |                                                                              |                   |                      |                                   |               |                |                  |                            |
| 8                            |                                                                              |                   |                      |                                   | 8.00          | CP8            | 36               |                            |
|                              |                                                                              | 8.50              | 21.64                |                                   |               |                |                  |                            |
| 9                            | Stiff to very stiff brown very silty CLAY - Interpreted Stratum              |                   |                      |                                   | 9.00          | CP9            | 43               |                            |
|                              |                                                                              | (1.50)            |                      |                                   |               |                |                  |                            |
| 10                           |                                                                              | 10.00             | 20.14                |                                   |               |                |                  |                            |

## Remarks:

The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.

Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.

**Logged:** M Benson

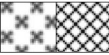
**Date:** 26/02/2020

Checked: M Richardson

**Date:** 28/02/2020

**Site Ref:** 6041/HOO

**Scale 1:50**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--|-------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <div>GeoAssist Limited</div> <div>Consultant:<br/>Brennan Consult Ltd</div> <div>Client:<br/>JDA Architects</div>                                                                                                                                                                                                                                                                                                                                                                            | <div>Exploratory Hole Record Sheet</div>                                 |  |                         |                            |                                                                                                                                                       |                      | <div>Ref: WS2</div>                                                                                                                                                      |               |                                                                                                                                                                                                                                                         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <div>Project: Hologic</div> <div>Location: Crewe Road, Wythenshawe</div> |  |                         |                            |                                                                                                                                                       |                      | <div>Sheet: 2</div>                                                                                                                                                      |               |                                                                                                                                                                                                                                                         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <div>Equipment:<br/>Archway Dart Rig and Dynamic Probing</div>           |  |                         |                            | <div>Ground Level: 30.14 m.AOD</div> <div>Co-ordinates: Easting: 380249(m)<br/>Northing: 389903.8(m)</div> <div>Dates: 25/02/2020 to 25/02/2020</div> |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| <div>Drilling Foreman: M Walton</div> <div>Engineer/Geologist: M Benson</div> <div>STRATUM DESCRIPTION</div>                                                                                                                                                                                                                                                                                                                                                                                 |                                                                          |  | Depth<br>(Thick)<br>(m) | Reduced<br>Level<br>(mAOD) | Strata<br>Legend/<br>Standpipe<br>Backfill                                                                                                            | Samples/Tests        |                                                                                                                                                                          | Field Records |                                                                                                                                                                                                                                                         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                          |  |                         |                            |                                                                                                                                                       | Depth (m)<br>from to | Sample<br>Type/No                                                                                                                                                        |               | Blow<br>Count<br>N/(U)                                                                                                                                                                                                                                  |  |
| 10 Clayey SILTSTONE and MUDSTONE - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                          |  | (0.35)<br>10.35         | 19.79                      |                                                                      | 10.00                | CP10                                                                                                                                                                     | 79            | <div>25/02/2020: On completion of exploratory hole at 10.35m. Casing at 4.00m. Standing water level at 2.20m depth. On withdrawal of casing groundwater/gas monitoring standpipe installed to 4.00m depth with response zone from 1.00m to 4.00m.</div> |  |
| Exploratory Hole complete at 10.35m                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| -20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |  |                         |                            |                                                                                                                                                       |                      |                                                                                                                                                                          |               |                                                                                                                                                                                                                                                         |  |
| <div>Remarks:</div> <div>The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.<br/>Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.</div> |                                                                          |  |                         |                            |                                                                                                                                                       |                      | <div>Logged: M Benson</div> <div>Date: 26/02/2020</div> <div>Checked: M Richardson</div> <div>Date: 28/02/2020</div> <div>Site Ref: 6041/HOO</div> <div>Scale 1:50</div> |               |                                                                                                                                                                                                                                                         |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                               |                             |                                          |                                                  |     |                                                                                                                                                  |                                                                                   |                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------------------|--------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GeoAssist Limited</b><br><b>Consultant:</b><br>Brennan Consult Ltd<br><b>Client:</b><br>JDA-Architects                                                                                                                                                                                                                                                                                                                                                                       |  | <b>Exploratory Hole Record Sheet</b>                                                                                          |                             |                                          |                                                  |     | <b>Ref: WS3</b><br><b>Sheet: 1</b>                                                                                                               |                                                                                   |                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | <b>Project:</b> Hologic<br><b>Location:</b> Crewe Road, Wythenshawe<br><b>Equipment:</b> Archway Dart Rig and Dynamic Probing |                             |                                          |                                                  |     | <b>Ground Level:</b> 30.21 m.AOD<br><b>Co-ordinates:</b> Easting: 380264.3(m)<br>Northing: 389935.7(m)<br><b>Dates:</b> 25/02/2020 to 25/02/2020 |                                                                                   |                                                                                                                                                                 |
| Drilling Foreman: M Walton<br><b>STRATUM DESCRIPTION</b><br>Engineer/Geologist: M Benson                                                                                                                                                                                                                                                                                                                                                                                        |  | <b>Depth (Thick) (m)</b>                                                                                                      | <b>Reduced Level (mAOD)</b> | <b>Strata Legend/ Standpipe Backfill</b> | <b>Samples/Tests</b><br><b>Depth (m) from to</b> |     | <b>Sample Type/No</b>                                                                                                                            | <b>Blow Count N/(U)</b>                                                           | <b>Field Records</b>                                                                                                                                            |
| 0 Grey/brown sandy gravel with brick fragments - MADE GROUND<br>Brown silty sand and brick fragments - MADE GROUND<br>Medium dense brown ironstained silty fine to medium SAND                                                                                                                                                                                                                                                                                                  |  | 0.30<br>(0.40)<br>0.70                                                                                                        | 29.91<br>29.51              |                                          | 0.70 0.80                                        | D1  |                                                                                                                                                  | Damp at 0.70m depth<br><br>Wet from 1.80m depth<br><br>Hand vane at 4.80m - 55kPa |                                                                                                                                                                 |
| 1 Brown clayey fine fibrous PEAT<br>Grey gravelly silty SAND<br>Medium dense grey/brown silty SAND and GRAVEL                                                                                                                                                                                                                                                                                                                                                                   |  | (0.90)<br>1.60<br>1.80<br>2.00                                                                                                | 28.61<br>28.41<br>28.21     |                                          | 1.70 1.80                                        | D2  |                                                                                                                                                  |                                                                                   |                                                                                                                                                                 |
| 2 Medium dense grey slightly silty SAND and GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                              |  | (1.00)<br>3.00                                                                                                                | 27.21                       |                                          |                                                  |     |                                                                                                                                                  |                                                                                   |                                                                                                                                                                 |
| 3 Medium dense grey slightly silty SAND and GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                              |  | (1.00)<br>4.00                                                                                                                | 26.21                       |                                          |                                                  |     |                                                                                                                                                  |                                                                                   |                                                                                                                                                                 |
| 4 Grey gravelly slightly silty SAND<br>Firm brown very silty CLAY - Interpreted Stratum<br><b>Dynamic Probing from 5.00m depth</b><br><b>Interpreted Strata from from 5.00m depth</b>                                                                                                                                                                                                                                                                                           |  | (0.60)<br>4.60<br>(1.40)<br>6.00                                                                                              | 25.61                       |                                          | 6.00                                             | CP1 | 7                                                                                                                                                |                                                                                   |                                                                                                                                                                 |
| 5 Firm to stiff very silty CLAY - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                           |  | (1.20)<br>7.20                                                                                                                | 23.01                       |                                          | 7.00                                             | CP2 | 21                                                                                                                                               |                                                                                   |                                                                                                                                                                 |
| 6 Stiff to very stiff very silty CLAY - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                     |  | (2.50)<br>9.70                                                                                                                | 20.51                       |                                          | 8.00                                             | CP3 | 40                                                                                                                                               |                                                                                   |                                                                                                                                                                 |
| 7 Clayey SILTSTONE and MUDSTONE - Interpreted Stratum<br><b>Exploratory Hole complete at 9.97m</b>                                                                                                                                                                                                                                                                                                                                                                              |  | 9.70<br>9.97                                                                                                                  | 20.24                       |                                          | 9.00                                             | CP4 | 50                                                                                                                                               |                                                                                   |                                                                                                                                                                 |
| 8 Clayey SILTSTONE and MUDSTONE - Interpreted Stratum<br><b>Exploratory Hole complete at 9.97m</b>                                                                                                                                                                                                                                                                                                                                                                              |  | 9.70<br>9.97                                                                                                                  | 20.24                       |                                          | 9.70                                             | CP5 | 112                                                                                                                                              |                                                                                   |                                                                                                                                                                 |
| <b>Remarks:</b><br>The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.<br>Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall. |  |                                                                                                                               |                             |                                          |                                                  |     |                                                                                                                                                  |                                                                                   | <b>Logged:</b> M Benson<br><b>Date:</b> 26/02/2020<br><b>Checked:</b> M Richardson<br><b>Date:</b> 28/02/2020<br><b>Site Ref:</b> 6041/HOO<br><b>Scale 1:50</b> |

|                                                                                                                                                    |                                                                     |                                              |                                                 |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|
| <b>GeoAssist Limited</b><br><br><b>Consultant:</b><br>Brennan Consult Ltd<br><br><b>Client:</b><br>JDA-Architects                                  | <b>Exploratory Hole Record Sheet</b>                                |                                              |                                                 |                                                                        |                                                               |              | <b>Ref:</b> <b>WS4</b><br><br><b>Sheet:</b> 1                                                          |                                             |                            |
|                                                                                                                                                    | <b>Project:</b> Hologic<br><b>Location:</b> Crewe Road, Wythenshawe |                                              |                                                 |                                                                        |                                                               |              | <b>Ground Level:</b> 30.12 m.AOD<br><b>Co-ordinates:</b> Easting: 380220.3(m)<br>Northing: 389911.5(m) |                                             |                            |
|                                                                                                                                                    | <b>Equipment:</b><br>Archway Dart Rig and Dynamic Probing           |                                              |                                                 |                                                                        |                                                               |              | <b>Dates:</b> 25/02/2020 to 25/02/2020                                                                 |                                             |                            |
| Drilling Foreman:    M Walton<br><b>STRATUM DESCRIPTION</b><br>Engineer/Geologist:   M Benson                                                      |                                                                     | <b>Depth</b><br><b>(Thick)</b><br><b>(m)</b> | <b>Reduced</b><br><b>Level</b><br><b>(mAOD)</b> | <b>Strata</b><br><b>Legend/</b><br><b>Standpipe</b><br><b>Backfill</b> | <b>Samples/Tests</b><br><b>Depth (m)</b><br><b>from    to</b> |              | <b>Sample</b><br><b>Type/No</b>                                                                        | <b>Blow</b><br><b>Count</b><br><b>N/(U)</b> | <b>Field Records</b>       |
| 0 Grass over grey brown sandy TOPSOIL                                                                                                              |                                                                     | 0.20                                         | 29.92                                           |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
| Grey/brown silty sand - POSSIBLE MADE GROUND                                                                                                       |                                                                     | (0.40)<br>0.60                               | 29.52                                           |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
| Loose to medium dense brown/dark brown ironstained slightly silty fine to medium SAND                                                              |                                                                     | (0.70)<br>1.30                               | 28.82                                           |                                                                        |                                                               | 0.70    0.80 | D1                                                                                                     |                                             | Damp at 0.60m depth        |
| Brown clayey fine fibrous PEAT                                                                                                                     |                                                                     | 1.50                                         | 28.62                                           |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
| Medium dense brown gravelly silty fine to medium SAND                                                                                              |                                                                     | (0.90)<br>2.40                               | 27.72                                           |                                                                        |                                                               | 1.30    1.40 | U1                                                                                                     |                                             | Wet from 1.60m depth       |
| Medium dense grey slightly silty SAND and GRAVEL                                                                                                   |                                                                     | (2.20)<br>4.60                               | 25.52                                           |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
| Firm brown very silty CLAY - Interpreted Stratum<br><br><b>Dynamic Probing from 5.00m depth</b><br><b>Interpreted Strata from from 5.00m depth</b> |                                                                     | (3.40)<br>8.00                               | 22.12                                           |                                                                        |                                                               | 6.00         | CP1                                                                                                    | 6                                           | Hand vane at 4.70m - 59kPa |
|                                                                                                                                                    |                                                                     | (1.00)<br>9.00                               | 21.12                                           |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
| Firm to stiff very silty CLAY - Interpreted Stratum                                                                                                |                                                                     | (1.00)<br>10.00                              | 20.12                                           |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
| Stiff to very stiff very silty CLAY - Interpreted Stratum                                                                                          |                                                                     |                                              |                                                 |                                                                        |                                                               |              |                                                                                                        |                                             |                            |
|                                                                                                                                                    |                                                                     |                                              |                                                 |                                                                        |                                                               | 7.00         | CP2                                                                                                    | 10                                          |                            |
|                                                                                                                                                    |                                                                     |                                              |                                                 |                                                                        |                                                               | 8.00         | CP3                                                                                                    | 17                                          |                            |
|                                                                                                                                                    |                                                                     |                                              |                                                 |                                                                        |                                                               | 9.00         | CP4                                                                                                    | 33                                          |                            |

**Remarks:**  
  
 The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.  
 Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.

**Logged:**    M Benson  
**Date:**      26/02/2020  
**Checked:**   M Richardson  
**Date:**      28/02/2020  
**Site Ref:**   6041/HOO  
**Scale 1:50**



**Consultant:**  
 Brennan Consult Ltd

**Client:**  
 JDA-Architects

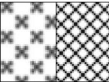
**Exploratory Hole Record Sheet**

**Project:** Hologic  
**Location:** Crewe Road, Wythenshawe

**Equipment:**  
 Archway Dart Rig and Dynamic Probing

**Ground Level:** 30.12 m.AOD  
**Co-ordinates:** Easting: 380220.3(m)  
 Northing: 389911.5(m)  
**Dates:** 25/02/2020 to 25/02/2020

**Ref:** WS4  
**Sheet:** 2

| Drilling Foreman:<br>Engineer/Geologist: | STRATUM DESCRIPTION                                 | Depth<br>(Thick)<br>(m) | Reduced<br>Level<br>(mAOD) | Strata<br>Legend/<br>Standpipe<br>Backfill                                        | Samples/Tests        |                   |                        | Field Records                                                                                                                                                                                                                                |
|------------------------------------------|-----------------------------------------------------|-------------------------|----------------------------|-----------------------------------------------------------------------------------|----------------------|-------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          |                                                     |                         |                            |                                                                                   | Depth (m)<br>from to | Sample<br>Type/No | Blow<br>Count<br>N/(U) |                                                                                                                                                                                                                                              |
| 10                                       | Clayey SILTSTONE and MUDSTONE - Interpreted Stratum | (0.56)                  |                            |  | 10.10                | CP5               | 85                     | 25/02/2020: On completion of exploratory hole at 10.56m. Casing at 4.00m. Standing water level at 1.80m depth. On withdrawal of casing groundwater/gas monitoring standpipe installed to 5.00m depth with response zone from 1.00m to 5.00m. |
|                                          | Exploratory Hole complete at 10.56m                 | 10.56                   | 19.56                      |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 11                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 12                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 13                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 14                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 15                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 16                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 17                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 18                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 19                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |
| 20                                       |                                                     |                         |                            |                                                                                   |                      |                   |                        |                                                                                                                                                                                                                                              |

**Remarks:**  
  
 The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.  
 Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.

**Logged:** M Benson  
**Date:** 26/02/2020  
**Checked:** M Richardson  
**Date:** 28/02/2020  
**Site Ref:** 6041/HOO  
**Scale 1:50**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     |                                              |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>GeoAssist Limited</b><br><br><b>Consultant:</b><br>Brennan Consult Ltd<br><br><b>Client:</b><br>JDA-Architects                                                                                                                                                                                                                                                                                                                                                                   | <b>Exploratory Hole Record Sheet</b>                                |                                              |                                                 |                                                                        |                                                               |     | <b>Ref:</b> <b>WS5</b><br><br><b>Sheet:</b> 1                                                                                                    |                                                                                                                                                                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Project:</b> Hologic<br><b>Location:</b> Crewe Road, Wythenshawe |                                              |                                                 |                                                                        |                                                               |     | <b>Ground Level:</b> 30.27 m.AOD<br><b>Co-ordinates:</b> Easting: 380278.5(m)<br>Northing: 389940.5(m)<br><b>Dates:</b> 17/04/2020 to 17/04/2020 |                                                                                                                                                                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Equipment:</b><br>Archway Dart Rig and Dynamic Probing           |                                              |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
| Drilling Foreman:    M Walton<br><b>STRATUM DESCRIPTION</b><br>Engineer/Geologist:   M Benson                                                                                                                                                                                                                                                                                                                                                                                       |                                                                     | <b>Depth</b><br><b>(Thick)</b><br><b>(m)</b> | <b>Reduced</b><br><b>Level</b><br><b>(mAOD)</b> | <b>Strata</b><br><b>Legend/</b><br><b>Standpipe</b><br><b>Backfill</b> | <b>Samples/Tests</b><br><b>Depth (m)</b><br><b>from    to</b> |     | <b>Sample</b><br><b>Type/No</b>                                                                                                                  | <b>Blow</b><br><b>Count</b><br><b>N/(U)</b>                                                                                                                     | <b>Field Records</b>       |
| 0 Grass over dark grey sandy TOPSOIL                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                     | 0.30                                         | 29.97                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
| Dark brown silty fine to medium SAND                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                     | (0.70)                                       |                                                 |                                                                        | 0.50    0.60                                                  | D1  |                                                                                                                                                  |                                                                                                                                                                 |                            |
| 1 Loose to medium dense brown silty fine to medium SAND                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                     | 1.00                                         | 29.27                                           |                                                                        | 1.00                                                          | CP1 | 12                                                                                                                                               |                                                                                                                                                                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     | (0.60)                                       |                                                 |                                                                        | 1.30    1.40                                                  | D2  |                                                                                                                                                  |                                                                                                                                                                 |                            |
| Dark brown clayey fine fibrous PEAT                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                     | (0.40)                                       |                                                 |                                                                        | 1.80    1.90                                                  | D3  |                                                                                                                                                  |                                                                                                                                                                 |                            |
| 2 Loose to medium dense grey/brown silty SAND and GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                     | 2.00                                         | 28.27                                           |                                                                        | 2.00                                                          | CP2 | 10                                                                                                                                               |                                                                                                                                                                 | Wet from 2.00m depth       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     | (1.80)                                       |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
| 3 Firm to stiff brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                     | 3.80                                         | 26.47                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 | Hand vane at 3.80m - 65kPa |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     | (0.70)                                       |                                                 |                                                                        | 4.00                                                          | CP4 | 6                                                                                                                                                |                                                                                                                                                                 |                            |
| Firm to stiff brown very silty CLAY - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                     | 4.50                                         | 25.77                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 | Hand vane at 4.50m - 86kPa |
| 5 <b>Dynamic Probing from 5.00m depth</b><br><b>Interpreted Strata from from 5.00m depth</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                     |                                              |                                                 |                                                                        | 5.00                                                          | CP5 | 11                                                                                                                                               |                                                                                                                                                                 | Hand vane at 4.80m - 97kPa |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     | (3.00)                                       |                                                 |                                                                        | 6.00                                                          | CP6 | 17                                                                                                                                               |                                                                                                                                                                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     |                                              |                                                 |                                                                        | 7.00                                                          | CP7 | 27                                                                                                                                               |                                                                                                                                                                 |                            |
| 7 Stiff very silty CLAY - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                     | 7.50                                         | 22.77                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     | (1.70)                                       |                                                 |                                                                        | 8.00                                                          | CP8 | 36                                                                                                                                               |                                                                                                                                                                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     |                                              |                                                 |                                                                        | 9.00                                                          | CP9 | 53                                                                                                                                               |                                                                                                                                                                 |                            |
| 9 Stiff to very stiff very silty CLAY - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                     | 9.20                                         | 21.07                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                     | (0.80)                                       |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                     | 10.00                                        | 20.27                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                                                                                                                                 |                            |
| <b>Remarks:</b><br><br>The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.<br>Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall. |                                                                     |                                              |                                                 |                                                                        |                                                               |     |                                                                                                                                                  | <b>Logged:</b> M Benson<br><b>Date:</b> 20/04/2020<br><b>Checked:</b> M Richardson<br><b>Date:</b> 20/04/2020<br><b>Site Ref:</b> 6041/HOO<br><b>Scale 1:50</b> |                            |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
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| <b>GeoAssist Limited</b><br><br><b>Consultant:</b><br>Brennan Consult Ltd<br><br><b>Client:</b><br>JDA-Architects                                                                                                                                                                                                                                                                                                                                                                   |  | <b>Exploratory Hole Record Sheet</b>                                |                                                 |                                                                        |                                                               |     | <b>Ref:</b> <b>WS6</b><br><br><b>Sheet:</b> 1                                                                                                    |                                                            |                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | <b>Project:</b> Hologic<br><b>Location:</b> Crewe Road, Wythenshawe |                                                 |                                                                        | <b>Equipment:</b><br>Archway Dart Rig and Dynamic Probing     |     | <b>Ground Level:</b> 29.71 m.AOD<br><b>Co-ordinates:</b> Easting: 380196.6(m)<br>Northing: 389923.4(m)<br><b>Dates:</b> 17/04/2020 to 17/04/2020 |                                                            |                                                                                                                                                                 |
| Drilling Foreman:    M Walton<br><b>STRATUM DESCRIPTION</b><br>Engineer/Geologist:   M Benson                                                                                                                                                                                                                                                                                                                                                                                       |  | <b>Depth</b><br><b>(Thick)</b><br><b>(m)</b>                        | <b>Reduced</b><br><b>Level</b><br><b>(mAOD)</b> | <b>Strata</b><br><b>Legend/</b><br><b>Standpipe</b><br><b>Backfill</b> | <b>Samples/Tests</b><br><b>Depth (m)</b><br><b>from    to</b> |     | <b>Sample</b><br><b>Type/No</b>                                                                                                                  | <b>Blow</b><br><b>Count</b><br><b>N/(U)</b>                | <b>Field Records</b>                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| 0 Grass over dark grey sandy TOPSOIL                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 0.30                                                                | 29.41                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                            | Wet from 1.70m depth                                                                                                                                            |
| Medium dense dark brown/light brown silty fine to medium SAND                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                     |                                                 |                                                                        | 0.50    0.60                                                  | D1  |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | (1.20)                                                              |                                                 |                                                                        | 1.00                                                          | CP1 | 11                                                                                                                                               |                                                            |                                                                                                                                                                 |
| 1.50    28.21                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| Dark brown clayey fine fibrous PEAT                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 1.70                                                                | 28.01                                           |                                                                        | 1.60    1.70                                                  | D2  |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| Medium dense grey/brown silty SAND and GRAVEL                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                     |                                                 |                                                                        | 2.00                                                          | CP2 | 14                                                                                                                                               |                                                            |                                                                                                                                                                 |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | (2.70)                                                              |                                                 |                                                                        | 3.00                                                          | CP3 | 10                                                                                                                                               |                                                            |                                                                                                                                                                 |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                     |                                                 |                                                                        | 4.00                                                          | CP4 | 28                                                                                                                                               |                                                            |                                                                                                                                                                 |
| 4.40    25.31                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| Firm to stiff brown very silty CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | (0.60)                                                              |                                                 |                                                                        |                                                               |     |                                                                                                                                                  | Hand vane at 4.50m - 102kPa<br>Hand vane at 4.80m - 110kPa |                                                                                                                                                                 |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 5.00                                                                | 24.71                                           |                                                                        | 5.00                                                          | CP5 | 8                                                                                                                                                |                                                            |                                                                                                                                                                 |
| Stiff very silty CLAY - Interpreted Stratum<br><b>Dynamic Probing from 5.00m depth</b><br><b>Interpreted Strata from from 5.00m depth</b>                                                                                                                                                                                                                                                                                                                                           |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | (2.00)                                                              |                                                 |                                                                        | 6.00                                                          | CP6 | 14                                                                                                                                               |                                                            |                                                                                                                                                                 |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 7.00                                                                | 22.71                                           |                                                                        | 7.00                                                          | CP7 | 19                                                                                                                                               |                                                            |                                                                                                                                                                 |
| Stiff to very stiff very silty CLAY - Interpreted Stratum                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | (3.00)                                                              |                                                 |                                                                        | 8.00                                                          | CP8 | 31                                                                                                                                               |                                                            |                                                                                                                                                                 |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                     |                                                 |                                                                        | 9.00                                                          | CP9 | 38                                                                                                                                               |                                                            |                                                                                                                                                                 |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | 10.00                                                               | 19.71                                           |                                                                        |                                                               |     |                                                                                                                                                  |                                                            |                                                                                                                                                                 |
| <b>Remarks:</b><br><br>The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.<br>Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall. |  |                                                                     |                                                 |                                                                        |                                                               |     |                                                                                                                                                  |                                                            | <b>Logged:</b> M Benson<br><b>Date:</b> 20/04/2020<br><b>Checked:</b> M Richardson<br><b>Date:</b> 20/04/2020<br><b>Site Ref:</b> 6041/HOO<br><b>Scale 1:50</b> |

**Logged:** M Benson  
**Date:** 20/04/2020  
**Checked:** M Richardson  
**Date:** 20/04/2020  
**Site Ref:** 6041/HOO  
**Scale 1:50**

## Appendix C

- C1 SAL Chemical Test Results
- C2 Analysis of Results with Assessment Criteria



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## **Analytical Report Number : 20-89572**

|                             |                                  |                               |            |
|-----------------------------|----------------------------------|-------------------------------|------------|
| <b>Project / Site name:</b> | Hologic, Crewe Road, Wythenshawe | <b>Samples received on:</b>   | 27/02/2020 |
| <b>Your job number:</b>     | 6041-HOO                         | <b>Samples instructed on:</b> | 27/02/2020 |
| <b>Your order number:</b>   | 2200227                          | <b>Analysis completed by:</b> | 09/03/2020 |
| <b>Report Issue Number:</b> | 1                                | <b>Report issued on:</b>      | 09/03/2020 |
| <b>Samples Analysed:</b>    | 5 soil samples                   |                               |            |

**Signed:** 

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.

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Page 1 of 4



4041



Environmental Science

Analytical Report Number: 20-89572

Project / Site name: Hologic, Crewe Road, Wythenshawe

Your Order No: 2200227

| Lab Sample Number                    | 1456382       | 1456383            | 1456384              | 1456385       | 1456386       |
|--------------------------------------|---------------|--------------------|----------------------|---------------|---------------|
| Sample Reference                     | BH1-C1        | WS1-C1             | WS2-C1               | WS3-C1        | WS4-C1        |
| Sample Number                        | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Depth (m)                            | 0.30          | 0.50               | 0.50                 | 0.40          | 0.50          |
| Date Sampled                         | 26/02/2020    | 26/02/2020         | 26/02/2020           | 26/02/2020    | 26/02/2020    |
| Time Taken                           | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units         | Limit of detection | Accreditation Status |               |               |
| Stone Content                        | %             | 0.1                | NONE                 | < 0.1         | < 0.1         |
| Moisture Content                     | %             | N/A                | NONE                 | 13            | 15            |
| Total mass of sample received        | kg            | 0.001              | NONE                 | 0.60          | 0.54          |

**General Inorganics**

|                                   |          |       |        |       |       |       |       |       |
|-----------------------------------|----------|-------|--------|-------|-------|-------|-------|-------|
| pH - Automated                    | pH Units | N/A   | MCERTS | 7.5   | 5.7   | 10.9  | 6.8   | 7.0   |
| Total Cyanide                     | mg/kg    | 1     | MCERTS | < 1   | < 1   | < 1   | < 1   | < 1   |
| Free Cyanide                      | mg/kg    | 1     | MCERTS | < 1   | < 1   | < 1   | < 1   | < 1   |
| Thiocyanate as SCN                | mg/kg    | 5     | NONE   | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Total Sulphate as SO <sub>4</sub> | %        | 0.005 | MCERTS | 0.015 | 0.027 | 0.096 | 0.039 | 0.020 |
| Sulphide                          | mg/kg    | 1     | MCERTS | 2.6   | < 1.0 | 4.6   | 6.7   | 1.0   |
| Total Sulphur                     | %        | 0.005 | MCERTS | 0.014 | 0.011 | 0.046 | 0.035 | 0.009 |

**Total Phenols**

|                            |       |   |        |       |       |       |       |       |
|----------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|----------------------------|-------|---|--------|-------|-------|-------|-------|-------|

**Speciated PAHs**

|                        |       |      |        |        |        |        |        |        |
|------------------------|-------|------|--------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 1.4    | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.81   | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 3.7    | < 0.05 |
| Pyrene                 | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 3.1    | < 0.05 |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 1.7    | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 1.5    | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 1.5    | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.57   | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 1.3    | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.54   | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.20   | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.54   | < 0.05 |

**Total PAH**

|                             |       |     |        |        |        |        |      |        |
|-----------------------------|-------|-----|--------|--------|--------|--------|------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | < 0.80 | < 0.80 | < 0.80 | 16.9 | < 0.80 |
|-----------------------------|-------|-----|--------|--------|--------|--------|------|--------|

**Heavy Metals / Metalloids**

|                                    |       |      |        |       |       |       |       |       |
|------------------------------------|-------|------|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)   | mg/kg | 1    | MCERTS | 1.8   | 5.8   | 2.8   | 12    | 1.9   |
| Barium (aqua regia extractable)    | mg/kg | 1    | MCERTS | 13    | 23    | 33    | 39    | 12    |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.11  | 0.32  | 0.25  | 0.52  | 0.09  |
| Boron (water soluble)              | mg/kg | 0.2  | MCERTS | 0.3   | 0.4   | 0.2   | 0.3   | 0.3   |
| Cadmium (aqua regia extractable)   | mg/kg | 0.2  | MCERTS | < 0.2 | < 0.2 | 0.3   | < 0.2 | < 0.2 |
| Chromium (hexavalent)              | mg/kg | 1.2  | MCERTS | < 1.2 | < 1.2 | < 1.2 | < 1.2 | 1.9   |
| Chromium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 3.4   | 5.7   | 7.6   | 9.3   | 1.1   |
| Copper (aqua regia extractable)    | mg/kg | 1    | MCERTS | 19    | 16    | 9.6   | 25    | 21    |
| Lead (aqua regia extractable)      | mg/kg | 1    | MCERTS | 17    | 26    | 25    | 47    | 7.0   |
| Mercury (aqua regia extractable)   | mg/kg | 0.3  | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)    | mg/kg | 1    | MCERTS | 3.6   | 6.9   | 6.2   | 12    | 2.7   |
| Selenium (aqua regia extractable)  | mg/kg | 1    | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 4.7   | 8.1   | 9.0   | 15    | 2.2   |
| Zinc (aqua regia extractable)      | mg/kg | 1    | MCERTS | 19    | 21    | 23    | 31    | 23    |

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Page 2 of 4



4041



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**Analytical Report Number : 20-89572****Project / Site name: Hologic, Crewe Road, Wythenshawe**

\* 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 *             |
|-------------------|------------------|---------------|-----------|----------------------------------|
| 1456382           | BH1-C1           | None Supplied | 0.30      | Brown clay and loam with gravel. |
| 1456383           | WS1-C1           | None Supplied | 0.50      | Brown clay and loam with gravel. |
| 1456384           | WS2-C1           | None Supplied | 0.50      | Brown clay and loam with gravel. |
| 1456385           | WS3-C1           | None Supplied | 0.40      | Brown clay and loam.             |
| 1456386           | WS4-C1           | None Supplied | 0.50      | Brown clay and loam.             |

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Page 3 of 4



4041



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Analytical Report Number : 20-89572

Project / Site name: Hologic, Crewe Road, Wythenshawe

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 |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Boron, water soluble, in soil             | Determination of water soluble boron in soil by hot water extract followed by ICP-OES.                                                                                          | In-house method based on Second Site Properties version 3                                                       | L038-PL       | D                  | MCERTS               |
| Free cyanide in soil                      | Determination of free cyanide by distillation followed by colorimetry.                                                                                                          | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Hexavalent chromium in soil (Lower Level) | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.                           | In-house method                                                                                                 | L080-PL       | W                  | MCERTS               |
| Metals in soil by ICP-OES                 | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                                    | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                          | Moisture content, determined gravimetrically. (30 oC)                                                                                                                           | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Monohydric phenols in soil                | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.                                                          | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL       | W                  | MCERTS               |
| pH in soil (automated)                    | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                               | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Speciated EPA-16 PAHs in soil             | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                          | In-house method based on USEPA 8270                                                                             | L064-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                 |
| Sulphide in soil                          | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.          | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Thiocyanate in soil                       | Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer). | In-house method                                                                                                 | L082-PL       | D                  | NONE                 |
| Total cyanide in soil                     | Determination of total cyanide by distillation followed by colorimetry.                                                                                                         | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total Sulphate in soil as %               | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.                                                                                         | In house method.                                                                                                | 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.                                                                                                | 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.

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Page 4 of 4

# Soils Risk Assessment

Site Reference: 6041 HOO  
 Project Site: Hologic  
 Project Location: Crewe Road, Wythenshawe  
 Client: JDA-Architects

| i2 Reference          | Commercial  | BH1-C1     | WS1-C1     | WS2-C1     | WS3-C1     | WS4-C1     |
|-----------------------|-------------|------------|------------|------------|------------|------------|
| Customer Sample Ref:  | C4SL / S4UL | 26/02/2020 | 26/02/2020 | 26/02/2020 | 26/02/2020 | 26/02/2020 |
| Determinand           | SOM 1% GAC  | 0.30       | 0.50       | 0.50       | 0.40       | 0.50       |
|                       | LQM II      |            |            |            |            |            |
| Arsenic               | 640         | 1.8        | 5.8        | 2.8        | 12         | 1.9        |
| Boron (water-soluble) | 240000      | 0.3        | 0.4        | 0.2        | 0.3        | 0.3        |
| Cadmium               | 410         | 0.2        | 0.2        | 0.3        | 0.2        | 0.2        |
| Chromium*             | 8600        | 3.4        | 5.7        | 7.6        | 9.3        | 1.1        |
| Chromium VI           | 49          | 1.2        | 1.2        | 1.2        | 1.2        | 1.9        |
| Copper                | 68000       | 19         | 16         | 9.6        | 25         | 21         |
| Cyanide(Total)        | -           | 1          | 1          | 1          | 1          | 1          |
| Cyanide(free)**       | 34          | 1          | 1          | 1          | 1          | 1          |
| Lead                  | 2300        | 17         | 26         | 25         | 47         | 7          |
| Mercury               | 58          | 0.3        | 0.3        | 0.3        | 0.3        | 0.3        |
| Nickel                | 980         | 3.6        | 6.9        | 6.2        | 12         | 2.7        |
| pH                    | -           | 7.5        | 5.7        | 10.9       | 6.8        | 7          |
| Phenols(Mono)         | 3200        | 1          | 1          | 1          | 1          | 1          |
| Selenium              | 12000       | 1          | 1          | 1          | 1          | 1          |
| SO4(Total)            | -           | 2.6        | 1          | 4.6        | 6.7        | 1          |
| Sulphide              | -           | 5          | 5          | 5          | 5          | 5          |
| Sulphur(Free)         | -           | 0.015      | 0.027      | 0.096      | 0.039      | 0.02       |
| Thiocyanate           | -           | 0.014      | 0.011      | 0.046      | 0.035      | 0.009      |
| Zinc                  | 730000      | 19         | 21         | 23         | 31         | 23         |
| Acenaphthene          | 100000      | 0.05       | 0.05       | 0.05       | 0.05       | 0.05       |
| Acenaphthylene        | 100000      | 0.05       | 0.05       | 0.05       | 0.05       | 0.05       |
| Anthracene            | 540000      | 0.05       | 0.05       | 0.05       | 0.81       | 0.05       |
| Benzo(a)Anthracene    | -           | 0.05       | 0.05       | 0.05       | 1.7        | 0.05       |
| Benzo(a)Pyrene SM     | 10          | 0.05       | 0.05       | 0.05       | 1.3        | 0.05       |
| Benzo(b)Fluoranthene  | -           | 0.05       | 0.05       | 0.05       | 1.5        | 0.05       |
| Benzo(ghi)Perylene    | -           | 0.05       | 0.05       | 0.05       | 0.54       | 0.05       |
| Benzo(k)Fluoranthene  | -           | 0.05       | 0.05       | 0.05       | 0.57       | 0.05       |
| Chrysene              | -           | 0.05       | 0.05       | 0.05       | 1.5        | 0.05       |
| Dibenzo(ah)Anthracene | -           | 0.05       | 0.05       | 0.05       | 0.2        | 0.05       |
| Fluoranthene          | 23000       | 0.05       | 0.05       | 0.05       | 3.7        | 0.05       |
| Fluorene              | 71000       | 0.05       | 0.05       | 0.05       | 0.05       | 0.05       |
| Indeno(123-cd)Pyrene  | -           | 0.05       | 0.05       | 0.05       | 0.54       | 0.05       |
| Naphthalene           | 1100        | 0.05       | 0.05       | 0.05       | 0.05       | 0.05       |
| Phenanthrene          | 23000       | 0.05       | 0.05       | 0.05       | 1.4        | 0.05       |
| Pyrene                | 54000       | 0.05       | 0.05       | 0.05       | 3.1        | 0.05       |
| PAH(total)            | 500         | 0.8        | 0.8        | 0.8        | 16.9       | 0.8        |

All Units mg/kg unless otherwise stated Indicates Exceedance of Applicable Level

\*Criteria Assumes Chromium III

\*\*Criteria is derived considering acute effects on 1-2yo Female Receptor ingesting a single dose of 3g of soil

\*\*Criteria is derived considering Total TPH (C10 to C35) is formed entirely of a 50:50 Aliphatic and Aromatic Split C8-C10 range

Basis of Assessment Criteria: EA 2005 WAC (Human Health Value) C4SL  
 LQM S4UL Atrisk 06