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20.1054/RS/CB/v1
25 July 2022

Mark Costello
Concert

UNION PARK, HAYES – REMEDIATION STATUS

Dear Mark

Introduction

Planning Permission reference 75111/APP/2020/1955, under which the ground works are being carried out has six Planning Conditions (31 to 36) relating to contaminated land that requires groundworks associated with the development to be executed in accordance with the approved Remediation Strategy (Reference: 20.0023/CK/DCN. Dated: 11 November 2021). On completion of the works a Verification Report is to be submitted to the LPA to discharge the conditions. As the project is still part way through construction, the Verification Report has yet to be compiled, however this letter has been prepared by Paragon as an update to confirm the status of the ongoing remedial requirements at the site.

Remediation Strategy Requirements

The remediation strategy sets out requirements for the following key items:

1. Site clearance and demolition including the removal of the generator / above ground tank in the Vodafone plot (completed in spring / summer 2020);
2. Personal Protective Equipment and health and safety controls;
3. Watching brief and discovery strategy in the event that previously unidentified contamination is encountered;
4. Ongoing monitoring of groundwater;
5. Capping layers in soft landscaped areas;
6. Gas (methane and carbon dioxide) and vapour resistant membranes within future enclosed structures;
7. Asbestos control measures and materials management;
8. Barrier pipework for new drinking water supply pipework;
9. Decommissioning of boreholes;
10. Piling Works Risk Assessment; and
11. Remediation and Verification reporting.



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Remediation Status Update

In summary, Paragon are completing ongoing visits of the development site and records of each remediation item are being collated. Depending on the purpose of the visit, photographs, soil or water samples were collected. In addition, several visits were for general update purposes, in which no sampling was required. A list of the verification visits is included below:

Table 1. Verification Visits

Number	Date	Description
1	21 September 2020	General Inspection
2	5 November 2020	General Inspection
3	19 November 2020	General Inspection
4	22 January 2021	General Inspection
5	17 February 2021	General Inspection
6	7 June 2021	Soil Testing Hayes
7	8 June 2021	Soil Testing Hayes
8	22 June 2021	MMP Soil Supervision
9	29 June 2021	MMP Soil Supervision
10	30 June 2021	MMP Soil Supervision
11	1 July 2021	MMP Soil Supervision
12	5 August 2021	Borehole Drilling (Groundwater Monitoring set up)
13	2 September 2021	Set up of vibration equipment
14	10 March 2022	Site Meeting
15	23 March 2022	Site Inspection
16	31 March 2022	Groundwater Sampling (Paragon Inspection)
17	24 June 2022	Japanese Knotweed Inspection

The status of each item from the remediation strategy is set out below:

- 1. Site clearance and demolition including the removal of the generator / above ground tank in the Vodafone plot (completed in spring / summer 2020).*

The site clearance and demolition works were completed in spring/summer 2020. No further works are required in relation to item 1.

- 2. Personal Protective Equipment and health and safety controls.*

Paragon are working with the principal contractor who is responsible for all PPE and health and safety onsite. No incidents have been reported to Paragon.



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3. Watching brief and discovery strategy in the event that previously unidentified contamination is encountered.

Paragon are completing inspections of the site and working closely with the principal contractor in relation to previously unexpected contamination. No areas of previously unexpected contamination have been reported in the latest phase of groundworks. Areas of suspected contamination identified in earlier phases of work have been successfully remediated. In the event that unexpected contamination is identified during future groundworks, the principal contractor is to inform Paragon to provide recommendations for next steps.

Details of any previously unidentified contamination and confirmation of the remediation methods used are to be presented within the verification report.

Paragon has been taking verification soil samples throughout the inspections as required. However, it should be noted that there has been no need to regularly collect soil samples and undertake chemical analysis as no contamination has been identified by the Principal Contractor in relation to Block 1. Nevertheless, a selection of soil test certificates are presented within the appendix. These are from samples collected from a stockpile of arisings from piles / excavations that were to be reused within the scheme. The results show the soils are free from contamination and suitable for reuse.

4. Ongoing monitoring of groundwater.

Prior to construction activities commencing onsite, the risks to Controlled Waters were noted to be low based on the results of our Detailed Quantitative Risk Assessment (DQRA). However, we recommended that ongoing monitoring was completed to ensure the impacts of the construction activities were being monitored. The long term groundwater monitoring is currently ongoing, and whilst we have identified contaminants are present within the water, these are at the same concentrations as before the construction work began. As such, we consider the risks to still be minimal and the groundwater has not been impacted by site activities.

Paragon has provided a separate update on the groundwater monitoring, dated July 2022. This report is presented in the Appendix.

Paragon has presented the dates of the groundwater monitoring below.

Table 2. Monitoring Visits Completed

Monitoring Round		Borehole Reference		
		BH101	BH102	BH103
Baseline				
05/08/21	Initial Baseline Visit	✓	✓	✓
During Piling				
19/08/21	Round 1	✓	✓	✓
31/08/21	Round 2	✓	✓	✓
14/09/21	Round 3	✓	✓	✓
30/09/21	Round 4	✓	✓	✓
13/10/21	Round 5	✓	✓	✓
28/10/21	Round 6	✓	✓	✓
10/11/21	Round 7	✓	✓	✓
23/11/21	Round 8	✓	✓	✓
07/12/21	Round 9	✓	✓	✓
20/12/21	Round 10	✓	✓	x*
05/01/22	Round 11	✓	✓	✓
19/01/22	Round 12	✓	✓	✓
31/01/22	Round 13	✓	✓	✓
17/02/22	Round 14	✓	✓	✓
Post Piling				
31/03/22	Round 15	✓	✓	✓
26/05/22	Round 16	✓	✓	✓
29/06/22	Round 17	✓	✓	✓

Note To Table:

*BH103 ran dry during monitoring on round 10 so no sample was taken during this visit.

5. Capping layers in soft landscaped areas.

The areas of soft landscaping have not been formed yet and this is anticipated to be much later in the development. The contractor is aware of their obligations to assess the soil prior to use onsite to ensure it meets acceptable standards. Paragon are to oversee this process and undertake separate validation testing of the soils. The results are to be presented within the Verification Report.

6. Gas (methane and carbon dioxide) and vapour resistant membranes within future enclosed structures.

At this stage it is too early for the gas and vapour resistant membranes to be installed. Confirmation of the membranes to be used is required by Paragon for the Verification Report. The principal contractor is responsible for providing the information to Paragon and installing the membranes onsite.



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7. Asbestos control measures and materials management.

Paragon are completing ongoing visits to the site to discuss the materials movement with the principal contractor as part of the site's Materials Management Plan. The principal contractor is maintaining a tracker using software called SmartWaste. This is an ongoing process and will be summarised in the Verification Report.

At this stage, no hotspots of asbestos have been reported to Paragon.

8. Barrier pipework for new drinking water supply pipework.

The contractor is responsible for ensuring suitable pipework is installed within the development. Confirmation of the pipework used is required for the verification report. The confirmation is to be provided by the principal contractor.

9. Decommissioning of boreholes.

The groundwater monitoring is ongoing and as such the boreholes are to remain in-situ until the monitoring is complete. The boreholes in the centre of the main plot have been decommissioned by the principal contractor.

10. Piling Works Risk Assessment.

The Piling Works Risk Assessment (PWRA) has been completed and has previously been submitted to the Local Authority (Reference: 21.0198/CB/NW. Dated: 22 February 2021). The risk assessment concluded that there is a low environmental risk from the potential for piling to create a preferential pathway for any contaminants to migrate downwards to the underlying sensitive aquifers, and a low risk for gases to migrate upwards. No further actions are required in relation to the PWRA.

11. Remediation and Verification reporting.

The development is continuing to be monitored and the Remediation Verification Report will be prepared at the end of the project. The Verification Report will need to be submitted to the Local Authority.

Summary and Further Works

This letter sets out the status of the ongoing requirements at Union Park in relation to the remediation strategy. The above items are to continue to be monitored by Paragon and at the end of the project, the Verification Report is to be submitted to the Local Authority to support the discharge of the planning conditions for contaminated land.



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Whilst we hope that this report has addressed your needs, please do not hesitate to get in touch if you have any further questions.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Charlie Bruinvels'.

Charlie Bruinvels
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CC: Charlie Knox – Paragon, a Colliers Company

Appendix 1 – Decision Notice
Appendix 2 – Soil Data
Appendix 3 – Groundwater Letter Report



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**Appendix 1 –
Decision Notice**



Laura Williams
2 Kingsway
Cardiff
CF10 3FD

Application Ref:
75111/APP/2020/1955

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)
GRANT OF PLANNING PERMISSION

The Council of the London Borough of Hillingdon as the Local Planning Authority within the meaning of the above Act and associated Orders **GRANTS** permission for the following:-

Description of development:

Site clearance and preparation, including the demolition of remaining buildings, and the redevelopment of the site to provide: a new data centre (Use Class B8), two MV Energy Centres (including stand-by generation plant and gas storage), a HV Sub-Station, a visitor reception centre, plant, the creation of a new footpath and cycleway link to the canal towpath, works to the highway, car parking, cycle parking, associated infrastructure, enclosures and necessary physical security systems, hard and soft landscaping (including works to the River Crane) and ancillary uses, as well as associated external works.

Location of development: Land At Bulls Bridge Industrial Estate North Hyde Gardens Hayes

Date of application: 24 June 2020

Plan Numbers: See attached Schedule of plans

Permission is subject to the condition(s) listed on the attached schedule:-

Head of Planning, Transportation and Regeneration

Date: 15 April 2021

- NOTES:
- (i) Please also see the informatives included in the Schedule of Conditions.
 - (ii) Should you wish to appeal against any of the conditions please read the attached sheet which explains the procedure.
 - (iii) This decision does not convey any approval or consent which may be required

under any by-laws, building regulations or under any Act other than the Town and Country Planning Act 1990 (as amended).

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)

GRANT OF PLANNING PERMISSION

Application Ref: 75111/APP/2020/1955

SCHEDULE OF CONDITIONS

- 1 · The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

REASON

To comply with Section 91 of the Town and Country Planning Act 1990.

SCHEDULE OF CONDITIONS

- 2 · The development hereby permitted shall not be carried out except in complete accordance with the details shown on the submitted plans:-

Location and Site:

NWA-0471-SN-ZZ-DR-A-01-000 Rev. P01;
NWA-0471-SN-ZZ-DR-A-03-000 Rev. P02;
NWA-0471-SN-ZZ-DR-A-90-005 Rev. P02;
NWA-0471-SN-XX-DR-A-90-006 Rev. P02;
NWA-0471-SN-ZZ-DR-A-02-000 Rev. P01;
NWA-0471-SN-ZZ-DR-A-90-900 Rev. P01;
NWA-0471-SN-ZZ-DR-A-90-901 Rev. P02;
NWA-0471-SN-ZZ-DR-A-90-902 Rev. P01;
02 Rev. A Tree Constraints Plan;
03 Rev. B Tree Retention and Protection Plan;
05 Rev. B River Crane Boundary Landscape Cross sections;
06 Rev. B Indicative Landscape Boundary Cross Sections;
10 Rev. D Concept Landscape Layout Plan;
15 Canal Towpath Ramp Proposals;
16 Plan Detail and Sections of Towpath;
Sav 01 - Condition 6 Plan Showing Extent of Abellio Land;

Data Centre:

NWA-0471-DC-00-DR-A-03-005 Rev. P01;
NWA-0471-DC-01-DR-A-03-010 Rev. P01;
NWA-0471-DC-02-DR-A-03-020 Rev. P01;
NWA-0471-DC-03-DR-A-03-030 Rev. P01;
NWA-0471-DC-04-DR-A-03-040 Rev. P01;
NWA-0471-DC-05-DR-A-03-050 Rev. P01;
NWA-0471-DC-ZZ-DR-A-27-060 Rev. P01;
NWA-0471-DC-XX-DR-A-03-700 Rev. P01;
NWA-0471-DC-XX-DR-A-03-800 Rev. P01;
NWA-0471-DC-ZZ-DR-A-31-100 Rev. P01;

Energy Centre 1:

NWA-0471-EC1-ZZ-DR-A-03-005 Rev. P01;
NWA-0471-EC1-ZZ-DR-A-03-006 Rev. P01;
NWA-0471-EC1-ZZ-DR-A-03-700 Rev. P01;
NWA-0471-EC1-ZZ-DR-A-31-100 Rev. P01;

Energy Centre 2:

NWA-0471-EC2-ZZ-DR-A-03-005 Rev. P02;
NWA-0471-EC2-ZZ-DR-A-03-700 Rev. P02;
NWA-0471-EC2-ZZ-DR-A-31-000 Rev. P02;

Substation:

P1152-ARK-DWG-1001-1 Rev. P4;
P1152-ARK-DWG-1001_2 Rev. P4;

Visitor Reception Centre:

NWA-0471-VR-ZZ-DR-A-03-005 Rev. P01;

and shall thereafter be retained/maintained for as long as the development remains in existence.

SCHEDULE OF CONDITIONS

2 · REASON

To ensure the development complies with the provisions of the Hillingdon Local Plan: Part 1 (2012), the Hillingdon Local Plan: Part 2 (2020) and the London Plan (2021).

SCHEDULE OF CONDITIONS

- 3 · The development hereby permitted shall not be occupied until the following has been completed in accordance with the specified supporting plans and/or documents:
- Planning & Economic Statement (Dated June 2020);
NWA-0471-XX-XX-RP-A-0001-DAS INTRODUCTION Design and Access Statement (Dated 19th June 2020);
NWA-0471-XX-XX-RP-A-0002-DAS SITE Design and Access Statement (Dated 19th June 2020);
NWA-0471-XX-XX-RP-A-0003-DAS CONSULTATION Design and Access Statement (Dated 19th June 2020);
NWA-0471-XX-XX-RP-A-0004-DAS DESIGN Design and Access Statement (Dated 19th June 2020);
NWA-0471-XX-XX-RP-A-0005-DAS EXTERNAL WORKS Design and Access Statement (Dated 19th June 2020);
NWA-0471-XX-XX-RP-A-0006-DAS SUSTAINABILITY Design and Access Statement (Dated 19th June 2020);
NWA-0471-XX-XX-RP-A-0007-DAS ACCESS Design and Access Statement (Dated 19th June 2020);
2017/19/RP03 Townscape and Visual Impact Assessment (Dated 19th June 2020);
R/PNA/1/200529 Version 03 Noise Assessment (Dated 5th June 2020);
CL-5447-RPT-002 V1.0 Aviation Report (Dated June 2020);
WED15516 Issue 03 Energy Statement (Dated June 2020);
WED15516 Issue 05 Sustainability Statement (Dated June 2020);
BREEAM Data Centres 2010 Pre-Assessment Summary Report (Dated 4th June 2020);
7854.EcoAs.vf7 Ecological Assessment (Dated June 2020);
479-20 Rev. 1 Arboricultural Impact Assessment (Dated 28th May 2020);
2017/19/RP01B Landscape Design Statement (Dated 9th June 2020);
2017/19/RP04 10 year Landscape Maintenance and Management Plan (Dated 29th May 2020);
HPF-0471-ZZ-XX-RP-E63001 Issue 03 External Lighting Strategy (Dated June 2020);
Fire Safety Statement Issue 01 (Dated 10th June 2020);
S20041499 Issue 01 Fire Safety Strategy Report (Dated 3rd June 2020);
HPF-0471-ZZ-XX-RPMEP-50001 Issue 3 Utility Statement Report (Dated June 2020);
9167 (AQ) rev4.docx Air Quality Assessment (Dated 15th June 2020);
HPF-0471-XX-XX-RP-C91001 Issue 03 Flood Risk Assessment and Drainage Strategy (Dated June 2020);
HPF-0471-XX-XX-C-DR-91114 Rev. P01 Drainage Strategy Layout for Planning;
19.0633/CB/NW Rev. B Phase 1 Environmental Risk Assessment (Dated June 2020);
20.0023/CB/DCN Rev. B Phase 2 Ground Investigation Report (Dated 4th June 2020);
Remediation Strategy Rev. B (Dated June 2020);
HPF-0471-XX-XX-RP-C-95001 Issue 03 Transport Assessment (Dated June 2020);
Excool SEER Hourly Data 656kW GLA Issue;
Pre Stage 2 GLA Consultation Energy Memo 2020;
Ark Correspondence with Adjacent Landowners (Dated 25th November 2020);
Potential for District Heating Email (Dated 26th November 2020);
GLA Energy Correspondence (Dated 17th November 2020);
GLA Energy Correspondence (Dated 25th November 2020); and
GLA Energy Correspondence (Dated 30th November 2020).

SCHEDULE OF CONDITIONS

- 3 · Thereafter the development shall be retained/maintained in accordance with these details for as long as the development remains in existence

REASON

To ensure the development complies with the provisions of the Hillingdon Local Plan: Part 1 (2012), the Hillingdon Local Plan: Part 2 (2020) and the London Plan (2021).

- 4 · Notwithstanding the Town and Country Planning (Use Classes) Order (as amended), or in any provision equivalent to that Class in any statutory instrument revoking and re-enacting that Order with or without modification, the development shall not be used for any purpose other than as a data centre.

REASON

To ensure that the provisions of the proposed development are secured to the data centre use to prevent detrimental impacts to the local highway network, in accordance with Policies DMT 1, DMT 2 and DMT 5 of the Hillingdon Local Plan: Part 2 (2020).

- 5 · Notwithstanding the provisions of Part 7, Schedule 2 of the Town and Country Planning (General Permitted Development) Order 2015 (or any order revoking and re-enacting that Order with or without modification), the buildings shall not be extended without the prior written consent of the Local Planning Authority.

REASON

To enable the Local Planning Authority to assess all the implications of the development and in accordance with Policy DMHB 11 of the Hillingdon Local Plan: Part 2 (2020).

- 6 · Notwithstanding the provisions of Part 7, Schedule 2 of the Town and Country Planning (General Permitted Development) Order 2015 (or any order revoking and re-enacting that Order with or without modification), no additional structural internal mezzanine floorspace that can be used for storage, excluding that intended to be used for a data centre, shall be created in excess of that area expressly authorised by this permission.

REASON

To enable the Local Planning Authority to assess all the implications of the development and in accordance with Policy DMHB 11 of the Hillingdon Local Plan: Part 2 (2020).

- 7 · No development shall take place on the existing bus garage site, currently occupied by Abellio and as shown on plan ref. 'Sav 01 - Condition 6 Plan Showing Extent of Abellio Land', prior to Abellio vacating the site or 31 December 2021, whichever date is earlier.

REASON

To allow sufficient time for a replacement bus depot/garage to be occupied in order to ensure that the proposed development does not result in a net loss of transport capacity, in accordance with Policy T3 of the London Plan (2021).

SCHEDULE OF CONDITIONS

- 8 · Prior to commencement of any superstructure works pertaining to the (a) Data Centre, (b) Energy Centre 1, (c) Energy Centre 2, (d) Substation and (e) Visitor Reception Centre, the following shall be submitted to and approved in writing by the Local Planning Authority:

(i) Details and samples of all materials and external surfaces; and

(ii) Details of cladding and screening fixing method.

N.B. Details should include information relating to make, product/type, colour and photographs/images. Regarding the (a) Data Centre, the large areas of glazing should have low reflectivity to mitigate any solar glare to train drivers, as requested by Network Rail. Regarding the (d) Substation details, please note that this should include details of the proposed substation cabinets and associated cladding, as requested by the Canal and River Trust.

Thereafter the development shall be constructed in accordance with the approved details and be retained as such.

REASON

To ensure that the development presents a satisfactory appearance in accordance with Policy DMHB 11 of the Hillingdon Local Plan: Part 2 (2020).

SCHEDULE OF CONDITIONS

- 9 · Prior to above ground works commencing, a landscape scheme shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Canal and River Trust, Network Rail, Ministry of Defence and Heathrow Airport Ltd. The scheme shall include: -

1. Details of Soft Landscaping (including the areas surrounding the Data Centre, Energy Centre 1, Energy Centre 2 , the Substation and Visitor Reception Centre)
1.a Planting plans (at not less than a scale of 1:100),
1.b Written specification of planting and cultivation works to be undertaken,
1.c Schedule of plants giving species, plant sizes, and proposed numbers/densities where appropriate including pollution absorbing species.

2. Details of Hard Landscaping (including the areas surrounding the Data Centre, Energy Centre 1, Energy Centre 2 , the Substation and Visitor Reception Centre)

2.a Refuse Storage

2.b Cycle Storage demonstrating capacity for 14 bicycles

2.c Means of enclosure/boundary treatments (including appearance, dimensions and location of fencing)

2.d Car Parking Layouts:

- Data Centre and Energy Centre 1 staff car parking: 53 spaces including 6 accessible spaces

- Energy Centre 2 staff car parking: 24 spaces including 2 accessible spaces

- Visitor car parking: 15 spaces including 2 accessible spaces

- Electrical vehicle charging points: 20% active and 20% passive provision, which equates to 18 active and 18 passive spaces

- Motorcycle parking: 5% provision, equating to 5 spaces

2.e Hard Surfacing Materials

2.f External Lighting

2.g Other structures (including 'No bird feeding signs' to be installed where the site provides access to the river edges as requested by Heathrow Airport Ltd)

3. Living Walls and/or Roofs (for the Data Centre, Energy Centre 1, Energy Centre 2 and the Substation)

3.a Details of the inclusion of living walls and/or roofs

3.b Justification as to why a certain part of the development cannot include living walls and/or roofs.

4. Details of Landscape Maintenance (including the areas surrounding the Data Centre, Energy Centre 1, Energy Centre 2 , the Substation and Visitor Reception Centre)

4.a Landscape Maintenance Schedule for a minimum period of 5 years.

4.b Proposals for the replacement of any tree, shrub, or area of surfing/seeding within the landscaping scheme which dies or in the opinion of the Local Planning Authority becomes seriously damaged or diseased.

5. Schedule for Implementation

6. Other

6.a Existing and proposed functional services above and below ground

6.b Proposed finishing levels or contours

Thereafter the development shall be carried out and maintained in full accordance with the approved details.

N.B. Details must comply with Advice Note 3, 'Potential Bird Hazards from Amenity

SCHEDULE OF CONDITIONS

- 9 · Landscaping & Building Design' (available at www.aoa.org.uk/policycampaigns/operations-safety). As requested by the National Grid, trees and shrubs should not be planted directly above or within 3 metres of the existing underground cable as the roots may grow to cause damage to the cable.

REASON

To ensure that the proposed development will preserve and enhance the visual amenities of the locality and provide adequate facilities in compliance with Policies DMHB 11, DMHB 14, DMEI 1 and DMT 6 of the Hillingdon Local Plan: Part 2 (2020) and Policies G1, G5, T5 and T6 of the London Plan (2021). Also, to avoid endangering the safe movement of aircraft and the operation of Heathrow Airport through the attraction of birds and an increase in the bird hazard risk of the application site, in accordance with Policy DMAV 1 of the Hillingdon Local Plan: Part 2 (2020).

- 10 · Prior to commencement of any superstructure works pertaining to the (a) Data Centre, (b) Energy Centre 1 and (c) Energy Centre 2, details of the proposed green roof and/or walls shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Canal and River Trust, Ministry of Defence and Heathrow Airport Ltd. The details submitted shall include:

- i) Method of construction;
- ii) Schedule of framework materials;
- iii) Schedule of the species to be planted, method of planting, height and spread at planting and growth projections;
- iv) An ongoing management and maintenance regime to include irrigation methods and an inspection programme to allow dead or dying plants to be identified and replaced.

The green roof and walls shall thereafter be constructed and retained in accordance with the details submitted in perpetuity and shall not be removed or altered without the prior written consent of the Local Planning Authority.

REASON

To ensure that the landscaped areas are retained in accordance with the approved plans in order to preserve and enhance the visual amenities of the locality in compliance with Policies DMHB 11, DMHB 14 and DMEI 1 of the of the Hillingdon Local Plan: Part 2 (2020).

SCHEDULE OF CONDITIONS

- 11 · Prior to relevant works commencing, details of the proposed canal access ramp (shown on approved drawing reference '15 Canal Towpath Ramp Proposals'), including materials and screening, shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Canal and River Trust.

The details shall demonstrate that the motorcycle prevention barrier proposed at the top of the canal ramp would not prevent large mobility scooters from getting through. As the ramp would be steeper than the preferred 1:21 gradient, a handrail should also be provided on both sides and shown on plan.

Thereafter the development shall be carried out and maintained in full accordance with the approved details.

REASON

To ensure that the proposed development will preserve and enhance the visual amenities of the locality and provides sufficient access in compliance with Policies DMHB 11, DMHB 14, DMT 1, DMT 2 and DMT 5 of the Hillingdon Local Plan: Part 2 (2020).

- 12 · Prior to the installation of external lighting, details of an external lighting scheme shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Canal and River Trust and Network Rail. Such details shall include location, height, type and direction of light sources and intensity of illumination. Thereafter the external lighting shall be installed and maintained in full accordance with the approved details.

REASONS

To ensure that biodiversity within the ecological corridor is not adversely impacted by the proposed lighting, in accordance with Policy DMEI 7 of the Hillingdon Local Plan: Part 2 (2020). Also, to ensure lighting associated with the development does not interfere with the sighting of signalling apparatus and/or train drivers vision on approaching trains.

- 13 · Prior to relevant works commencing, details pertaining to the proposed works on North Hyde Gardens shall be submitted to and approved in writing by the Local Planning Authority. This should include details on the proposed:
- Footpath widening;
 - Pedestrian crossing;
 - Speed reduction measures; and
 - General enhancements.

Thereafter the development shall be carried out and maintained in full accordance with the approved details.

REASON

To ensure that the proposed development will preserve and enhance the visual amenities of the locality and provides sufficient access in compliance with Policies DMHB 11, DMHB 14, DMT 1, DMT 2 and DMT 5 of the Hillingdon Local Plan: Part 2 (2020).

SCHEDULE OF CONDITIONS

- 14 · Prior to the commencement of any superstructure works, a Bird Hazard Management Plan shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Defence Infrastructure Organisation/Ministry of Defence and Heathrow Airport Ltd.

The Bird Hazard Management Plan shall include design measures to:-

- Manage any flat/shallow pitched/green roofs on buildings within the site which may be attractive to nesting, roosting and "loafing" birds.
- Minimise any increase in the numbers of hazardous species (primarily large or flocking birds) as a result of the development proposed.
- Prevent gulls from breeding (using appropriate licensed means) on site.

The Bird Hazard Management Plan shall be implemented as approved and shall remain in force for the life of the buildings. No subsequent alterations to the plan are to take place unless first submitted to and approved in writing by the Local Planning Authority.

N.B. The attenuation basin should remain dry except during and immediately after extreme rainfall.

REASON

To minimise the potential of the works approved to provide a habitat desirable to hazardous large and/or flocking birds which have the potential to pose a considerable hazard to aviation safety which is exacerbated by the proximity of RAF Northolt. To ensure the development accords with the requirements of Policy DMAV1 of the Hillingdon Local Plan: Part 2 (2020) and paragraphs 95 and 182 of the National Planning Policy Framework (2019).

- 15 · Prior to the commencement of any superstructure works, a detailed ecological enhancement scheme demonstrating net gains in biodiversity value shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Ministry of Defence and Heathrow Airport Ltd. The scheme shall be made up of a plan (or plans) of the development annotated with ecological enhancement measures to be included within the fabric of the buildings and the landscaping and accompanied by a report detailing the justification for such measures and how they will be maintained in perpetuity. The development must proceed in accordance with the approved plans.

REASON

To ensure the development contributes to a net gain in biodiversity in accordance with Policy DMEI 7 of the Hillingdon Local Plan: Part 2 (2020), Policy EM7 of the Hillingdon Local Plan: Part 1 (2012), Policy G6 of the London Plan (2021) and the National Planning Policy Framework (2019).

SCHEDULE OF CONDITIONS

- 16 · Prior to commencement (excluding demolition and site clearance), the details of a scheme for the provision of sustainable water management shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall clearly demonstrate how it manages water in the most sustainable ways, in accordance with 'HPF-0471-XX-XX-RP-C91001 Issue 03 Flood Risk Assessment and Drainage Strategy (Dated June 2020)' which sets out that the site will:
- Achieve a run off rate from the site of a maximum of 19.1l/s for the entire site of 4.5ha or 4.24l/s/ha for the 1 in 1 year event and 44.9l/s for the 1in 100 year plus 40% allowance or 9.9ls/ha in accordance with the information contained in the proforma submitted.
 - Utilise the following SuDs elements:
 - Rainwater harvesting
 - Living Roofs
 - Permeable Paving
 - Filtration trenches
 - Attenuation tanks
 - Swale and
 - Detention Basin
 - Provide a minimum of 4344m³ of storage.
- The responsibility for the drainage system lies with the client Ark Estates 2 Ltd or their chosen management company and will follow the management and maintenance strategy submitted.
- Further detail as specified in 'HPF-0471-XX-XX-RP-C91001 Issue 03 Flood Risk Assessment and Drainage Strategy (Dated June 2020)' shall be submitted, including:
- Rainwater harvesting;
 - Green roofs;
 - Survey of existing assets being retained including outfalls to confirm suitable condition;
 - If these are not functional these must be repaired before occupation and evidence of their functionality should be provided in writing and to the satisfaction of the Local Planning Authority.
 - Exceedance routes should be clearly identified.
- Any changes to the strategy should be justified and evaluated and the final proposals must be integrated with provision of green infrastructure, air quality and urban greening requirements to justify the most sustainable final solution is provided.

REASON

To ensure compliance with Policies DMEI 1, DMEI 9 and DMEI 10 of the Hillingdon Local Plan: Part 2 - (2020), Policy EM6 of the Hillingdon Local Plan: Part 1 (2012), Policy SI 13 of the London Plan (2021), the National Planning Policy Framework (2019) and Planning Practice Guidance: Flood Risk and Coastal Change (2014).

SCHEDULE OF CONDITIONS

- 17 · Prior to occupation of the development, a Verification Report demonstrating that the approved drainage/SuDS measures have been fully implemented shall be submitted to and approved in writing by the Local Planning Authority. This report must include:
- As built drawings and CAD/shapefiles for GIS of all the elements sustainable drainage systems including level information (if appropriate);
 - Photographs of the completed sustainable drainage systems throughout the construction process;
 - Any relevant certificates from manufacturers/suppliers of any drainage features; and
 - A confirmation statement of the above signed by a chartered engineer.

REASON

To ensure the sustainable management of water, minimise flood risk, minimise discharge of surface water outside of the curtilage of the property and ensure that the drainage system will remain functional throughout the lifetime of the development in accordance with Policy DMEI 10 of the Hillingdon Local Plan: Part 2 (2020), Policy EM6 of the Hillingdon Local Plan: Part 1 (2012) and Policy SI 13 of the London Plan (2021) and the National Planning Policy Framework (2019).

- 18 · Prior to occupation of the development, a scheme for the detailed monitoring, recording and reporting of the CO2 reductions (regulated and non-regulated) identified in the 'WED15516 Issue 03 Energy Statement (Dated June 2020)' shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the GLA. The scheme shall set out how CO2 reductions will be monitored and recorded and details of the report mechanism to the Local Planning Authority and the GLA. The scheme shall include the triggers and mechanisms for identifying and implementing remedial measures should the approved CO2 reductions not be achieved. The development must be operated in accordance with the approved scheme.

REASON

To ensure the operation of the development achieves the CO2 reduction targets set out in the Energy Statement, in accordance with Policy DMEI 2 of the Hillingdon Local Plan: Part 2 (2020).

- 19 · Prior to occupation of the development, a Parking Management Plan shall be submitted to and approved in writing by the Local Planning Authority. At no time shall the site be used for off-airport parking and the plan shall detail the arrangements for all parking onsite and include provisions for managing, monitoring, enforcement and review.
- The approved plan shall be implemented as soon as the development is brought into use and shall remain in place thereafter. Any changes to the plan shall be agreed in writing by the Local Planning Authority.

REASON

To ensure the appropriate operation of the car parks and prevention of inappropriate/informal parking from taking place by users of the site, in accordance with Policies DMT 1, DMT 2 and DMT 6 of the Hillingdon Local Plan: Part 2 (2020).

SCHEDULE OF CONDITIONS

- 20 · Development shall not commence until a Construction Management Plan has been submitted to and approved in writing by the Local Planning Authority, in consultation with the Defence Infrastructure Organisation/Ministry of Defence and Network Rail.

This strategy shall cover the entirety of the application site and any adjoining land which will be used during the construction period. It shall include the details of cranes and any other tall construction equipment (including the details of obstacle lighting). It must also demonstrate compliance with the GLA Control of Dust and Emissions from Construction and Demolition SPG (or any successor document).

The approved strategy (or any variation approved in writing by the Local Planning Authority) shall be implemented for the duration of the construction period.

REASON

To ensure that construction work and construction equipment on the site and adjoining land does not obstruct air traffic movements or otherwise impede the effective operation of air traffic navigation transmitter/receiver systems, in accordance with Policy DMAV 1 of the Hillingdon Local Plan: Part 2 (2020) and paragraphs 95 and 182 of the National Planning Policy Framework (2019). Also, to ensure compliance with Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), Policies T7 and SI 1 of the London Plan (2021).

- 21 · Prior to the commencement of works on site, a Construction Logistics Plan shall be submitted to and approved in writing by the Local Planning Authority. This should be in accordance with Transport for London's Construction Logistic Planning Guidance and detail the management of construction traffic, including vehicle types, frequency of visits, expected daily time frames, use of an onsite banksman, on-site loading/unloading arrangements and parking of site operative vehicles.

The construction works shall be carried out in strict accordance with the approved plan.

REASON

To ensure that the construction works include appropriate efficiency and sustainability measures so as not to compromise the safe and efficient operation of the local highway network and minimizes emissions, in accordance with Policies DMT 1, DMT 2 and DMEI 14 of the Hillingdon Local Plan: Part 2 (2020) and Policies T7 and SI 1 of the London Plan (2021).

- 22 · Prior to the occupation of development, details of a Delivery and Servicing Plan shall be submitted to and approved in writing by the Local Planning Authority.

This should be in accordance with Transport for London's Delivery and Servicing Plan Guidance. Thereafter the development shall be carried out and maintained in full accordance with the approved details.

REASON

To ensure appropriate servicing of the site, to safeguard highway safety and to safeguard the free flow of traffic, in accordance with Policies DMT 1 and DMT 2 of the Hillingdon Local Plan: Part (2020) and Policy T7 of the London Plan (2021).

SCHEDULE OF CONDITIONS

- 23 · Prior to the commencement of the development hereby permitted, a Risk Assessment and Method Statement shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Canal and River Trust. The Risk Assessment and Method Statement shall identify risks to the stability of canal infrastructure, the waterway environment and the health, safety and enjoyment of canal users during demolition and construction phases. It shall demonstrate that such risks have been adequately avoided, mitigated or managed through the method statement. Once approved, development shall be carried out in accordance with the Risk Assessment and Method Statement.

REASON

To ensure construction works do not have any adverse impact on the environment of the Grand Union Canal and its users, in accordance with Policy DMEI 8 of the Hillingdon Local Plan: Part 2 (2020).

- 24 · The rating level of noise emitted shall be at least 5 dB below the existing background sound level. The noise levels shall be determined at the nearest noise sensitive receptors. The measurements and assessment shall be made following the methodology of British Standard 4142:2014+A1:2019.

REASON

To safeguard the amenity of the surrounding area in accordance with Policy DMHB 11 of the Hillingdon Local Plan: Part 2 (2020) and Policy D14 of the London Plan (2021).

- 25 · The noise level from the substation in the 100Hz band shall not exceed the 38dB criterion curve, at noise sensitive receptors, when measured and / or calculated to the Salford University 'Procedure for the assessment of low frequency noise complaints' in 2011, which sets out information on suitable criteria for determining acceptable levels of LFN.

REASON

To safeguard the amenity of the surrounding area in accordance with Policy DMHB 11 of the Hillingdon Local Plan: Part 2 (2020) and Policy D14 of the London Plan (2021).

- 26 · The development shall accord with the mitigation measures stated in approved document reference 'R/PNA/1/200529 Version 03 Noise Assessment (Dated 5th June 2020)', including:
- No line of sight between adiabatic coolers and the nearest noise sensitive properties, due to a solid external facing to the gantries;
 - Attenuation of at least 20 dB due to the building envelope, applicable to the transformers and generators;
 - No line of sight between the adiabatic dry air coolers and DX condenser units and the nearest noise sensitive properties, due to a solid acoustic screen around the roof plant areas, constructed to a suitable height.

REASON

To safeguard the amenity of the surrounding area in accordance with Policy DMHB 11 of the Hillingdon Local Plan: Part 2 (2020) and Policy D14 of the London Plan (2021).

SCHEDULE OF CONDITIONS

- 27 · A) No development shall proceed beyond the steel/timber/concrete superstructure (including roof structure) of any building proposed until the principles of a Fire Statement has been submitted to and approved in writing by the Local Planning Authority (in consultation with Building Control, the Health and Safety Executive and London Fire Brigade). The statement should detail how the development proposal will function in terms of:
- i) the building's construction: methods, products and materials used, including manufacturers' details
 - ii) the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach
 - iii) features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans
 - iv) access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these
 - v) how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building
 - vi) ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.
- B) Prior to occupation of the development, the final comprehensive Fire Statement shall be submitted to and approved in writing by the Local Planning Authority. This should be accompanied by the Building Control Decision Notice or equivalent.

Thereafter the development shall be carried out and maintained in full accordance with the approved details.

REASON

To ensure the safety of all building users in accordance with Policy D12 of the London Plan (2021).

SCHEDULE OF CONDITIONS

- 28 · Prior to the commissioning of the generators, a clear and effective Emission Mitigation Strategy shall be submitted to and approved in writing by the Local Planning Authority. The strategy shall include, but not be restricted to:
- a) Be clean by design as per the London Sustainable Design and construction Supplementary Planning Guidance,
 - b) provision of an electric vehicle charging bay. This is to be implemented as part of the proposal with the minimum requirements as per the London Plan.
 - c) a clear and effective strategy, aligned with the Travel Plan, to encourage staff and visitors of the site to:
 - i) use public transport;
 - ii) cycle / walk to work where practicable;
 - iii) enter car share schemes;
 - iv) enter cab share schemes to and from the airport and or home / work locations;
 - v) purchase and drive to work zero emission vehicles.

Measures to support and encourage modal shift, will include but be not restricted to incentives for users to use public transport to reduce their car ownership. The measures in the agreed scheme shall be maintained throughout the life of the development.

REASON

To reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), Policy SI 1 of the London Plan (2021) and paragraph 170 of the National Planning Policy Framework (2019).

- 29 · Prior to occupation of the development, all gas fired backup generators shall be retrofitted with suitable and efficient technology to achieve a reduction at least equal to the reported in the air quality report submitted to support the planning application (as of 28/08/2020) achieving 90% (or more) reduction in NOx annual emissions (tonnes/year). This can be achieved, for example, with Selective Catalytic Reduction (SCR) technology.

REASON

To reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), Policy SI 1 of the London Plan (2021) and paragraph 170 of the National Planning Policy Framework (2019).

SCHEDULE OF CONDITIONS

- 30 · All Non-Road Mobile machinery (NRMM) of net power of 37kW and up to and including 560kW used during the demolition, site preparation and construction phases shall comply with the emissions standards set out in chapter 4, proposal 4.2.3.a of the London Environment Strategy. Unless it complies with the standard set out in the London Environment Strategy, no NRMM shall be onsite, at any time, whether in use or not, without the prior written consent of the LPA. The developer shall keep an up to date list of all NRMM used during the demolition, site preparation and construction phases of the development on the online register <https://nrmm.london/>

REASON

To comply with the London's Low Emission Zone for non-road mobile machinery as per requirements of the London Environment Strategy, in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), Policy SI 1 of the London Plan 2021) and paragraph 170 of the National Planning Policy Framework (2019).

SCHEDULE OF CONDITIONS

- 31 (i) The development shall not commence until a scheme to deal with contamination has been submitted to and approved by the Local Planning Authority (LPA). All works which form part of the remediation scheme shall be completed before any part of the development is occupied or brought into use unless the Local Planning Authority dispenses with any such requirement specifically and in writing. The scheme shall include all of the following measures unless the LPA dispenses with any such requirement specifically and in writing:
- (a) A desk-top study carried out by a competent person to characterise the site and provide information on the history of the site/surrounding area and to identify and evaluate all potential sources of contamination and impacts on land and other identified receptors relevant to the site;
 - b) A site investigation, including where relevant soil and soil gas sampling, together with the results of analysis and risk assessment shall be carried out by a suitably qualified and accredited consultant/contractor. The report should also clearly identify all risks, limitations and recommendations for remedial measures to make the site suitable for the proposed use; and
 - (c) A written method statement providing details of the remediation scheme and how the completion of the remedial works for each phase will be verified shall be agreed in writing with the LPA prior to commencement of each phase, along with the details of a watching brief to address undiscovered contamination. No deviation shall be made from this scheme without the express agreement of the LPA prior to its implementation.
- (ii) If during remedial or development works contamination not addressed in the submitted remediation scheme is identified an addendum to the remediation scheme shall be agreed with the LPA prior to implementation; and
- (iii) Upon completion of the approved remedial works, this condition will not be discharged until a comprehensive verification report has been submitted to and approved by the LPA. The report shall include the details of the final remediation works and their verification to show that the works for each phase have been carried out in full and in accordance with the approved methodology.
- (iv) No contaminated soils or other materials shall be imported to the site. All imported soils for landscaping purposes shall be clean and free of contamination. Before any part of the development is occupied, all imported soils shall be independently tested for chemical contamination, and the results of this testing shall be submitted and approved in writing by the Local Planning Authority.

REASON

To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to property and ecological systems and the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with Policy DME1 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

SCHEDULE OF CONDITIONS

- 32 · No piling shall take place until a Piling Method Statement (detailing the depth and type of piling to be undertaken and the methodology by which such piling will be carried out, including measures to prevent and minimise the potential for damage to subsurface sewerage infrastructure, and the programme for the works) has been submitted to and approved in writing by the local planning authority in consultation with Thames Water, the Environment Agency, Network Rail and the National Grid. Any piling must be undertaken in accordance with the terms of the approved piling method statement.

REASON

To ensure that the proposed piling, deep foundations and other intrusive groundworks does not harm groundwater resources, in accordance with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

- 33 · No development approved by this planning permission shall commence until a remediation strategy to deal with the risks associated with contamination of the site in respect of the development hereby permitted has been submitted to and approved in writing by the Local Planning Authority, in consultation with the Environment Agency. This strategy will include the following components:
1. A preliminary risk assessment which has identified:
 - all previous uses
 - potential contaminants associated with those uses
 - a conceptual model of the site indicating sources, pathways and receptors
 - potentially unacceptable risks arising from contamination at the site
 2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off-site.
 3. The results of the site investigation and the detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.
 4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require the written consent of the local planning authority. The scheme shall be implemented as approved.

REASON

To ensure that the development does not contribute to, and is not put at unacceptable risk from or adversely affected by, unacceptable levels of water pollution, in accordance with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

SCHEDULE OF CONDITIONS

- 34 · Prior to any part of the permitted development being brought into use, a verification report demonstrating the completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Environment Agency. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.

REASON

To ensure that the site does not pose any further risk to the water environment by demonstrating that the requirements of the approved verification plan have been met and that remediation of the site is complete, in accordance with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

- 35 · The development hereby permitted shall not commence until a monitoring and maintenance plan in respect of contamination, including a timetable of monitoring and submission of reports to the Local Planning Authority, has been submitted to and approved in writing by the Local Planning Authority, in consultation with the Environment Agency. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to and approved in writing by the Local Planning Authority.

REASON

To ensure that the site does not pose any further risk to the water environment by managing any ongoing contamination issues and completing all necessary long-term remediation measures, in accordance with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

- 36 · If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until a remediation strategy detailing how this contamination will be dealt with has been submitted to and approved in writing by the Local Planning Authority, in consultation with the Environment Agency. The remediation strategy shall be implemented as approved.

REASON

To ensure that the development does not contribute to, is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution from previously unidentified contamination sources at the development site, in accordance with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

SCHEDULE OF CONDITIONS

- 37 · No drainage systems for the infiltration of surface water to the ground are permitted other than with the written consent of the Local Planning Authority, in consultation with the Environment Agency. Any proposals for such systems must be supported by an assessment of the risks to controlled waters. The development shall be carried out in accordance with the approved details.

REASON

To ensure that the development does not contribute to, is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution caused by mobilised contaminants with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

- 38 · A scheme for managing any borehole installed for the investigation of soils, groundwater or geotechnical purposes shall be submitted to and approved in writing by the Local Planning Authority, in consultation with the Environment Agency. The scheme shall provide details of how redundant boreholes are to be decommissioned and how any boreholes that need to be retained, post-development, for monitoring purposes will be secured, protected and inspected. The scheme as approved shall be implemented prior to the occupation of any part of the permitted development.

REASON

To ensure that redundant boreholes are safe and secure, and do not cause groundwater pollution or loss of water supplies, in accordance with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020) and paragraph 170 of the National Planning Policy Framework (2019).

- 39 · Prior to commencement of works, full details of excavations and earthworks to be carried out near the railway undertaker's boundary fence should be submitted to and approved in writing by the Local Planning Authority, in consultation with Network Rail. The works shall only be carried out in accordance with the approved details.

REASON

To ensure all excavations/earthworks carried out in the vicinity of Network Rail's property/structures are designed and executed such that no interference with the integrity of that property/structure can occur.

- 40 · The building(s) shall achieve 'Secured by Design' accreditation awarded by the Hillingdon Metropolitan Police Crime Prevention Design Adviser (CPDA) on behalf of the Association of Chief Police Officers (ACPO). No building shall be occupied until accreditation has been achieved.

REASON

In pursuance of the Council's duty under section 17 of the Crime and Disorder Act 1998 to consider crime and disorder implications in excising its planning functions; to promote the well being of the area in pursuance of the Council's powers under section 2 of the Local Government Act 2000 to ensure the development provides a safe and secure environment in accordance with Policy DMHB 15 of the Hillingdon Local Plan: Part 2 (2020) and Policy D11 of the London Plan (2021).

SCHEDULE OF CONDITIONS

- 41 . Prior to the completion of above ground works, a written update on discussions relating to potential opportunities for the export of heat to interested neighbouring sites, shall be provided to the Local Planning Authority and the Greater London Authority. The update should include evidence of correspondence with any interested neighbouring site owners on this matter and confirm whether it will be feasible, or not, to pursue a possible connection to a District Heating Network.

REASON

To ensure compliance with Policy SI 3 of the London Plan (2021).

INFORMATIVES:

- 1 . The decision to GRANT planning permission has been taken having regard to all relevant planning legislation, regulations, guidance, circulars and Council policies, including The Human Rights Act (1998) (HRA 1998) which makes it unlawful for the Council to act incompatibly with Convention rights, specifically Article 6 (right to a fair hearing); Article 8 (right to respect for private and family life); Article 1 of the First Protocol (protection of property) and Article 14 (prohibition of discrimination).
- 2 . The decision to GRANT planning permission has been taken having regard to the policies and proposals in the Hillingdon Local Plan Part 1 (2012) and Part 2 (2020) set out below, including Supplementary Planning Guidance, and to all relevant material considerations, including The London Plan 2021 and national guidance.

Part 1 Policies:

PT1.BE1	(2012) Built Environment
PT1.EM1	(2012) Climate Change Adaptation and Mitigation
PT1.EM11	(2012) Sustainable Waste Management
PT1.EM3	(2012) Blue Ribbon Network
PT1.EM6	(2012) Flood Risk Management
PT1.EM7	(2012) Biodiversity and Geological Conservation
PT1.EM8	(2012) Land, Water, Air and Noise
PT1.HE1	(2012) Heritage
PT1.T1	(2012) Accessible Local Destinations

Part 2 Policies

DMAV 1	Safe Operation of Airports
DMCI 7	Planning Obligations and Community Infrastructure Levy
DME 1	Employment Uses in Designated Sites
DMEI 1	Living Walls and Roofs and Onsite Vegetation
DMEI 10	Water Management, Efficiency and Quality
DMEI 11	Protection of Ground Water Resources
DMEI 12	Development of Land Affected by Contamination
DMEI 14	Air Quality
DMEI 2	Reducing Carbon Emissions
DMEI 7	Biodiversity Protection and Enhancement
DMEI 8	Waterside Development

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DMEI 9	Management of Flood Risk
DMHB 1	Heritage Assets
DMHB 11	Design of New Development
DMHB 12	Streets and Public Realm
DMHB 14	Trees and Landscaping
DMHB 15	Planning for Safer Places
DMHB 2	Listed Buildings
DMHB 3	Locally Listed Buildings
DMHB 4	Conservation Areas
DMHB 7	Archaeological Priority Areas and archaeological Priority Zones
DMT 1	Managing Transport Impacts
DMT 2	Highways Impacts
DMT 3	Road Safeguarding
DMT 4	Public Transport
DMT 5	Pedestrians and Cyclists
DMT 6	Vehicle Parking
LPP 2.1	(2016) London in its global, European and United Kingdom context
LPP 2.17	(2016) Strategic Industrial Locations
LPP 4.1	(2016) Developing London's economy
LPP 4.10	(2016) New and Emerging Economic Sectors
LPP 4.11	(2016) Encouraging a connected economy
LPP 4.12	(2016) Improving opportunities for all
LPP 5.10	(2016) Urban Greening
LPP 5.11	(2016) Green roofs and development site environs
LPP 5.12	(2016) Flood risk management
LPP 5.13	(2016) Sustainable drainage
LPP 5.14	(2016) Water quality and wastewater infrastructure
LPP 5.15	(2016) Water use and supplies
LPP 5.16	(2016) Waste net self-sufficiency
LPP 5.17	(2016) Waste capacity
LPP 5.21	(2016) Contaminated land
LPP 5.7	(2016) Renewable energy
LPP 6.1	(2016) Strategic Approach
LPP 6.10	(2016) Walking
LPP 6.11	(2016) Smoothing Traffic Flow and Tackling Congestion
LPP 6.12	(2016) Road Network Capacity
LPP 6.13	(2016) Parking
LPP 6.3	(2016) Assessing effects of development on transport capacity
LPP 6.4	(2016) Enhancing London's Transport Connectivity

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LPP 6.7	(2016) Better Streets and Surface Transport
LPP 6.9	(2016) Cycling
LPP 7.13	(2016) Safety, security and resilience to emergency
LPP 7.14	(2016) Improving air quality
LPP 7.15	(2016) Reducing and managing noise, improving and enhancing the acoustic environment and promoting appropriate soundscapes.
LPP 7.19	(2016) Biodiversity and access to nature
LPP 7.2	(2016) An inclusive environment
LPP 7.24	(2016) Blue Ribbon Network
LPP 7.3	(2016) Designing out crime
LPP 7.30	(2016) London's canals and other rivers and waterspaces
LPP 7.4	(2016) Local character
LPP 7.5	(2016) Public realm
LPP 7.6	(2016) Architecture
LPP 7.8	(2016) Heritage assets and archaeology
LPP 8.2	(2016) Planning obligations
LPP 8.3	(2016) Community infrastructure levy
LPP 8.4	(2016) Monitoring and review
NPPF- 11	NPPF-11 2018 - Making effective use of land
NPPF- 12	NPPF-12 2018 - Achieving well-designed places
NPPF- 14	NPPF-14 2018 - Meeting the challenge of climate change, flooding and coastal change
NPPF- 15	NPPF-15 2018 - Conserving and enhancing the natural environment
NPPF- 16	NPPF-16 2018 - Conserving & enhancing the historic environment
NPPF- 2	NPPF-2 2018 - Achieving sustainable development
NPPF- 6	NPPF-6 2018 - Building a strong, competitive economy
NPPF- 8	NPPF-8 2018 - Promoting healthy and safe communities
NPPF- 9	NPPF-9 2018 - Promoting sustainable transport

- 3 . In dealing with the application the Council has implemented the requirement in the National Planning Policy Framework to work with the applicant in a positive and proactive way. We have made available detailed advice in the form of our statutory policies from Local Plan Part 1, Local Plan Part 2, Supplementary Planning Documents, Planning Briefs and other informal written guidance, as well as offering a full pre-application advice service, in order to ensure that the applicant has been given every opportunity to submit an application which is likely to be considered favourably.

- 4 . Under the terms of the Planning Act 2008 (as amended) and Community Infrastructure Levy Regulations 2010 (as amended), this development is liable to pay the London Borough of Hillingdon Community Infrastructure Levy (CIL) and the Mayor of London's Community Infrastructure Levy (CIL). This will be calculated in accordance with the

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London Borough of Hillingdon CIL Charging Schedule 2014 and the Mayor of London's CIL Charging Schedule 2012. Before commencement of works the development parties must notify the London Borough of Hillingdon of the commencement date for the construction works (by submitting a Commencement Notice) and assume liability to pay CIL (by submitting an Assumption of Liability Notice) to the Council at planning@hillingdon.gov.uk. The Council will then issue a Demand Notice setting out the date and the amount of CIL that is payable. Failure to submit a valid Assumption of Liability Notice and Commencement Notice prior to commencement of the development may result in surcharges being imposed.

The above forms can be found on the planning portal at:
www.planningportal.gov.uk/planning/applications/howtoapply/whattosubmit/cil

Pre-Commencement Conditions: These conditions are important from a CIL liability perspective as a scheme will not become CIL liable until all of the pre-commencement conditions have been discharged/complied with.

- 5 . Given the nature of the proposed development it is possible that a crane may be required during its construction. We would, therefore, draw the applicant's attention to the requirement within the British Standard Code of Practice for the safe use of Cranes, for crane operators to consult the aerodrome before erecting a crane in close proximity to an aerodrome. This is explained further in Advice Note 4, 'Cranes and Other Construction Issues' (available at <http://www.aoa.org.uk/wp-content/uploads/2016/09/Advice-Note-4-Cranes-2016.pdf>)

It is important that any conditions requested in this response are applied to a planning approval. Where a Planning Authority proposes to grant permission against the advice of Heathrow Airport Ltd, or not to attach conditions which Heathrow Airport Ltd has advised, it shall notify Heathrow Airport Ltd, and the Civil Aviation Authority as specified in the Town & Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosive Storage Areas) Direction 2002.

- 6 . A Groundwater Risk Management Permit from Thames Water will be required for discharging groundwater into a public sewer. Any discharge made without a permit is deemed illegal and may result in prosecution under the provisions of the Water Industry Act 1991. We would expect the developer to demonstrate what measures he will undertake to minimise groundwater discharges into the public sewer. Permit enquiries should be directed to Thames Waters Risk Management Team by telephoning 020 3577 9483 or by emailing trade.effluent@thameswater.co.uk . Application forms should be completed on line via www.thameswater.co.uk. Please refer to the Wholesale; Business customers; Groundwater discharges section.
- 7 . The Bird Hazard Management Plan must ensure that flat/shallow pitched roofs be constructed to allow access to all areas by foot using permanent fixed access stairs ladders or similar. The owner/occupier must not allow gulls, to nest, roost or loaf on the building. Checks must be made weekly or sooner if bird activity dictates, during the breeding season. Outside of the breeding season gull activity must be monitored and the roof checked regularly to ensure that gulls do not utilise the roof. Any gulls found nesting, roosting or loafing must be dispersed by the owner/occupier when detected or

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when requested by Heathrow Airside Operations staff. In some instances it may be necessary to contact Heathrow Airside Operations staff before bird dispersal takes place. The owner/occupier must remove any nests or eggs found on the roof.

The breeding season for gulls typically runs from March to June. The owner/occupier must obtain the appropriate licences where applicable from Natural England before the removal of nests and eggs.

- 8 . The applicant/developer is advised to review the Canal & River Trust's "Code of Practice for Works affecting the Canal & River Trust and contact (keith.boswell@canalrivertrust.org.uk) in order to ensure that any necessary consents are obtained and that the works are compliant. (<https://canalrivertrust.org.uk/business-and-trade/undertaking-works-on-our-property-and-our-code-of-practice>)".

The applicant/developer is advised that surface water discharge to the Grand Union Canal will require prior consent from the Canal & River Trust and should contact Liz Murdoch in the Canal & River Trust's Utilities team regarding such an agreement (james.jeffrey@canalrivertrust.org.uk).

The applicant/developer is advised that the proposed works require written consent from the Canal & River Trust, and they should contact the Canal & River Trust's Estates team (Bernadette.mcnicholas@canalrivertrust.org.uk) regarding the required agreement.

- 9 . Informative 1 - Discharges affecting groundwater

The Environmental Permitting (England & Wales) Regulations 2016 make it an offence to cause or knowingly permit a groundwater activity unless authorised by an environmental permit which we will issue. A groundwater activity includes any discharge that will result in the input of pollutants to groundwater.

Informative 2 - Flood risk activity permit

The proposed development is located adjacent to the River Crane. The Environmental Permitting (England and Wales) Regulations 2016 require a permit to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culvert (16 metres if tidal)
- on or within 16 metres of a sea defence
- involving quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert in a floodplain more than 8 metres from the river bank, culvert or flood defence structure (16 metres if it's a tidal main river) and you do not already have planning permission.

For further guidance please visit <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits> or contact our National Customer Contact Centre on 03702 422 549. The applicant should not assume that a permit will automatically be forthcoming once planning permission has been granted, and we advise them to consult with us at the earliest opportunity.

SCHEDULE OF CONDITIONS

Informative 3 - Combustion installation permit

The proposed combustion installation will require a permit under Section 1.1 Part A of the Environmental Permitting Regulations (England and Wales) 2016. We will consider the following areas of potential harm when assessing this permit:

- Management - including energy efficiency and avoidance, recovery and disposal of wastes
- Operations - including liquid fuels, gaseous fuels and biomass
- Emissions and monitoring - including point source emissions to water, point source emissions to air, fugitive emissions and monitoring

In circumstances where an activity/operation meets certain criteria, an exemption from permitting may apply. More information on exempt activities can be found here:

<https://www.gov.uk/guidance/register-your-waste-exemptions-environmental-permits>

The applicant is advised to find out more information about the permit application process online and to send a pre-application enquiry form via the gov.uk website:

<https://www.gov.uk/government/publications/environmental-permit-pre-application-advice-form>

Informative 4 - Waste on-site

The CL:AIRE Definition of Waste: Development Industry Code of Practice (Version 2) provides operators with a framework for determining whether or not excavated material arising from site during remediation and/ or land development works are waste or have ceased to be waste. Under the Code of Practice:

- Excavated materials that are recovered via a treatment operation can be re-used on-site providing they are treated to a standard such that they fit for purpose and unlikely to cause pollution.
- Treated materials can be transferred between sites as part of a hub and cluster project.
- Some naturally occurring clean material can be transferred directly between sites.

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on-site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

We recommends that developers should refer to:

- the position statement on the Definition of Waste: Development Industry Code of Practice
- the waste management page on GOV.UK

Informative 5 - Waste to be taken off-site

Contaminated soil that is (or must be) disposed of is waste. Therefore, its handling, transport, treatment and disposal are subject to waste management legislation, which includes:

- Duty of Care Regulations 1991
- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2016
- The Waste (England and Wales) Regulations 2011

SCHEDULE OF CONDITIONS

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standard BS EN 14899:2005 'Characterization of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

If the total quantity of hazardous waste material produced or taken off-site is 500kg or greater in any 12 month period, the developer will need to register with us as a hazardous waste producer. Refer to the hazardous waste pages on GOV.UK for more information.

Informative 6 - Groundwater protection

We would like to refer the applicant to our groundwater position statements in 'The Environment Agency's approach to groundwater protection', available from gov.uk.

We recommend that developers should:

1. Follow the risk management framework provided in CLR11, Model Procedures for the Management of Land Contamination, when dealing with land affected by contamination.
2. Refer to our Guiding principles for land contamination for the type of information that we require in order to assess risks to controlled waters from the site. The local authority can advise on risk to other receptors, such as human health.
3. Consider using the National Quality Mark Scheme for Land Contamination Management which involves the use of competent persons to ensure that land contamination risks are appropriately managed.
4. Refer to the contaminated land pages on GOV.UK for more information.

10 . Plant, Scaffolding and Cranes

Any scaffold which is to be constructed adjacent to the railway must be erected in such a manner that, at no time will any poles or cranes over-sail or fall onto the railway. All plant and scaffolding must be positioned, that in the event of failure, it will not fall on to Network Rail land.

Landscape Scheme

Where trees/shrubs are to be planted adjacent to the railway boundary, these shrubs should be positioned at a minimum distance greater than their predicted mature height from the boundary. Certain broad leaf deciduous species should not be planted adjacent to the railway boundary. Where landscaping is proposed as part of an application adjacent to the railway it will be necessary for details of the landscaping to be known and approved to ensure it does not impact upon the railway infrastructure. Any hedge planted adjacent to Network Rail's boundary fencing for screening purposes should be so placed that when fully grown it does not damage the fencing or provide a means of scaling it. No hedge should prevent Network Rail from maintaining its boundary fence. Lists of trees that are permitted and those that are not are provided below and these should be added to any tree planting conditions:

Permitted:

SCHEDULE OF CONDITIONS

Birch (Betula), Crab Apple (Malus Sylvestris), Field Maple (Acer Campestre), Bird Cherry (Prunus Pados), Wild Pear (Pyrus Communis), Fir Trees - Pines (Pinus), Hawthorne (Cretaegus), Mountain Ash - Whitebeams (Sorbus), False Acacia (Robinia), Willow Shrubs (Shrubby Salix), Thuja Plicatat "Zebrina"

Not Permitted:

Alder (Alnus Glutinosa), Aspen - Poplar (Populus), Beech (Fagus Sylvatica), Wild Cherry (Prunus Avium), Hornbeam (Carpinus Betulus), Small-leaved Lime (Tilia Cordata), Oak (Quercus), Willows (Salix Willow), Sycamore - Norway Maple (Acer), Horse Chestnut (Aesculus Hippocastanum), Sweet Chestnut (Castanea Sativa), London Plane (Platanus Hispanica).

Lighting

Any lighting associated with the development (including vehicle lights) must not interfere with the sighting of signalling apparatus and/or train drivers vision on approaching trains. The location and colour of lights must not give rise to the potential for confusion with the signalling arrangements on the railway. The developers should obtain Network Rail's Asset Protection Engineer's approval of their detailed proposals regarding lighting.

END OF SCHEDULE

Address:

Residents Services
London Borough of Hillingdon
3 North Civic Centre, High Street, Uxbridge UB8 1UW
Tel: 01895 250230
www.hillingdon.gov.uk

GRANT OF PLANNING PERMISSION

Application Ref.No.: 75111/APP/2020/1955

SCHEDULE OF PLANS

NWA-0471-XX-XX-RP-A-0001-DAS INTRODUCTION - received 29 Jun 2020
NWA-0471-XX-XX-RP-A-0002-DAS SITE - received 29 Jun 2020
NWA-0471-XX-XX-RP-A-0003-DAS CONSULTATION - received 29 Jun 2020
NWA-0471-XX-XX-RP-A-0004-DAS DESIGN - received 29 Jun 2020
NWA-0471-XX-XX-RP-A-0005-DAS EXTERNAL WORKS - received 29 Jun 2020
NWA-0471-XX-XX-RP-A-0006-DAS SUSTAINABILITY - received 29 Jun 2020
NWA-0471-XX-XX-RP-A-0007-DAS ACCESS - received 29 Jun 2020
NWA-0471-SN-ZZ-DR-A-03-000 Rev. P02 - received 01 Sep 2020
NWA-0471-SN-ZZ-DR-A-90-005 Rev. P02 - received 01 Sep 2020
NWA-0471-SN-XX-DR-A-90-006 Rev. P02 - received 01 Sep 2020
NWA-0471-SN-ZZ-DR-A-02-000 Rev. P01 - received 29 Jun 2020
R/PNA/1/200529 Version 03 Noise Assessment (Dated 5th June 2020) - received 29 Jun 2020
02 Rev. A Tree Constraints Plan - received 29 Jun 2020
03 Rev. B Tree Retention and Protection Plan - received 29 Jun 2020
05 Rev. B River Crane Boundary Landscape Cross sections - received 29 Jun 2020
06 Rev. B Indicative Landscape Boundary Cross Sections - received 29 Jun 2020
10 Rev. D Concept Landscape Layout Plan - received 29 Jun 2020
NWA-0471-DC-00-DR-A-03-005 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-01-DR-A-03-010 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-02-DR-A-03-020 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-03-DR-A-03-030 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-04-DR-A-03-040 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-05-DR-A-03-050 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-ZZ-DR-A-27-060 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-XX-DR-A-03-700 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-XX-DR-A-03-800 Rev. P01 - received 29 Jun 2020
NWA-0471-DC-ZZ-DR-A-31-100 Rev. P01 - received 29 Jun 2020
NWA-0471-EC1-ZZ-DR-A-03-005 Rev. P01 - received 29 Jun 2020
NWA-0471-EC1-ZZ-DR-A-03-006 Rev. P01 - received 29 Jun 2020

NWA-0471-EC1-ZZ-DR-A-03-700 Rev. P01 - received 29 Jun 2020
NWA-0471-EC1-ZZ-DR-A-31-100 Rev. P01 - received 29 Jun 2020
NWA-0471-SN-ZZ-DR-A-01-000 Rev. P01 - received 29 Jun 2020
Cover Letter (Dated 19th June 2020) - received 29 Jun 2020
NWA-0471-EC2-ZZ-DR-A-03-005 Rev. P02 - received 02 Sep 2020
NWA-0471-EC2-ZZ-DR-A-03-700 Rev. P02 - received 02 Sep 2020
NWA-0471-EC2-ZZ-DR-A-31-000 Rev. P02 - received 02 Sep 2020
NWA-0471-SN-ZZ-DR-A-90-901 Rev. P02 - received 13 Aug 2020
CL-5447-RPT-002 V1.0 Aviation Report (Dated June 2020) - received 29 Jun 2020
BREEAM Data Centres 2010 Pre-Assessment Summary Report (Dated 4th June 2020) - received 29 Jun 2020
HPF-0471-XX-XX-RP-C-95003 Rev. 03 Construction Logistics Plan (Dated June 2020) - received 29 Jun 2020
7854.EcoAs.vf7 Ecological Assessment (Dated June 2020) - received 29 Jun 2020
WED15516 Issue 03 Energy Statement (Dated June 2020) - received 29 Jun 2020
HPF-0471-ZZ-XX-RP-E63001 Issue 03 External Lighting Strategy (Dated June 2020) - received 29 Jun 2020
Fire Safety Statement Issue 01 (Dated 10th June 2020) - received 29 Jun 2020
S20041499 Issue 01 Fire Safety Strategy Report (Dated 3rd June 2020) - received 29 Jun 2020
Planning & Economic Statement (Dated June 2020) - received 29 Jun 2020
Statement of Community Involvement (Dated June 2020) - received 29 Jun 2020
2017/19/RP03 Townscape and Visual Impact Assessment (Dated 9th June 2020) - received 29 Jun 2020
HPF-0471-ZZ-XX-RPMEP-50001 Issue 3 Utility Statement Report (Dated June 2020) - received 29 Jun 2020
2017/19/RP04 10 year Landscape Maintenance and Management Plan (Dated 29th May 2020) - received 29 Jun 2020
9167 (AQ) rev4.docx Air Quality Assessment (Dated 15th June 2020) - received 29 Jun 2020
479-20 Rev. 1 Arboricultural Impact Assessment (Dated 28th May 2020) - received 29 Jun 2020
HPF-0471-XX-XX-RP-C91001 Issue 03 Flood Risk Assessment and Drainage Strategy (Dated June 2020) - received 29 Jun 2020
Heritage Statement (Dated June 2020) - received 29 Jun 2020
2017/19/RP01B Landscape Design Statement (Dated 9th June 2020) - received 29 Jun 2020
19.0633/CB/NW Rev. B Phase 1 Environmental Risk Assessment (Dated June 2020) - received 29 Jun 2020
20.0023/CB/DCN Rev. B Phase 2 Ground Investigation Report (Dated 4th June 2020)

- received 29 Jun 2020

Sav 01 - Condition 6 Plan Showing Extent of Abellio Land - received 24 Sep 2020

Remediation Strategy Rev. B (Dated June 2020) - received 29 Jun 2020

WED15516 Issue 05 Sustainability Statement (Dated June 2020) - received 29 Jun 2020

HPF-0471-XX-XX-RP-C-95001 Issue 03 Transport Assessment (Dated June 2020) - received 29 Jun 2020

Excool SEER Hourly Data 656kW GLA Issue - received 02 Dec 2020

Pre Stage 2 GLA Consultation Energy Memo 2020 - received 02 Dec 2020

Potential for District Heating Email (Dated 26th November 2020) - received 02 Dec 2020

GLA Energy Correspondence (Dated 17th November 2020) - received 02 Dec 2020

GLA Energy Correspondence (Dated 25th November 2020) - received 02 Dec 2020

GLA Energy Correspondence (Dated 30th November 2020) - received 02 Dec 2020

Ark Correspondence with Adjacent Landowners (Dated 25th November 2020) - received 02 Dec 2020

NWA-0471-SN-ZZ-DR-A-90-900 Rev. P01 - received 29 Jun 2020

NWA-0471-SN-ZZ-DR-A-90-902 Rev. P01 - received 29 Jun 2020

NWA-0471-VR-ZZ-DR-A-03-005 Rev. P01 - received 29 Jun 2020

P1152-ARK-DWG-1001-1 Rev. P4 - received 29 Jun 2020

P1152-ARK-DWG-1001_2 Rev. P4 - received 29 Jun 2020

HPF-0471-XX-XX-C-DR-91114 Rev. P01 - received 18 Aug 2020

15 Canal Towpath Ramp Proposals - received 13 Aug 2020

16 Plan Detail and Sections of Towpath - received 13 Aug 2020

NWA-047-SN-ZZ-DR-A-90-901 Rev. P02 - received 13 Aug 2020

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)

If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the office of the First Secretary of State under Section 78 of the Town and Country Planning Act 1990.

If you want to appeal, then you must do so within six months of the date of this notice, using a form which you can get from the Planning Inspectorate at Customer Support Unit, Room 3/15 Eagle Wing, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN (Tel 0117 372 8424). Appeal forms can be downloaded from the Planning Inspectorate's website at www.Planning-inspectorate.gov.uk

If you intend to submit an appeal that you would like examined by inquiry then you must notify the Local Planning Authority and Planning Inspectorate (inquiryappeals@planninginspectorate.gov.uk) at least 10 days before submitting the appeal.

Further details are available at www.gov.uk/government/collections/casework-dealt-with-by-inquiries

The Secretary of State can allow a longer period for giving notice of an appeal, but he will not normally be prepared to use this power unless there are special circumstances, which excuse the delay in giving notice of an appeal.

The Secretary of State need not consider an appeal if it seems to him that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

In practice, the Secretary of State does not refuse to consider appeals solely because the local planning authority based their decision on a direction given by him.

Purchase Notices.

If either the local planning authority or the officer of the First Secretary of State refuses permission to develop land or grants it subject to conditions, the owner may claim that he can neither put the land to a reasonably beneficial use by carrying out of any development which has been or would be permitted.

In these circumstances, the owner may serve a purchase notice on the Council (District Council, London Borough Council or Common Council of the City of London) in whose area the land is situated. This notice will require the Council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.



a Colliers
Company.

**Appendix 2 –
Soil Data**



Charlie Bruinvels
Paragon New Homes Ltd
The Harlequin Building
65 Southwark Street
London
SE1 0HR

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: charliebruinvels@paragonbc.co.uk

Analytical Report Number : 21-80717

Project / Site name:	Project Union	Samples received on:	11/06/2021
Your job number:	201054	Samples instructed on/ Analysis started on:	11/06/2021
Your order number:	201054_CB	Analysis completed by:	22/06/2021
Report Issue Number:	1	Report issued on:	22/06/2021
Samples Analysed:	4 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

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

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

Analytical Report Number: 21-80717
 Project / Site name: Project Union
 Your Order No: 201054_CB

Lab Sample Number	1901009			1901010			1901011			1901012		
Sample Reference	HP101			HP102			HP103			HP104		
Sample Number	None Supplied			None Supplied			None Supplied			None Supplied		
Depth (m)	0.20			0.20			0.20			0.20		
Date Sampled	08/06/2021			08/06/2021			08/06/2021			08/06/2021		
Time Taken	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	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	0.01	NONE	1.6	0.40	5.5	11					
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.0					

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.0	10.1	9.4	9.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	3200	4200	4500	4400
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	g/l	0.00125	MCERTS	0.84	1.0	1.2	0.86
Sulphide	mg/kg	1	MCERTS	16	1.0	15	13
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.8	1.1	1.3	1.3

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.4	1.5
Acenaphthylene	mg/kg	0.05	MCERTS	0.50	< 0.05	0.30	0.27
Acenaphthene	mg/kg	0.05	MCERTS	0.92	0.28	1.4	1.5
Fluorene	mg/kg	0.05	MCERTS	1.4	0.33	0.95	1.7
Phenanthrene	mg/kg	0.05	MCERTS	6.3	1.4	2.9	8.6
Anthracene	mg/kg	0.05	MCERTS	5.2	0.65	2.2	3.0
Fluoranthene	mg/kg	0.05	MCERTS	13	3.1	13	14
Pyrene	mg/kg	0.05	MCERTS	14	3.0	14	12
Benzo(a)anthracene	mg/kg	0.05	MCERTS	7.6	1.4	4.1	5.0
Chrysene	mg/kg	0.05	MCERTS	7.1	1.5	3.7	4.8
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	7.9	1.3	2.3	3.6
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	3.4	1.1	2.3	3.1
Benzo(a)pyrene	mg/kg	0.05	MCERTS	7.5	1.3	2.4	3.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	3.7	0.71	1.0	1.6
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.1	< 0.05	0.36	0.53
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	4.2	0.84	1.2	2.0

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	83.5	16.9	52.8	66.9

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	19	20	17
Boron (water soluble)	mg/kg	0.2	MCERTS	2.9	2.7	3.1	1.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	40	34	34
Copper (aqua regia extractable)	mg/kg	1	MCERTS	48	52	47	56
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140	170	140	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	28	27	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	190	180	170

Analytical Report Number: 21-80717
 Project / Site name: Project Union
 Your Order No: 201054_CB

Lab Sample Number	1901009	1901010	1901011	1901012
Sample Reference	HP101	HP102	HP103	HP104
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.20	0.20	0.20
Date Sampled	08/06/2021	08/06/2021	08/06/2021	08/06/2021
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	

Monoaromatics & Oxygenates

Compound	Units	Limit of detection	Accreditation Status	1901009	1901010	1901011	1901012
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	Limit of detection	Accreditation Status	1901009	1901010	1901011	1901012
TPH C10 - C40	mg/kg	10	MCERTS	530	190	370	440

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	Limit of detection	Accreditation Status	1901009	1901010	1901011	1901012
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	2.1	12
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	8.3	13	33
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	64	54	75	84
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	64	63	90	130

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	Limit of detection	Accreditation Status	1901009	1901010	1901011	1901012
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	5.0	4.3
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	30	6.9	29	27
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	85	26	87	93
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	220	57	100	110
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	330	90	220	240

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 21-80717

Project / Site name: Project Union

* 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 *
1901009	HP101	None Supplied	0.2	Brown sand with gravel.
1901010	HP102	None Supplied	0.2	Brown sand with gravel.
1901011	HP103	None Supplied	0.2	Brown loam and gravel.
1901012	HP104	None Supplied	0.2	Brown loam and clay with gravel.

Analytical Report Number : 21-80717
Project / Site name: Project Union

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
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
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
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
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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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
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 organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS



Analytical Report Number : 21-80717
 Project / Site name: Project Union

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



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e: charliebruinvels@paragonbc.co.uk

Analytical Report Number : 21-83004

Project / Site name:	Project Union	Samples received on:	24/06/2021
Your job number:	201054	Samples instructed on/ Analysis started on:	24/06/2021
Your order number:	201054-CB	Analysis completed by:	02/07/2021
Report Issue Number:	1	Report issued on:	02/07/2021
Samples Analysed:	2 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 21-83004

Project / Site name: Project Union

Your Order No: 201054-CB

Lab Sample Number				1914609	1914610
Sample Reference				HP201	HP202
Sample Number				None Supplied	None Supplied
Depth (m)				0.20	0.20
Date Sampled				22/06/2021	22/06/2021
Time Taken				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	%	0.01	NONE	15	18
Total mass of sample received	kg	0.001	NONE	1.2	1.5

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.2	10.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	4600	5700
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.44	0.46
Sulphide	mg/kg	1	MCERTS	25	25
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.5	1.5

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.33	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1.3	0.78
Fluorene	mg/kg	0.05	MCERTS	1.3	0.73
Phenanthrene	mg/kg	0.05	MCERTS	5.5	3.0
Anthracene	mg/kg	0.05	MCERTS	3.2	1.3
Fluoranthene	mg/kg	0.05	MCERTS	11	6.9
Pyrene	mg/kg	0.05	MCERTS	8.9	6.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	3.5	2.2
Chrysene	mg/kg	0.05	MCERTS	2.7	1.7
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.6	1.7
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.5	0.73
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.3	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.92	0.57
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.34	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.1	0.73

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	46.3	27.9

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	15
Boron (water soluble)	mg/kg	0.2	MCERTS	3.5	3.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	45
Lead (aqua regia extractable)	mg/kg	1	MCERTS	110	110
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	57	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	150

Analytical Report Number: 21-83004

Project / Site name: Project Union

Your Order No: 201054-CB

Lab Sample Number				1914609	1914610
Sample Reference				HP201	HP202
Sample Number				None Supplied	None Supplied
Depth (m)				0.20	0.20
Date Sampled				22/06/2021	22/06/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	290	260
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	11	9.3
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	24	21
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	67	65
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	100	95

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	13	7.7
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	40	32
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	50	44
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	100	84

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 21-83004
Project / Site name: Project Union

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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 *
1914609	HP201	None Supplied	0.2	Brown clay with gravel.
1914610	HP202	None Supplied	0.2	Brown clay with gravel.

Analytical Report Number : 21-83004
Project / Site name: Project Union

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperin staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
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
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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
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
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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
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 organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS



Analytical Report Number : 21-83004
Project / Site name: Project Union

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



a Colliers
Company.

**Appendix 3 –
Groundwater Letter
Report**



a Colliers
Company.

211423/CB/GWR 3
13 July 2022

Mark Costello
Concert Ltd
182-194 Union House
Union Street
London
SE1 0LH

UNION PARK, BULLS BRIDGE, HAYES – GROUNDWATER MONITORING REPORT 3

Dear Mark

Introduction

This report presents an update on the groundwater monitoring completed at Union Park, Bulls Bridge Industrial Estate, Hayes, UB3 4QT (Figure 1, Appendix 1). Paragon has previously issued two monitoring reports for the first set of results (baseline and visits 1 to 6) in a report dated December 2021 (Groundwater Monitoring Initial Summary, 211423/CB/NW) and visits 7 to 14 in a report dated March 2022 (Groundwater Monitoring Report 2, 211423/AH/GWR 2).

The purpose of the work was to provide evidence to support the discharge of Planning Condition 35, which is for the provision of ongoing monitoring and maintenance, under the redevelopment application 75111/APP/2020/1955. The aim was to ensure that there are no adverse chemical impacts on the groundwater and the neighbouring River Crane as a direct result of piling activities taking place onsite. The piling works were completed in February 2022 and we have started the post-piling monthly monitoring. This report is to be submitted to the Local Authority to discharge the condition.

The results of the groundwater monitoring presented in the initial summary, Report 2 and in this report have been compared to the result of the baseline monitoring visit and the Site Specific Assessment Criteria (SSACs) derived in the Detailed Quantitative Risk Assessment (DQRA). The DQRA was completed by Paragon in July 2020 and was submitted to the Local Authority as part of the planning submission.

Previous Reports

The site has been subject to several phases of investigation. The following reports are relevant to this investigation and should be read in conjunction with this assessment.

- Paragon, 2022. Groundwater Monitoring Report 2. Reference: 211423/AH/GWR 2. Dated: 17 March 2022.
- Paragon, 2021. Groundwater Monitoring Initial Summary. Reference: 211423/CB/NW. Dated: 21 December 2021.
- Paragon, 2021. Piling Works Risk Assessment. Reference: 21.0198/CB/NW. Dated: 22 February 2021.
- Paragon, 2021. Remediation Strategy. Reference: 20.0023/CK/LSG Revision E. Dated: 2 September 2021.
- Paragon, 2021. Detailed Quantitative Risk Assessment (DQRA). Reference: 20.0023/CK/KJH Revision C. Dated: 11 November 2021.
- Paragon, 2021. Phase 2 Ground Investigation Report. Reference: 20.0023/CB/DCN Revision D. Dated: 11 November 2021.
- Paragon, 2021. Phase 1 Preliminary Risk Assessment. Reference: 19.0633/CB/NW Revision D. Dated: 11 November 2021.

Remediation Strategy: Requirement for Long Term Groundwater Monitoring

The Remediation Strategy proposed that although the impacts of site derived contamination on the River Crane were low, due to the proximity to the river, the potential for impacts to the river from piling were to be monitored through a long term monitoring plan. The monitoring programme was set out within Table 5 of the Remediation Strategy, which has been replicated below.

When preparing the Remediation Strategy, it was considered that the piling works would last 4-5 months and then break around the Christmas period, before re-starting in January 2022. Piling was due to finish at the end of January 2022.

Table 1. Table 5 from the Remediation Strategy: Long Term Monitoring Plan

Time	Monitoring Requirements
Pre-Development	Baseline monitoring
During Development (during piling)	Fortnightly monitoring visits for a duration of approximately 4-5 months (duration of piling) and to be increased during the shorter phase of piling post break (1-2 months).
During Development (during periods without piling)	Monthly monitoring visits (over the Christmas break 2021, approximately 1-2 months).
Post-Development (post-piling)	Monthly monitoring visits for six months.

The contaminants to be monitored were set out within the Remediation Strategy and included heavy metals, Polyaromatic Hydrocarbons (PAH), Petroleum Hydrocarbons (tested as Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) and Benzene, Toluene, ethylbenzene and xylene (BTEX), phenols and ammonia / ammoniacal nitrogen. In addition, parameters including pH, electrical conductivity, salinity, nitrate, nitrite, manganese and Mn²⁺ were to be recorded.

The Remediation Strategy stated that “should a deterioration in groundwater quality be detected in the Lynch Hills Gravel that may be related to the piling works, the piling operations will be stopped and the cause of the deterioration investigated. This would be through additional groundwater monitoring and cross-checking with recent piling records. Piling works will not continue until the issue is resolved. In the event that significant concentrations of contamination are identified, a remediation contractor would be contacted to establish an appropriate solution i.e. pump and treat, to address the contamination”.

Fieldwork

The boreholes completed as part of the initial summary were used for the monitoring presented in this report. A borehole location plan is presented in Figure 2, Appendix 1.

Groundwater monitoring was initially undertaken on a fortnightly basis following the baseline monitoring visit, which was completed on 5 August 2021. The dataset from the previous two reports has been updated to include the findings of visits 14 to 17, which were completed on a monthly basis. The dates of the groundwater monitoring visits are presented in Table 2.

The main contractor has provided Paragon with a programme of works carried out on site over the monitoring period. This information has been to determine whether any works took place in the vicinity of the boreholes and whether the works have had an influence on the groundwater quality. The piling works were carried out in the eastern part of the site from mid-December 2021 to February 2022. Whilst no gross contamination was recorded as being struck by the contractor, it is understood that obstructions were encountered between depths of 1.50mbgl to 4.00mbgl.

In addition, non-piling activities were taking place onsite during the monitoring period. These included the diversion of a gas main situated in the eastern part of the site by Cadent. The diversion works took place between December 2021 and mid- February 2022. It is understood that the excavations reached a maximum depth of 1.20mbgl. In addition, the ground beams were completed in June 2022 which involved excavating up to 10mbgl to the formation level. No gross contamination was reported by the contractor.

Table 2. Monitoring Visits Completed

Monitoring Round		Borehole Reference		
		BH101	BH102	BH103
Baseline				
05/08/21	Initial Baseline Visit	✓	✓	✓
During Piling				
19/08/21	Round 1	✓	✓	✓
31/08/21	Round 2	✓	✓	✓
14/09/21	Round 3	✓	✓	✓
30/09/21	Round 4	✓	✓	✓
13/10/21	Round 5	✓	✓	✓
28/10/21	Round 6	✓	✓	✓
10/11/21	Round 7	✓	✓	✓
23/11/21	Round 8	✓	✓	✓
07/12/21	Round 9	✓	✓	✓
20/12/21	Round 10	✓	✓	x*
05/01/22	Round 11	✓	✓	✓
19/01/22	Round 12	✓	✓	✓
31/01/22	Round 13	✓	✓	✓
17/02/22	Round 14	✓	✓	✓
Post Piling				
31/03/22	Round 15	✓	✓	✓
26/05/22	Round 16	✓	✓	✓
29/06/22	Round 17	✓	✓	✓

Note To Table:

*BH103 ran dry during monitoring on round 10 so no sample was taken during this visit.

It should be noted that no monitoring visits were completed in April due to illnesses within the monitoring team.

During the baseline monitoring visit, the samples were obtained using a bailer. The subsequent visits were completed using low flow methods, which better represent the existing environment, as the sample is considered to be undisturbed. During each monitoring visit, the groundwater levels were recorded using an oil/water interface probe to check for the presence of Non-Aqueous Phase Liquids (NAPL). In addition, during monitoring, visual or olfactory evidence of contamination was recorded.

The groundwater samples were submitted for chemical analysis in line with the contaminants of concern highlighted in the original Phase 2 Ground Investigation and DQRA (both previously prepared by Paragon and submitted to the Local Authority as part of the Planning application). The testing suite included: pH, Ammoniacal Nitrogen, Phenols, Heavy Metals, Polyaromatic Hydrocarbons (PAH), and Total Petroleum Hydrocarbons (TPH). In addition, water quality parameters (i.e. electrical conductivity, temperature, pH and dissolved oxygen) were recorded in the field.

Results

The results of the groundwater monitoring, field parameters and the groundwater risk assessment are presented below. The field records obtained during sampling are summarised in Table 3 and presented in Appendix 3. These include records of water quality, depth to water, and visual or olfactory evidence of contamination. These parameters have been collected as they are useful indicators of water quality and can aid interpretation for whether degradation is likely to be occurring.

Table 3. Field Parameter Summary

Parameter	Recorded Result								
	BH1			BH2			BH3		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
Depth to Water mbgl [mAOD]	1.48 [28.04]	2.29 [28.85]	1.78 [28.55]	2.24 [25.75]	3.75 [27.26]	2.77 [26.73]	3.40 [26.81]	4.35 [27.76]	3.73 [27.43]
Electrical Conductivity (mS/cm)	9529.61	65606.19	30905.37	1012.94	5145.95	2187.88	2414.50	9504.40	3768.80
Temperature (°C)	6.06	17.78	13.06	6.74	17.12	12.74	4.40	17.16	12.79
pH	6.43	7.44	7.01	6.29	7.80	6.93	6.67	8.00	7.20
Dissolved Oxygen (%)	2.66	10.67	6.56	1.94	15.53	6.78	2.63	50.04	11.08
Visual or Olfactory Signs of Contamination	No oils or sheens were noted. A weak hydrocarbon odour was noted on round 16.			No oils or sheens were noted. A hydrocarbon odour was noted on rounds 2, 4, 5, 7, 8, 10, 12, 13, 14, and 16. A weak hydrocarbon odour was noted on round 6.			No oils or sheens were noted. A hydrocarbon odour was noted on rounds 6, 7 and 8. A weak hydrocarbon odour was noted on rounds 4 and 14.		

The preliminary risk assessment has been completed by comparing the results of the chemical analysis with the SSAC. These have been selected as they are protective of the River Crane, which is considered to be the principal receptor. The results of the key contaminants of concern, as specified in the DQRA, are presented in Table 4, 5 and 6 for boreholes 1, 2 and 3 respectively. The full risk assessment and laboratory data certificates are presented in Appendix 4.

Table 4. Results of the Chemical Analysis Compared to the SSACs in BH1

Contaminant	DQRA SSAC (µg/l)	Baseline Visit Results (µg/l)	Max Result Rounds 1 – 17 (µg/l)	Round 17 Results (µg/l)	Exceedances
Ammoniacal Nitrogen	28.6	4,200	5,000	310	All samples
Naphthalene	16,310	0.96	5.12	< 0.01	None
Anthracene	3.81	0.59	< 0.01	< 0.01	None
Fluoranthene	4.32	2.23	< 0.01	< 0.01	None
Benzo(a)pyrene	0.01*	1.61	< 0.01	< 0.01	Baseline
Phenol	7 x 10 ²⁹	<10	120	< 3.5	None
Benzene	7.1	<1.0	< 1.0	< 1.0	None
Total Petroleum Hydrocarbons (Aliphatic/Aromatic C5-35)	18,000*	10	< 10	< 10	None

Note to table:

SSACs as calculated in the DQRA (2020).

*Where no corresponding SSAC is available the maximum concentration recorded in the 2020 DQRA data has been used.

Table 5. Results of the Chemical Analysis Compared to the SSACs in BH2

Contaminant	DQRA SSAC (µg/l)	Baseline Visit Results (µg/l)	Max Result Rounds 1 – 17 (µg/l)	Round 17 Results (µg/l)	Exceedances
Ammoniacal Nitrogen	28.6	7,200	6,400	3,600	All samples
Naphthalene	16,310	787	356	< 0.01	None
Anthracene	3.81	9.97	4.5	0.61	Baseline and Round 11
Fluoranthene	4.32	14.3	10.3	0.87	Baseline, Round 3, Round 4, Round 5, Round 7 and Round 11
Benzo(a)pyrene	0.01*	< 0.01	0.3	< 0.01	Round 7 and Round 11
Phenol	7 x 10 ²⁹	2,700	7,800	2,100	None
Benzene	7.1	65.4	56	9.3	Baseline, Round 1, Round 2, Round 3, Round 4, Round 5, Round 6, Round 8, Round 9, Round 10, Round 11 and Round 17
Total Petroleum Hydrocarbons (Aliphatic/Aromatic C5-35)	18,000*	1,900	6,500	1,700	None

Note to table:

SSACs as calculated in the DQRA (2020).

*Where no corresponding SSAC is available the maximum concentration recorded in the 2020 DQRA data has been used.

Table 6. Results of the Chemical Analysis Compared to the SSACs in BH3

Contaminant	DQRA SSAC (µg/l)	Baseline Visit Results (µg/l)	Max Result Rounds 1 – 17 (µg/l)	Round 17 Results (µg/l)	Exceedances
Ammoniacal Nitrogen	28.6	14,000	9,500	8,200	All samples
Naphthalene	16,310	N/A	4.99	0.93	None
Anthracene	3.81	N/A	127	11.6	Round 1, Round 2, Round 3, Round 4, Round 5, Round 6, Round 7, Round 8, Round 9, Round 15 and Round 17
Fluoranthene	4.32	N/A	129	29.2	Round 1, Round 2, Round 3, Round 4, Round 5, Round 6, Round 7, Round 8, Round 9, Round 13, Round 15 and Round 17
Benzo(a)pyrene	0.01*	N/A	12.8	1.56	Round 1, Round 2, Round 3, Round 4, Round 5, Round 6, Round 7, Round 8, Round 9, Round 13, Round 15 and Round 17
Phenol	7 x 10 ²⁹	39	< 3.5	< 3.5	None
Benzene	7.1	< 1.0	< 1.0	< 1.0	None
Total Petroleum Hydrocarbons (Aliphatic/Aromatic C5-35)	18,000*	< 10	2,500	480	None

Note to table:

SSACs as calculated in the DQRA (2020).

*Where no corresponding SSAC is available the maximum concentration recorded in the 2020 DQRA data has been used.

Insufficient sample to completed baseline analysis on PAHs.

Sample ran dry during visit 10.

Groundwater Levels

The previous ground investigation completed by Paragon reported the groundwater flow direction to be towards the River Crane.

Groundwater levels were recorded from each borehole during the monitoring rounds. The groundwater levels were found to be consistent, and each borehole followed a similar trend throughout the monitoring period. The groundwater levels within BH101 ranged between 1.48mbgl and 2.29mbgl (28.04mAOD and 28.85mAOD). In addition, the groundwater levels in BH102 ranged between 2.24mbgl and 3.75mbgl (25.75mAOD and 27.26mAOD) and the groundwater levels in BH103 ranged between 3.40mbgl and 4.35mbgl (26.81mAOD and 27.76mAOD).



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The groundwater levels for each borehole showed a seasonal trend, with the highest groundwater levels recorded in winter months, and the lowest in summer months. The most recent visits have shown that in all three boreholes, the groundwater levels are falling.

Discussion

Paragon has undertaken 1 baseline monitoring visit before piling started, 14 fortnightly monitoring visits during piling activities and 3 monthly monitoring visits post-piling. The monitoring period extends between 5 August 2021 and 29 June 2022. Whilst it was originally planned that there would be a break from piling over the Christmas break, the project team decided to continue piling to ensure they hit their February deadline. As such, Paragon completed additional fortnightly monitoring rounds. The piling works ceased in February 2022 and the monitoring regime was reduced to monthly visits.

During the most recent months, the ground beams have been cast and in order to complete the ground beams, various excavations were completed across the site. Some of these were excavated to circa 10.00mbgl. The project manager has now informed Paragon that the deep excavations finished in June 2022.

During the monitoring period, Paragon have recorded various field parameters (dissolved oxygen, pH, temperature and electrical conductivity) when collecting the water samples. Whilst no clear trends have been drawn from the data, no visible sheen or free product was noted throughout the duration of the monitoring period.

In addition, whilst Tables 4, 5 and 6 show exceedances of the SSAC for ammoniacal nitrogen, anthracene, fluoranthene, benzo(a)pyrene and benzene, concentrations were broadly similar or lower than those presented in the DQRA. In addition, the concentrations of TPH were below the SSAC throughout the monitoring period. Furthermore, when comparing the results from monitoring rounds 1-17 to the baseline monitoring results, the concentrations of key contaminants set out above have broadly decreased.

Based on the foregoing, it is unlikely that piling activities or groundworks have impacted the River Crane.

Further Works

It is understood that the Project Team intend on bringing the piling rig back to the site in autumn/winter 2022 to complete the piles for the visitor block in the southeast corner of the site, in the former Vodafone plot. Currently this area has been inaccessible as there is a telephone mast present, which is waiting to be relocated. It is understood that when it is relocated, the piles will be formed. At this stage, Paragon considers it prudent to carry out groundwater sampling of the monitoring well WS8 (shown on Figure 3, Appendix 1), which is currently beneath the mast. It is proposed that the frequency of monitoring will increase to fortnightly during piling.



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In addition, it is understood that future piling activities in the western part of the site and in plots neighbouring the site (the former Abellio Bus Garage and the former Addison Lee Depot) may be required. However, as the monitoring presented in this investigation has shown that the closest piles to the river on the main development site have had minimal impact on the groundwater quality, it is considered highly unlikely that piling activities further away from the river would have a significant impact. As such, groundwater monitoring is not proposed during the piling in these areas.

Summary

This report has presented the results of the groundwater monitoring undertaken during the piling phase of works. The data evaluation has shown the contaminant concentrations to be in the same magnitude as the concentrations identified within the DQRA and the baseline monitoring. Furthermore, the monthly monitoring has shown a broad decrease in concentrations of contaminants.

It is proposed that the groundwater monitoring should continue until the piling of the visitor block has been completed. In addition, it is considered that groundwater monitoring for the western half of the site and neighbouring plots is not required.

If any unforeseen contamination is uncovered during excavation and construction works on site by the ground workers, works should cease until inspection and potentially further sampling and analysis has been completed.

The results presented in this report are to be included in the remediation verification report and will need to be submitted to the regulators as part of the discharge of the outstanding planning condition.

Yours sincerely

Charlie Bruinvels
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Paragon, a Colliers Company
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Encs: Appendix 1 – Figures
Appendix 2 – Borehole Logs
Appendix 3 – Groundwater Monitoring Records
Appendix 4 – Groundwater Chemical Results
Appendix 5 – Extent of Survey and Limitations

CC: Charlie Knox – Paragon, a Colliers Company
Tim Cawood – Paragon, a Colliers Company



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**Appendix 1 –
Figures**

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Paragon Building Consultancy
65 Southwark Street
London
SE1 0HR
0207125 0112
www.paragonbc.co.uk

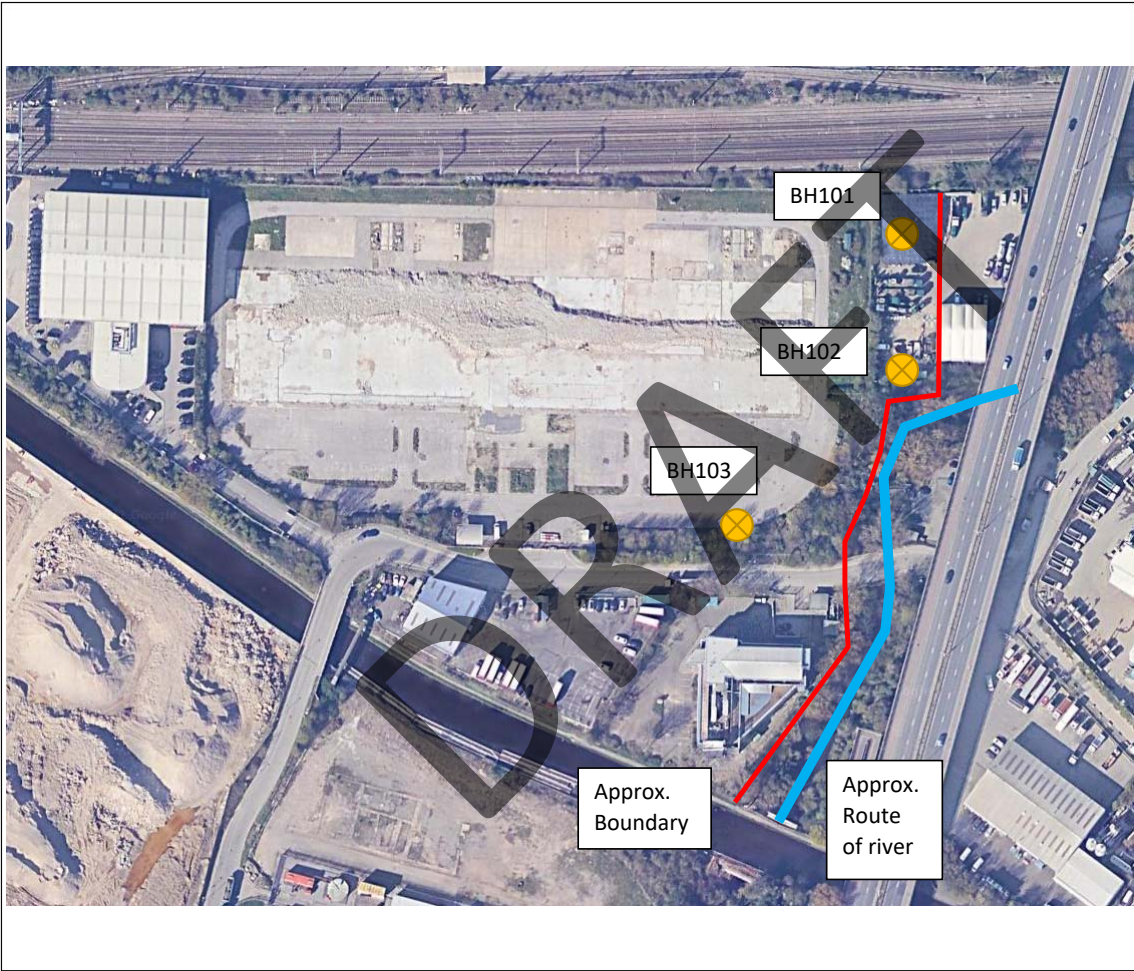
-  Site Location
-  Development Area

Project Number
211423

Project
Hayes Bulls Bridge

Figure 1
Site Location Plan

Date
02.02.2022



building & project consultants



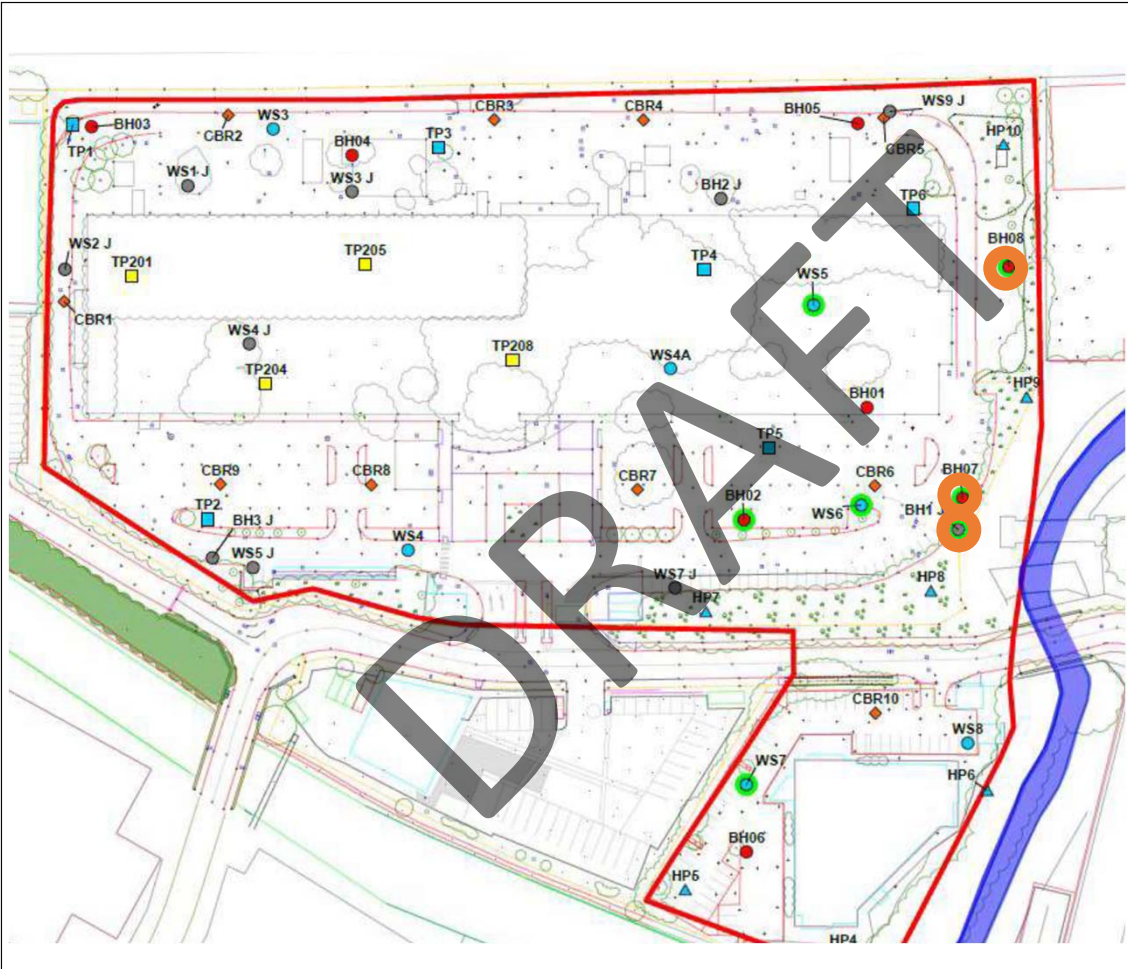
Paragon Building Consultancy
 65 Southwark Street
 London
 SE1 0HR
 0207125 0112
 www.paragonbc.co.uk

Project Number
 211423

Project
 Hayes Bulls Bridge

Figure 2
 Borehole Location Plan
 Date



02.02.2022



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 London
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-  DQRA borehole data used in assessment
-  Development Area

Project Number
 211423

Project
 Hayes Bulls Bridge

Figure 3
 DQRA BH locations

Date
 02.02.2022



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**Appendix 2 –
Borehole Logs**

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Percussion Drilling Log

Project Name: Union Park		Client: Ark Data Centres		Date: 05/08/2021	
Location: Union Park, Bulls Bridge, Hayes, UB3 4QQ		Contractor: Dynamic Sampling Ltd		Co-ords: E510568.13 N179377.87	
Project No. : 211423		Crew Name:		Drilling Equipment:	
Borehole Number BH101	Hole Type WS	Level 30.33m AoD	Logged By CB	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					1.50	28.83		MADE GROUND: Black and brown clayey sandy GRAVEL of fine to coarse, sub-angular brick, concrete, clinker and slate with rare ash.	1
								MADE GROUND: Black and brown slightly gravelly CLAY. Gravel is fine to coarse, sub-angular of mixed lithology. Suspected to be reworked.	2
					3.70	26.63		MADE GROUND: Black fibrous silty CLAY with roots.	3
					4.00	26.33		Brown sandy GRAVEL. Gravel is fine to coarse, sub-angular to angular flint.	4
					5.00	25.33		Blueish grey and brown, slightly silty CLAY.	5
					7.00	23.33		End of Borehole at 7.000m	7
									8
									9
									10

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Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





Percussion Drilling Log

Project Name: Union Park		Client: Ark Data Centres		Date: 05/08/2021	
Location: Union Park, Bulls Bridge, Hayes, UB3 4QQ		Contractor: Dynamic Sampling Ltd		Co-ords: E510569.51 N179317.81	
Project No. : 211423		Crew Name:		Drilling Equipment:	
Borehole Number BH102	Hole Type WS	Level 29.50m AoD	Logged By CB	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.50	29.00		MADE GROUND: Black and brown, gravelly sandy CLAY. Gravel is fine to coarse, sub-angular brick, flint and concrete.	1
								MADE GROUND: Brown and black slightly gravelly CLAY. Gravel is fine to coarse, sub-angular flint. Suspected to be reworked.	2
					3.40	26.10		MADE GROUND: Black slightly sandy gravelly CLAY with occasional peat layers. Gravel is fine to coarse, sub-angular to angular flint. <i>Strong hydrocarbon odour with slight sheen.</i>	3
					4.70	24.80			4
					5.00	24.50		Brown sandy GRAVEL. Gravel is fine to coarse, sub-angular to angular flint.	5
					6.00	23.50		Blueish grey and brown, slightly silty CLAY.	6
								End of Borehole at 6.000m	7
									8
									9
									10

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Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





Percussion Drilling Log

Project Name: Union Park		Client: Ark Data Centres		Date: 05/08/2021	
Location: Union Park, Bulls Bridge, Hayes, UB3 4QQ		Contractor: Dynamic Sampling Ltd		Co-ords: E510518.79 N179246.78	
Project No. : 211423		Crew Name:		Drilling Equipment:	
Borehole Number BH103	Hole Type WS	Level 31.16m AoD	Logged By CB	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							MADE GROND: Brown sandy GRAVEL. Gravel is fine to coarse, sub-angular concrete and brick.		1
									2
									3
									4
									5
					5.70	25.46			
					6.00	25.16		Slightly clayey sandy GRAVEL. Gravel is fine to coarse, sub-angular to angular flint. Blueish grey and brown, slightly silty CLAY.	6
					7.00	24.16		End of Borehole at 7.000m	7
									8
									9
									10

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Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





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**Appendix 3 –
Groundwater
Monitoring Records**

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 19.08.2021
WEATHER Overcast

SITE North Hyde Garden, Hayes
TIME On: 08:30 Off: 11:30
MONITORING PERSONNEL Jaime

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:30	3.82	6.79	6.79	65606.19	16.06	6.95	5.30	0.40	-63.49	3	None	Very high	No	Grey	very high	There is 2.21m of standpipe above the ground. Water level taken from the top of the threads.
BH102	10:00	4.49	7.09	7.09	2530.41	14.63	6.41	7.79	0.79	-46.38	4	Chemical	Moderate	No	Cloudy	Moderate	There is 1.85m of stand pipe above the ground. Water level taken from the top of the threads.
BH103	11:00	3.85	5.5	5.5	4321.93	17.16	6.81	8.38	0.80	-48.76	3	Organic	Very high	No	Light brown	Very high	There is 0.35m of standpipe above the ground.

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 31.08.2021
WEATHER Overcast

SITE North Hyde Garden Hayes
TIME On: 09:00 Off: 12:00
MONITORING PERSONNEL JJime

Monitoring Location	Time	DTL m	DTB m	End m	EC µS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:35	4.00	6.82	6.82	22904.80	15.28	7.00	4.98	0.46	-121.45	5	None	Very high	No	brown	very high	There is 2.21m of standpipe above the ground. Water level taken from the top of the threads.
BH102	10:02	4.70	7.09	7.09	1971.47	14.44	6.29	4.87	0.50	-157.37	4	hydrocarbons odo	low	No	grey	low	There is 1.85m of stand pipe above the ground. Water level taken from the top of the threads.
BH103	11:05	4.01	5.51	5.51	2634.90	15.43	6.67	5.10	0.50	-195.85	5	Chemical	Very high	No	Light brown	Very high	There is 0.35m of standpipe above the ground.

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**Groundwater Monitoring
Low Flow - Sampling Record Sheet**

CLIENT Paragon
DATE 14/09/2021
WEATHER Overcast

SITE North Hyde Garden, Hayes
TIME On: 09:00 Off: 11:30
MONITORING PERSONNEL None

Monitoring Location	Time	DTL m	DTB m	End m	EC µS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:00	4.07	6.82	6.82	18131.30	15.76	6.94	5.64	0.52	-112.84	3	None	moderate	No	light brown	moderate	There is 2.21m of standpipe above the ground. Water level taken from the top of the threads.
BH102	9:45	4.56	7.09	7.09	2720.47	15.28	6.52	5.75	0.57	-154.98	3	Chemical	moderate	No	cloudy	moderate	There is 1.85m of stand pipe above the ground. Water level taken from the top of the threads.
BH103	10:30	4.16	5.50	5.50	3199.44	15.81	6.81	4.67	0.46	-185.99	3	Chemical	high	No	Light brown	high	There is 0.35m of standpipe above the ground.

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Groundwater Monitoring

Low Flow - Sampling Record Sheet

CLIENT Paragon
 DATE 30/09/2021
 WEATHER Overcast, some light showers, 15degC

SITE North Hyde Gardens
 TIME On: 08:30 Off: 12:00
 MONITORING PERSONNEL Toby McCusker

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	30/09/2021 11:23	4.27	6.8	6.8	9529.61	363.16	7.21	10.19	1.00	137.72	3.5	Sulphurous	Fine and moderate volume	None	Cloudy	Moderate	Cloudy sample with fine sediment. Sulphurous odour. DTU/DTB taken from top of standpipe.
BH102	30/09/2021 10:56	4.47	7.09	7.09	2529.72	14.41	6.93	15.53	1.57	139.05	3	Hydrocarbon	Fine and moderate volume	None	Cloudy	Low to moderate	Cloudy sample and HC odour (no oil). Fine sediment in sample. DTU/DTB taken from top of BH standpipe.
BH103	30/09/2021 9:57	4.05	5.51	5.51	3628.49	13.99	7.06	14.62	1.49	131.62	3	Weak hydrocarbon	Fine and moderate volume	None	Cloudy	Moderate	Cloudy sample, initially mud in purge water. Weak HC odour (no oil). DTU/DTB taken from top of BH standpipe.

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 13/10/2021
WEATHER Overcast

SITE North Hyde Garden, Hayes
TIME On: 08:30 Off: 11:00
MONITORING PERSONNEL Jayne

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	13/10/2021 9:15	3.89	6.82	6.82	59017.75	14.08	7.09	5.86	0.48	-29.01	6	None	High	No	brown	high	re is 2.21m of standpipe above ground, water level taken from the top of the standpipe. Standpipe unscrewed on previous visits, hence dip discrepancies. Conductivity readings as record
BH102	13/10/2021 8:45	4.33	7.07	7.07	2225.48	13.33	6.44	5.80	0.61	-29.34	3	Hydrocarbons	moderate	No	cloudy	moderate	There is 1.85m of stand pipe above ground, water level taken from the top of the standpipe
BH103	13/10/2021 10:00	3.86	5.51	5.5	3533.16	14.89	6.88	5.46	0.55	-50.66	3	chemical	high	No	brown	high	There is 0.35m of standpipe above the ground.

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT: Paragon
DATE: 28/10/2021
WEATHER: Dry

SITE: North Hyde Garden House
TIME: 09:28 09:11:30
MONITORING PERSONNEL: John McCauley

Monitoring Location	Time	DTL #	DTB #	End #	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	28/10/2021 10:24	3.70	6.70	6.70	16963.05	14.83	7.18	9.87	0.94	-28.79	4	Weak sulphur	High, fine	No	Light brown	high	There is 2.21m of standpipe above ground.
BH102	28/10/2021 9:59	4.26	7.04	7.04	2911.10	14.32	7.01	9.82	0.99	-43.26	4	Weak hydrocarbon	Low, fine	No	Slightly cloudy	low to moderate	There is 1.85m of stand pipe above ground.
BH103	28/10/2021 10:58	3.75	5.50	5.50	5452.89	15.24	7.32	9.74	0.96	-34.06	3	Hydrocarbon	Moderate	No	cloudy brown	Moderate	There is 0.35m of standpipe above the ground.

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 10/11/2021
WEATHER Overcast

SITE North Hyde Garden Hayes
TIME On: 08:45 Off: 11:00
MONITORING PERSONNEL Jaime

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	9:45:00 AM	3.73	6.75	6.75	37356.81	13.81867	7.062987	5.11007	0.460895	-2.083263	4	None	High	No	light brown	High	There is 2.21m of standpipe above the ground, water level taking it from the top of the threats
BH102	9:15:00 AM	4.32	7.06	7.06	1971.21	13.4981	6.380533	5.135124	0.536623	-57.58711	3	Hydrocarbons	low	No	cloudy	low	There is 1.85m of stand pipe above the ground water level taking it from the top of the threats
BH103	10:30:00 AM	4.08	5.5	5.5	2985.088	14.45804	6.700215	5.14229	0.5243955	-67.88202	3	hydrocarbons odour	high	No	light brown	very high	There is 0.35m of standpipe above the ground.

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 23.11.2021
WEATHER Sunny

SITE North Hyde Garden Hayes
TIME On: 10:48 Off: 11:45
MONITORING PERSONNEL Toby MacCusker

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:48:09 AM	3.85	6.75	6.75	19994.95	525.3046	7.411667	9.204671	0.8954244	111.7736	5	Weak chemical	Moderate	No	Cloudy	Moderate	
BH102	10:13:53 AM	4.49	7.06	7.06	5145.951	12.48794	6.995506	11.15427	1.191133	111.7975	3	Hydrocarbons	Low	No	Cloudy	Low	
BH103	11:45:14 AM	4.41	5.5	5.5	9504.403	13.89272	7.415512	10.2664	1.028019	12.43174	3	Hydrocarbons odour	High	No	Cloudy grey	High	

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 07.12.2021
WEATHER Rainy

SITE North Hyde Garden Hayes
TIME On: 09:31 Off: 11:34
MONITORING PERSONNEL Chris Fox

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	11:34:00 AM	4.08	6.75	6.75	32261.63	11.46351	6.51209	3.345857	0.3345283	31.4078	4						
BH102	10:41:00 AM	5.15	6.96	6.96	1812.765	11.6925	6.873536	7.854104	0.8811553	-71.21709	3	Organic and clay	Low	No	Slight cloudy	Low to Medium	Muddy base, low to medium turbidity, no oil visible, odour organic and clay, sediments not visible, clear but slight cloudy visibility
BH103	9:46:00 AM	4.22	5.5	5.5	2414.487	9.098933	7.162433	50.03797	5.951775	-31.06502	2	Organic and clay	Medium	No	Cloudy and light grey	High	Cloudy light grey mud colour, high turbidity, no oil visible, fine sediments, odour of clay and organic matter

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 20.12.2021
WEATHER Overcast

SITE North Hyde, Garden Hayes
TIME On: 08:40 Off: 10:55
MONITORING PERSONNEL Chris Fox

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:55:00 AM	4.06	6.74	6.74	36237.42	12.05218	6.662113	2.658293	0.2555088	81.33552	5	Organic	Low	No	Dark grey	High	Organic odour, high turbidity, dark grey colour, no sediments visible, no oil visible
BH102	10:04:00 AM	5.09	7.05	7.05	1339.14	12.03595	7.055538	7.905138	0.8732467	-3.801376	3	Hydrocarbons	Low	No	Cloudy, light grey	Medium	Hydrocarbon odour, no oil visible, no sediments visible, cloudy light grey colour, medium turbidity
BH103	9:04:00 AM	4.07	5.5	5.5	2507.484	11.41388	7.15651	24.15129	2.695387	-0.5278854	3						Water ran dry during per pump low test. Unable to finish test accurately or collect water samples. Level 4.07m at start in 5.50m BH Depth. I believe local ground Piling and excavation, has lead to water seeping out, conn

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 05.01.2022
WEATHER Cloudy

SITE North Hyde Garden Hayes
TIME On: 08:47 Off: 11:13
MONITORING PERSONNEL Richard Ward

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:28:00 AM	3.69	6.64	6.64	38574.27	6.062561	6.657532	10.45356	1.111463	8.554938	4	Chemical	Low	No	Light brown	Moderate	Cloudy light brown, chemical odour, fine sediment, moderate turbidity, no oil visible
BH102	10:54:00 AM	4.09	7	7	2263.574	6.744049	6.949085	4.177615	0.5072693	-202.2142	4	Chemical	Low	No	Cloudy grey	Moderate	Cloudy grey, chemical odour, fine sediment, moderate turbidity, no oil visible
BH103	9:56:00 AM	3.81	5.49	5.49	3175.252	4.404449	7.202437	8.746366	1.12371	-187.4585	4	Odourless	Low	No	Cloudy	Low	Cloudy, odourless, fine sediment, low turbidity, no oil visible

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 19/01/2022
WEATHER Overcast

SITE North Hyde Garden Hayes
TIME On: 08:30 Off: 11:30
MONITORING PERSONNEL Jaime de la Torre

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:37:00 AM	3.72	6.71	6.71	37698.48	10.37793	7.066597	10.67249	1.040516	167.9017	5	None	High	No	light brown	High	There is 2.21m of standpipe above the ground, water level taking it from the top of the threats
BH102	10:08:00 AM	4.39	7.06	7.06	1012.942	9.837738	7.402896	8.84605	1.012365	173.9718	4	Hydrocarbons	Moderate/fine	No	cloudy	moderate	There is 1.85m of stand pipe above the ground water level taking it from the top of the threats
BH103	11:07:00 AM	3.85	5.51	5.51	3539.458	9.4263	7.80403	10.13931	1.161491	85.73549	3	none	moderate	No	light brown	moderate	There is 0.35m of standpipe above the ground.

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 31/01/2022
WEATHER Sunny

SITE North Hyde Garden Hayes
TIME On: 08:30 Off: 10:15:00
MONITORING PERSONNEL Jaime de la Torre

Monitoring Location	Time	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	9:55:00 AM	3.92	6.72	6.72	34459.77	11.39993	6.913275	5.785863	0.5519044	201.0171	3.5	None	High	No	light brown	High	There is 2.21m of standpipe above the ground, water level taking it from the top of the threads
BH102	9:44:00 AM	4.83	7.05	7.05	1372.057	9.692657	7.379906	5.688913	0.6504437	197.2667	3	Hydrocarbons	Moderate/fine	No	light brown	moderate	There is 1.85m of stand pipe above the ground water level taking it from the top of the threads
BH103	9:22:00 AM	3.84	5.51	5.51	3807.059	8.839264	7.592908	7.733596	0.8932291	206.6914	2	sulphur	moderate	No	light brown	moderate	

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 17/09/2012
WEATHER Fair

SITE North Hyde Garden Hayes
TIME On: 09:15 Off: 11:30:00
MONITORING PERSONNEL Gaby McCooker and Ruben Wils

Monitoring Location	Time	DTL m	DTB m	End m	EC µS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:20:00 AM	4.3	6.53	6.53	31321.9	11.40439	7.205805	6.098828	0.5896111	161.9198	4	None	Fine/medium	No	Cloudy brown	High	
BH102	10:51:00 AM	4.22	6.97	6.97	1298.411	11.57056	7.141841	5.465999	0.5924406	67.3892	3	Hydrocarbons	Fine	No	Cloudy	Low/moderate	
BH103	11:11:00 AM	4.5	5.4	5.4	3404.859	10.89798	7.081172	9.060641	0.9908896	79.22668	1.5	Weak HC odour	Fine/low	No	Clear	Low	

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Groundwater Monitoring
Low Flow - Sampling Record Sheet

CLIENT Paragon
DATE 31/03/2022
WEATHER Overcast, Snow, Sunny intervals

SITE North Hyde Garden Hayes
TIME On: 08:00 Off: 13:30:00
MONITORING PERSONNEL Chris Fox

Monitoring Location	Time	DTL m	DTB m	End m	EC µS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	10:38:00 AM	3.96	5	5	32556.26	10.81094	7.416176	4.411184	0.4376704	242.4016	5.5	None	Fine	No	Cloudy grey	Low	
BH102	11:30:00 AM	4.65	7.05	7.05	1598.144	9.992397	7.882043	1.941262	0.2219855	174.481	5	Organic	Fine	No	Cloudy grey	Medium	
BH103	9:33:00 AM	4.01	5.5	5.5	3266.231	9.326498	8.09909	5.6267	0.6498844	225.2832	3	None	Fine	No	Cloudy grey	Medium	

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Groundwater Monitoring

Low Flow - Sampling Record Sheet

CLIENT Paragon
 DATE 26/05/2012
 WEATHER Overcast and dry

SITE North Hyde Garden, Hayes
 TIME Em: 13:15, Off: 16:00:00
 MONITORING PERSONNEL Tracy McCusker

Monitoring Location	Time	DTL m	DTB m	End m	EC µS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	3:42:00 PM	4.26	6.68	6.68	10184.72	14.65961	7.449223	8.588995	0.842108	155.9698	2.5	Weak Hydrocarbon	Fine and Low	No	Cloudy	Low to Moderate	
BH102	3:14:00 PM	5.06	7.02	7.02	1594.649	15.52481	7.588887	5.484805	0.5441818	147.6729	2.5	Hydrocarbon	Fine and Low	No	Clear	Low	
BH103	2:48:00 PM	4.25	5.5	5.5	3057.135	17.1315	7.845422	6.849775	0.6538409	147.4154	1.5	Sulphar	Fine and Low	No	Clear	Low	Stopped before stable due to significant drawdown and low recharge

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Groundwater Monitoring

Low Flow - Sampling Record Sheet

CLIENT: Paragon
 DATE: 29/05/2022
 WEATHER: Overcast

SITE: North Hyde Garden Hayes
 TIME: On: 11:15, Off: 15:45:00
 MONITORING PERSONNEL: Chris Fox

Monitoring Location	Time	DTL m	DTB m	End m	EC µS/cm	Temp C	pH	DO %	Dissolved Oxygen PPM	ORP mV	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH101	1:43:00 PM	4.5	5	5	22592.44	17.78359	6.439003	3.31734	0.2891808	43.7675	2	Organic	Fine	None	Clear	Low	
BH102	1:05:00 PM	5.6	7.05	7.05	1896.479	17.12308	6.683638	3.067782	0.2926535	-37.5452	2	Organic	Fine	None	Clear	Low	
BH103	12:26:00 PM	4.7	5.5	5.5	3637.38	16.02929	6.83567	2.632495	0.2554676	-15.3174	2.5	Organic sulphurous	Fine	None	Clear	Low to medium	

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**Appendix 4 –
Groundwater
Chemical Results**

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Lab Sample Number				Baseline	Baseline	Baseline	Round 1	Round 1	Round 1	Round 2	Round 2	Round 2
Sample Reference				1965314	1965315	1965316	1982497	1982498	1982498	1995325	1995324	1995326
Sample Number				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				05/08/2021	05/08/2021	05/08/2021	19/08/2021	19/08/2021	19/08/2021	31/08/2021	31/08/2021	31/08/2021
Time Taken				None Supplied	None Supplied	None Supplied	1045	1000	1130	1045	1000	1115
Analytical Parameter (Water Analysis)	Units	Limit of detection	Acceleration Status									
General Inorganics												
pH	pH Units	N/A	ISO 17025	6.7	7.1	7.4	6.5	7	7.4	7.4	6.7	7.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	7500	1900	2700	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	µg/l	< 10	ISO 17025	< 10	< 10	< 10	n/t	n/t	n/t	n/t	n/t	n/t
Complex Cyanide	µg/l	< 10	ISO 17025	< 10	< 10	< 10	n/t	n/t	n/t	n/t	n/t	n/t
Free Cyanide	µg/l	< 10	ISO 17025	< 10	< 10	< 10	n/t	n/t	n/t	n/t	n/t	n/t
Sulphate as SO4	µg/l	45	ISO 17025	381000	9230	26600	534	129	583	507	47.8	392
Total Sulphur	µg/l	15	NONE	n/t	n/t	n/t	180000	43000	190000	170000	16000	130000
Sulphide	µg/l	5	NONE	65	120	85	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	2300	72	340	n/t	n/t	n/t	n/t	n/t	n/t
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	4200	7200	14000	5000	4900	5800	4900	6400	9500
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	4400	7600	15000	n/t	n/t	n/t	n/t	n/t	n/t
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	9.97	67.4	48.7	3.71	37.3	17.1	I/S	I/S	I/S
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	10.5	78.5	54.3	n/t	n/t	n/t	n/t	n/t	n/t
Nitrate as N	mg/l	0.01	ISO 17025	0.13	0.47	0.45	3.38	0.77	0.48	0.44	0.82	0.56
Nitrate as NO3	mg/l	0.05	ISO 17025	0.57	2.08	1.97	15	3.41	2.12	1.96	3.61	2.48
Nitrite as N	µg/l	1	ISO 17025	4.2	25	14	1100	290	< 1.0	65	180	19
Nitrite as NO2	µg/l	5	ISO 17025	14	83	47	3500	940	< 5.0	210	590	61
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	4600	I/S	5000	1100	140	6500	630	200	750
BOD (Biochemical Oxygen Demand) (5 days)	mg/l	1	ISO 17025	120	62	47	2.5	6.2	7.9	1.2	6.5	< 1.0
Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenols by HPLC												
Catechol	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	4600	< 0.5
Trimethylphenol	µg/l	0.5	NONE	n/t	n/t	n/t	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Total Phenols												
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	2700	39	< 3.5	< 3.5	< 3.5	< 3.5	4600	< 3.5
Speciated PAHs												
Naphthalene	µg/l	0.01	ISO 17025	0.96	787**	I/S	< 0.01	< 0.01	2.73	< 0.01	50.1	3.49
Acenaphthylene	µg/l	0.01	ISO 17025	0.24	4.29	I/S	< 0.01	< 0.01	0.95	< 0.01	1.34	0.83
Acenaphthene	µg/l	0.01	ISO 17025	0.28	140	I/S	< 0.01	40.1	13.3	< 0.01	62.2	32.2
Fluorene	µg/l	0.01	ISO 17025	0.25	70	I/S	< 0.01	18.6	10.3	< 0.01	31.1	18.7
Phenanthrene	µg/l	0.01	ISO 17025	1.1	90.7	I/S	< 0.01	10.8	23.6	< 0.01	21.5	19.1
Anthracene	µg/l	0.01	ISO 17025	0.59	9.97	I/S	< 0.01	1.29	87.3	< 0.01	1.82	27.7
Fluoranthene	µg/l	0.01	ISO 17025	2.23	14.3	I/S	< 0.01	2.5	76	< 0.01	2.86	25.7
Pyrene	µg/l	0.01	ISO 17025	2.45	8.39	I/S	< 0.01	1.29	62.4	< 0.01	1.34	19.3
Benzo(a)anthracene	µg/l	0.01	ISO 17025	1.79	< 0.01	I/S	< 0.01	< 0.01	16.1	< 0.01	< 0.01	2.52
Chrysene	µg/l	0.01	ISO 17025	1.71	< 0.01	I/S	< 0.01	< 0.01	15.5	< 0.01	< 0.01	2.42
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	1.99	< 0.01	I/S	< 0.01	< 0.01	12.6	< 0.01	< 0.01	1.4
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.74	< 0.01	I/S	< 0.01	< 0.01	4.79	< 0.01	< 0.01	0.78
Benzo(a)pyrene	µg/l	0.01	ISO 17025	1.61	< 0.01	I/S	< 0.01	< 0.01	7.34	< 0.01	< 0.01	0.92
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	0.98	< 0.01	I/S	< 0.01	< 0.01	1.97	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	I/S	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	1.08	< 0.01	I/S	< 0.01	< 0.01	2.15	< 0.01	< 0.01	< 0.01
Total PAH												
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	18	1120	< 0.16	< 0.16	74.5	337	< 0.16	172	155
Heavy Metals / Metalloids												
Boron (dissolved)	µg/l	10	ISO 17025	410	270	830	n/t	n/t	n/t	n/t	n/t	n/t
Calcium (dissolved)	mg/l	0.012	ISO 17025	1100	260	260	1100	210	350	910	230	300
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	n/t	n/t	n/t	n/t	n/t	n/t
Copper (dissolved)	µg/l	0.7	ISO 17025	< 0.7	n/t	n/t	1.6*	n/t	n/t	n/t	n/t	n/t
Iron (dissolved)	mg/l	0.004	ISO 17025	270	0.63	0.098	0.11	0.45	0.014	0.098	0.71	0.12
Fe2+	mg/l	0.2	NONE	5.5	0.24	< 0.20	I/S	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	265	0.39	< 0.20	I/S	0.35	< 0.20	< 0.20	0.64	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	130	130	110	n/t	n/t	n/t	n/t	n/t	n/t
Mn (II)	mg/l	0.02	NONE	5.1	0.24	0.35	15.8	1.8	0.75	14.1	2.48	1.08
Mn (IV)	mg/l	0.02	NONE	13.1	2.52	0.17	0.77	0.48	0.44	0.28	0.33	0.07
Phosphorus (dissolved)	µg/l	20	ISO 17025	3130	32.7	38.3	n/t	n/t	n/t	n/t	n/t	n/t
Potassium (dissolved)	mg/l	0.025	ISO 17025	83	4.8	29	n/t	n/t	n/t	n/t	n/t	n/t
Sodium (dissolved)	mg/l	0.01	ISO 17025	1400	58	180	n/t	n/t	n/t	n/t	n/t	n/t
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.6	2	6.6	n/t	n/t	n/t	n/t	n/t	n/t
Arsenic (dissolved)	µg/l	0.15	ISO 17025	10.3	6.54	14.1	44.8	3.29	16.6	52.1	2.9	9.44
Barium (dissolved)	µg/l	0.06	ISO 17025	350	240	330	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	0.02	0.76	< 0.02	0.04	1.1	< 0.02	0.03
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.9	7.2	2.3	3.1	4.8	4.8	4.2	4.8	6.3
Cobalt (dissolved)	µg/l	0.2	ISO 17025	9.8	3.1	2.7	n/t	n/t	n/t	n/t	n/t	n/t
Copper (dissolved)	µg/l	0.5	ISO 17025	U/S*	7.5	7.9	U/S*	4.6	23	86	5	10
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	1.8	< 0.2	< 0.2	0.5	0.3	< 0.2	7.1
Manganese (dissolved)	µg/l	0.05	ISO 17025	7500	2900	380	n/t	n/t	n/t	n/t	n/t	n/t
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	2.3	5.4	16	n/t	n/t	n/t	n/t	n/t	n/t
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.3	6.4	11	15	4.6	19	28	3.9	46
Selenium (dissolved)	µg/l	0.6	ISO 17025	5.3	2	3.1	19	3.8	8.7	22	2.3	3.3
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium (dissolved)	µg/l	0.2	ISO 17025	2.9	1.4	6.7	n/t	n/t	n/t	n/t	n/t	n/t
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.2	6.2	6.3	8.5	5.7	6.4	9.4	10	7.6
Monoaromatics & Oxygenates												
Benzene	µg/l	1	ISO 17025	< 1.0	65.4	< 1.0	< 1.0	22.4	< 1.0	< 1.0	56	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	35.8	< 1.0	< 1.0	12.7	< 1.0	< 1.0	28.1	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	44	< 1.0	< 1.0	8.2	< 1.0	< 1.0	21.8	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	48.9	< 1.0	< 1.0	9.9	< 1.0	< 1.0	26.1	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	32.6	< 1.0	< 1.0	7.2	< 1.0	< 1.0	18.9	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	<					

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Date Sampled	Time Taken	Analytical Parameter (Water Analysis)	Units	Limit of detection	Acceleration Status	Baseline 1965314	Baseline 1965315	Baseline 1965316	Round 1 1982497	Round 1 1982496	Round 1 1982498	Round 2 1995325	Round 2 1995324	Round 2 1995326	
										BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103	
										None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
										None Supplied	None Supplied	None Supplied	6.00-6.00	6.00-6.00	5.00-5.00	6.00-6.00	6.00-6.00	5.00-5.00	
										05/08/2021	05/08/2021	05/08/2021	19/08/2021	19/08/2021	19/08/2021	31/08/2021	31/08/2021	31/08/2021	
										None Supplied	None Supplied	None Supplied	1045	1000	1130	1045	1000	1115	
Petroleum Hydrocarbons																			
Mineral Oil (C10 - C40)			10	NONE		< 10.0				< 10.0		I/S	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Diesel Range Organics (C10 - C25)			10	NONE		19				1600		I/S	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH1 (C10 - C40)			10	NONE		19				1600		I/S	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH2 (C6 - C10)			10	ISO 17025		< 10				270		< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH-CWG - Aliphatic >C5 - C6			1	ISO 17025		< 1.0				< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8			1	ISO 17025		< 1.0				< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10			1	ISO 17025		< 1.0				< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12			10	NONE		< 10				< 10		I/S	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16			10	NONE		< 10				< 10		I/S	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21			10	NONE		< 10				< 10		I/S	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35			10	NONE		< 10				< 10		I/S	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)			10	NONE		< 10				< 10		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7			1	ISO 17025		< 1.0				65		< 1.0	< 1.0	22	< 1.0	< 1.0	< 1.0	56	< 1.0
TPH-CWG - Aromatic >C7 - C8			1	ISO 17025		< 1.0				36		< 1.0	< 1.0	13	< 1.0	< 1.0	< 1.0	28	< 1.0
TPH-CWG - Aromatic >C8 - C10			1	ISO 17025		< 1.0				170		< 1.0	< 1.0	25	< 1.0	< 1.0	< 1.0	77	< 1.0
TPH-CWG - Aromatic >C10 - C12			10	NONE		< 10				790		< 10	< 10	< 10	< 10	< 10	< 10	130	20
TPH-CWG - Aromatic >C12 - C16			10	NONE		< 10				720		I/S	< 10	< 10	59	< 10	< 10	3900	180
TPH-CWG - Aromatic >C16 - C21			10	NONE		< 10				120		I/S	< 10	< 10	16	1100	< 10	1800	170
TPH-CWG - Aromatic >C21 - C35			10	NONE		< 10				10		I/S	< 10	< 10	< 10	470	< 10	< 10	10
TPH-CWG - Aromatic (C5 - C35)			10	NONE		< 10				1900		< 10	< 10	140	2000	< 10	5900	380	
VOCS																			
Chloromethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chloroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromomethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Vinyl Chloride			1	NONE		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trichlorofluoromethane			1	NONE		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1-Dichloroethene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,2-Trichloro-1,2,2-trifluoroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Cis-1,2-dichloroethene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
MTBE (Methyl Tertiary Butyl Ether)			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1-Dichloroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,2-Dichloropropane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trichloromethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,1-Trichloroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichloroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1-Dichloropropene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trans-1,2-dichloroethene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzene			1	ISO 17025		< 1.0				650		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Tetrachloromethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichloropropane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trichloroethene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibromomethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromodichloromethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Cis-1,3-dichloropropene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trans-1,3-dichloropropene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Toluene			1	ISO 17025		< 1.0				35.8		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,2-Trichloroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichloropropane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibromochloromethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Tetrachloroethene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dibromoethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chlorobenzene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,2,2-Tetrachloroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Ethylbenzene			1	ISO 17025		< 1.0				44		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
p & m-Xylene			1	ISO 17025		< 1.0				48.9		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Styrene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Tri bromomethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
o-Xylene			1	ISO 17025		< 1.0				32.6		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,2,2-Tetrachloroethane			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Isopropylbenzene			1	ISO 17025		< 1.0				3.9		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromobenzene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
n-Propylbenzene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorotoluene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorotoluene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3,5-Trimethylbenzene			1	ISO 17025		< 1.0				13.9		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
tert-Butylbenzene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trimethylbenzene			1	ISO 17025		< 1.0				26.7		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
sec-Butylbenzene			1	ISO 17025		< 1.0				< 1.0		< 1.0	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichlorobenzene			1	ISO 17025		< 1.0				< 1.0		< 1.0							

				Baseline	Baseline	Baseline	Round 1	Round 1	Round 1	Round 2	Round 2	Round 2
Lab Sample Number				1965314	1965315	1965316	1982497	1982496	1982498	1995325	1995324	1995326
Sample Reference				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	6.00-6.00	6.00-6.00	5.00-5.00	6.00-6.00	6.00-6.00	5.00-5.00
Date Sampled				05/08/2021	05/08/2021	05/08/2021	19/08/2021	19/08/2021	19/08/2021	31/08/2021	31/08/2021	31/08/2021
Time Taken				None Supplied	None Supplied	None Supplied	1045	1000	1130	1045	1000	1115
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status									
SVOCS												
Aniline	µg/l	0.05	NONE	< 0.05	9.5	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylphenol	µg/l	0.05	NONE	< 0.05	240	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	1600**	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Naphthalene	µg/l	0.01	ISO 17025	0.96	790**	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
1,2,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	54	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	µg/l	0.01	ISO 17025	0.24	4.3	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	µg/l	0.01	ISO 17025	0.28	140	I/S	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzofuran	µg/l	0.05	NONE	< 0.05	69	I/S	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	µg/l	0.01	ISO 17025	0.25	70	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	µg/l	0.01	ISO 17025	1.1	91	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	µg/l	0.01	ISO 17025	0.59	10	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Carbazole	µg/l	0.05	NONE	< 0.05	49	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Antraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	µg/l	0.01	ISO 17025	2.2	14	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	µg/l	0.01	ISO 17025	2.5	8.4	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	µg/l	0.01	ISO 17025	1.8	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	µg/l	0.01	ISO 17025	1.7	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	2	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.74	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	µg/l	0.01	ISO 17025	1.6	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	0.98	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	1.1	< 0.01	I/S	n/t	n/t	n/t	n/t	n/t	n/t
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	I/S	n/t	n/t	n/t	n/t	n/t	n/t
Gases												
Methane	mg/L	0.1	NONE	< 0.1	2.8	2.1	< 0.1	3.6	< 0.1	< 0.1	14	6.3

Lab Sample Number				Round 3	Round 3	Round 3	Round 4	Round 4	Round 4	Round 5	Round 5	Round 5
Sample Reference				2012776	2012775	2012777	2031962	2031963	2031964	2048648	2048647	2048649
Sample Number				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				6.00-6.00	6.00-6.00	5.00-5.00	4.50-4.5	6.50-6.50	5.00-5.00	None Supplied	None Supplied	None Supplied
Time Taken				14/09/2021	14/09/2021	14/09/2021	30/09/2021	30/09/2021	30/09/2021	13/10/2021	13/10/2021	13/10/2021
Analytical Parameter (Water Analysis)	Units	Limit of detection	Acceleration Status	1030	1000	1100	1123	1056	957	930	900	1015
General Inorganics												
pH	pH Units	N/A	ISO 17025	6.6	6.9	7.2	6.6	6.9	7	6.7	7.3	7.4
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Complex Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Free Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sulphate as SO4	µg/l	45	ISO 17025	353	24.5	364	408	224	500	580	188	531
Total Sulphur	µg/l	15	NONE	120000	8200	120000	140000	75000	170000	190000	63000	180000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	4700	6300	7900	3800	3100	8300	3700	3800	5000
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	5.1	57.3	41.1	6.83	37.2	48.3	4.73	35.5	32.1
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrate as N	mg/l	0.01	ISO 17025	0.58	0.55	0.43	0.39	4.65	0.18	3.07	1.09	0.58
Nitrate as NO3	mg/l	0.05	ISO 17025	2.58	2.43	1.91	1.71	20.6	0.78	13.6	4.81	2.59
Nitrite as N	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	180	56	16	410	16	2.7
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	610	190	54	1400	51	8.8
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	350	230	380	390	110	320	780	120	280
BOD (Biochemical Oxygen Demand) (5 days)	mg/l	1	ISO 17025	1.2	15	5.4	< 1.0	13	2.9	13	12	6.1
Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenols by HPLC												
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	6600	< 0.5	< 0.5	1700	< 0.5	< 0.5	2500	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Total Phenols												
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 3.5	6600	< 3.5	< 3.5	1700	< 3.5	< 3.5	2500	< 3.5
Speciated PAHs												
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	1.01	2.43	< 0.01	16.7	4.44	< 0.01	4.5	0.76
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	0.87	0.87	< 0.01	2.76	< 0.01	0.64	0.49	0.49
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	47.6	8.43	< 0.01	46.5	19.2	< 0.01	22.3	1.56
Fluorene	µg/l	0.01	ISO 17025	< 0.01	25.7	8.26	< 0.01	25.7	20.4	< 0.01	11	1.26
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	11.3	16.1	< 0.01	19	60.6	< 0.01	8.05	3.16
Anthracene	µg/l	0.01	ISO 17025	< 0.01	2.27	34.8	< 0.01	2.81	127	< 0.01	1.73	9.02
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	5.05	25.4	< 0.01	6.04	129	< 0.01	4.38	12.6
Pyrene	µg/l	0.01	ISO 17025	< 0.01	3.01	21.8	< 0.01	3.74	106	< 0.01	2.68	10.8
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	0.56	5.41	< 0.01	0.62	27.4	< 0.01	0.7	3.35
Chrysene	µg/l	0.01	ISO 17025	< 0.01	0.44	6.08	< 0.01	0.59	27.9	< 0.01	0.54	3.63
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.84	< 0.01	0.22	21.9	< 0.01	0.24	3.05
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.7	< 0.01	0.13	7.87	< 0.01	0.12	0.94
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.1	< 0.01	< 0.01	12.8	< 0.01	< 0.01	1.9
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.81	< 0.01	< 0.01	3.65	< 0.01	< 0.01	0.78
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.92	< 0.01	< 0.01	1.19	< 0.01	< 0.01	0.22
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.85	< 0.01	< 0.01	4.12	< 0.01	< 0.01	0.77
Total PAH												
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	96.8	139	< 0.16	122	576	< 0.16	56.9	54.4
Heavy Metals / Metalloids												
Boron (dissolved)	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Calcium (dissolved)	mg/l	0.012	ISO 17025	880	240	340	550	170	390	1300	190	360
Chromium (hexavalent)	µg/l	5	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Copper (dissolved)	µg/l	0.7	ISO 17025	< 0.7	n/t	n/t	< 0.7	n/t	n/t	< 0.7	n/t	n/t
Iron (dissolved)	mg/l	0.004	ISO 17025	0.31	0.13	0.41	2.1	1.3	2.1	2.7	0.59	0.29
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	1.8	< 0.20	0.2
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	0.3	2.11	1.29	2.01	0.95	0.57	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Mn (II)	mg/l	0.02	NONE	3.35	0.77	0.78	7.92	1.4	1.85	7.99	1.03	1.12
Mn (IV)	mg/l	0.02	NONE	7.48	2.59	1.58	0.42	0.45	0.86	5.69	1.28	1.28
Phosphorus (dissolved)	µg/l	20	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Potassium (dissolved)	mg/l	0.025	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sodium (dissolved)	mg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Antimony (dissolved)	µg/l	0.4	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Arsenic (dissolved)	µg/l	0.15	ISO 17025	34.3	14	22.1	16.3	2.55	17.3	79.7	2.15	12.2
Barium (dissolved)	µg/l	0.06	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium (dissolved)	µg/l	0.1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.22	< 0.02	< 0.02	0.75	< 0.02	< 0.02	4.4	< 0.02	0.03
Chromium (dissolved)	µg/l	0.2	ISO 17025	4.2	7.9	6.4	2.2	2.9	6.1	7.8	6.5	8.6
Cobalt (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Copper (dissolved)	µg/l	0.5	ISO 17025	n/t	1.3	3.4	n/t	7.8	5.2	n/t	6.2	6.6
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.2	< 0.2	0.2	1.1	< 0.2	< 0.2	0.3
Manganese (dissolved)	µg/l	0.05	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nickel (dissolved)	µg/l	0.5	ISO 17025	12	4.9	12	7.3	4.3	7.8	48	6.9	15
Selenium (dissolved)	µg/l	0.5	ISO 17025	11	2.6	3.5	32	8.5	5.2	29	4.8	8.3
Tin (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.8	8.6	2	3.4	4.4	2.8	20	11	7.1
Monoaromatics & Oxygenates												
Benzene	µg/l	1	ISO 17025	< 1.0	48.3	< 1.0	< 1.0	14.5	< 1.0	< 1.0	18.1	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	24.4	< 1.0	< 1.0	10.1	< 1.0	< 1.0	9.1	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	19.9	< 1.0	< 1.0	8.9	< 1.0	< 1.0	8.9	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	21.7	< 1.0	< 1.0	10.5	< 1.0	< 1.0	9.4	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	14.7	< 1.0	< 1.0	6.2	< 1.0	< 1.0	6.4	< 1.0</

Lab Sample Number				Round 3	Round 3	Round 3	Round 4	Round 4	Round 4	Round 5	Round 5	Round 5
Sample Reference				2012776	2012775	2012777	2031962	2031963	2031964	2048648	2048647	2048649
Sample Number				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				6.00-6.00	6.00-6.00	5.00-5.00	4.50-4.5	6.50-6.50	5.00-5.00	None Supplied	None Supplied	None Supplied
Time Taken				14/09/2021	14/09/2021	14/09/2021	30/09/2021	30/09/2021	30/09/2021	13/10/2021	13/10/2021	13/10/2021
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	1030	1000	1100	1123	1056	957	930	900	1015
SVOCs												
Aniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,4-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachloroethane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Isophorone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Nitrophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dimethylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Naphthalene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobutadiene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloro-3-methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,6-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,5-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylnaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chloronaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dimethylphthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,6-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzofuran	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Diethyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Nitroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Azobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Carbazole	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibutyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthraquinone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Butyl benzyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
3&4-Methylphenol	µg/l	0.1	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Gases												
Methane	mg/L	0.1	NONE	< 0.1	0.8	< 0.1	< 0.1*	2.3*	6.8*	< 0.1	3.6	1.9

				Round 6	Round 6	Round 6	Round 7	Round 7	Round 7	Round 8	Round 8	Round 8
Lab Sample Number				2065492	2065493	2065494	2080604	2080603	2080605	2093804	2093805	2093806
Sample Reference				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	BH101	BH102	BH103	None Supplied	None Supplied	None Supplied
Depth (m)				6.50-6.50	6.50-6.50	5.00-5.00	6.00-6.00	6.00-6.00	5.00-5.00	6.50-6.50	6.50-6.50	5.00-5.00
Date Sampled				28/10/2021	28/10/2021	28/10/2021	10/11/2021	10/11/2021	10/11/2021	23/11/2021	23/11/2021	23/11/2021
Time Taken				1015	1040	1110	None Supplied	None Supplied	None Supplied	1110	1030	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	accreditation Status									
SVOCS												
Aniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,4-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachloroethane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Isophorone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Nitrophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dimethylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Naphthalene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobutadiene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloro-3-methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,6-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,5-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylnaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chloronaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dimethylphthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,6-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzofuran	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Diethyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Nitroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Azobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Carbazole	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibutyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Antraquinone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Butyl benzyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
3&4-Methylphenol	µg/l	0.1	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Gases												
Methane	mg/L	0.1	NONE	<0.1*	1*	<0.1*	<0.1	6.7	2.6	<0.1	6.5	1.2

Lab Sample Number				Round 9	Round 9	Round 9	Round 10	Round 10	Round 10	Round 10	Round 11	Round 11	Round 11
Sample Reference				2110773	2110772	2110771	2124976	2124977			2131674	2131675	2131674
Sample Number				BH101	BH102	BH103	BH101	BH102	BH103		BH101	BH102	BH103
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				07/12/2021	07/12/2021	07/12/2021	20/12/2021	20/12/2021			05/01/2022	05/01/2022	05/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Acceleration Status										
General Inorganics													
pH	pH Units	N/A	ISO 17025	6.8	7.1	7.2	7.1	7.5	Dry		6.8	7	7.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Complex Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Free Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sulphate as SO4	µg/l	45	ISO 17025	340	72.5	330	381	68.4	Dry		476	51.1	765
Total Sulphur	µg/l	15	NONE	110000	24000	110000	130000	23000	Dry		160000	17000	260000
Sulphide	µg/l	5	NONE	< 5.0	U/S*	U/S*	< 5.0	< 5.0	Dry		< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	2600	3700	6300	1800	3600	Dry		950	3200	4700
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	3.3	35.9	28.1	8.01	28.8	Dry		3.54	44.3	25.4
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrate as N	mg/l	0.01	ISO 17025	0.45	0.89	0.17	2.72	0.35	Dry		6.97	0.11	0.14
Nitrate as NO3	mg/l	0.05	ISO 17025	2.01	3.96	0.77	12	1.56	Dry		30.9	0.47	0.63
Nitrite as NO2	µg/l	1	ISO 17025	250	2.4	< 1.0	360	16	Dry		240	12	< 1.0
Nitrite as NO	µg/l	5	ISO 17025	810	8	< 5.0	1200	54	Dry		780	38	< 5.0
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	400	130	130	850	120	Dry		740	190	84
BOD (Biochemical Oxygen Demand) (5 days)	mg/l	1	ISO 17025	3.9	20	5.3	3	6.7	Dry		2.8	31	3.5
Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	Dry		< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	Dry		< 1.0	< 1.0	< 1.0
Phenols by HPLC													
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Dry		< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Dry		< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Dry		< 0.5	4200	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	1100	< 0.5	< 0.5	< 0.5	Dry		< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Dry		< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Dry		< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	4000	< 0.5	< 0.5	< 0.5	Dry		< 0.5	3600	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Dry		< 0.5	< 0.5	< 0.5
Total Phenols													
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 3.5	5100	< 3.5	< 3.5	< 3.5	Dry		< 3.5	7800	< 3.5
Speciated PAHs													
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	3.79	1.62	< 0.01	< 0.01	Dry		< 0.01	356	1.38
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	0.59	< 0.01	< 0.01	< 0.01	Dry		< 0.01	1.66	0.24
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	24.6	10.6	< 0.01	35.1	Dry		< 0.01	42.2	5.61
Fluorene	µg/l	0.01	ISO 17025	< 0.01	12.7	6.37	< 0.01	18.9	Dry		< 0.01	22.1	2.84
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	9	5.63	< 0.01	7.62	Dry		< 0.01	23.8	1.73
Anthracene	µg/l	0.01	ISO 17025	< 0.01	1.54	26	< 0.01	1.4	Dry		< 0.01	4.5	1.77
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	2.41	18.2	< 0.01	2.68	Dry		< 0.01	10.3	1.13
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.41	14.6	< 0.01	1.32	Dry		< 0.01	6.6	0.81
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	2.62	< 0.01	< 0.01	< 0.01	Dry		< 0.01	1.13	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	3.17	< 0.01	< 0.01	< 0.01	Dry		< 0.01	0.81	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	1.71	< 0.01	< 0.01	< 0.01	Dry		< 0.01	0.44	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.62	< 0.01	< 0.01	< 0.01	Dry		< 0.01	0.12	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	0.94	< 0.01	< 0.01	< 0.01	Dry		< 0.01	0.3	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	Dry		< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	Dry		< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	Dry		< 0.01	< 0.01	< 0.01
Total PAH													
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	54.9	92.6	< 0.16	67	Dry		< 0.16	470	15.5
Heavy Metals / Metalloids													
Boron (dissolved)	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Calcium (dissolved)	mg/l	0.032	ISO 17025	950	170	360	780	140	Dry		690	180	420
Chromium (hexavalent)	µg/l	5	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Copper (dissolved)	µg/l	0.7	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		< 0.7	n/t	n/t
Iron (dissolved)	mg/l	0.004	ISO 17025	950	170	360	0.06	0.15	Dry		0.34	0.083	0.25
Fe2+	mg/l	0.2	NONE	950	170	360	< 0.20	< 0.20	Dry		< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	950	170	360	< 0.20	< 0.20	Dry		0.3	< 0.20	0.24
Magnesium (dissolved)	mg/l	0.005	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Mn (II)	mg/l	0.02	NONE	950	170	360	0.8	0.29	Dry		0.46	0.28	0.7
Mn (IV)	mg/l	0.02	NONE	950	170	360	7.18	1.2	Dry		5.32	2.03	1.38
Phosphorus (dissolved)	µg/l	20	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Potassium (dissolved)	mg/l	0.025	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Sodium (dissolved)	mg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Antimony (dissolved)	µg/l	0.4	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Arsenic (dissolved)	µg/l	0.15	ISO 17025	45.3	2.35	2.51	39.7	3.61	Dry		29.2	2.92	4.46
Barium (dissolved)	µg/l	0.06	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Beryllium (dissolved)	µg/l	0.1	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.97	< 0.02	< 0.02	1.7	< 0.02	Dry		1.6	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	7.5	5.3	6.3	4	3.8	Dry		3.4	4.7	3.6
Cobalt (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Copper (dissolved)	µg/l	0.5	ISO 17025	160	4.4	3	-	5.7	Dry		n/t	5	5.7
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3	< 0.2	0.4	< 0.2	< 0.2	Dry		0.5	< 0.2	0.7
Manganese (dissolved)	µg/l	0.05	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.06	< 0.05	< 0.05	< 0.05	< 0.05	Dry		< 0.05	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Nickel (dissolved)	µg/l	0.5	ISO 17025	18	7.4	9.6	46	7.2	Dry		19	5.5	7.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	14	2.5	2.1	13	1.8	Dry		16	1.4	2.3
Tin (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Vanadium (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	Dry		n/t	n/t	n/t
Zinc (dissolved)	µg/l	0.5	ISO 17025	18	9.5	13	11	11	Dry		7.7	2.9	4.1
Monoaromatics & Oxygenates													
Benzene	µg/l	1	ISO 17025	< 1.0	35.4	< 1.0	< 1.0	17.5	Dry		< 1.0	28.8	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	15.3	< 1.0	< 1.0	12.9	Dry		< 1.0	14.6	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	11.8	< 1.0	< 1.0	13.3	Dry		< 1.0	17.1	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	11.9	< 1.0	< 1.0	15.8	Dry		< 1.0	18.1	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	8.								

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Date Sampled	Time Taken	Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	Round 9	Round 9	Round 9	Round 10	Round 10	Round 10	Round 11	Round 11	Round 11
										2110773	2110772	2110771	2124976	2124977	BH103	2131674	2131675	2131676
										BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
										None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
										07/12/2021	07/12/2021	07/12/2021	20/12/2021	20/12/2021		05/01/2022	05/01/2022	05/01/2022
										None Supplied	None Supplied	None Supplied	None Supplied	None Supplied		None Supplied	None Supplied	None Supplied
Petroleum Hydrocarbons																		
Mineral Oil (C10 - C40)	µg/l	10	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	Dry	n/t	n/t	n/t
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	Dry	n/t	n/t	n/t
TPH1 (C10 - C40)	µg/l	10	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	Dry	n/t	n/t	n/t
TPH2 (C6 - C10)	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	Dry	n/t	n/t	n/t
TPH-CWG - Aliphatic >C6 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	Dry	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	Dry	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	Dry	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Dry	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Dry	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Dry	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Dry	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Dry	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	35	< 1.0	< 1.0	18	< 1.0	29	< 1.0	< 1.0	13	< 1.0	Dry	< 1.0	15	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	15	< 1.0	< 1.0	13	< 1.0	15	< 1.0	< 1.0	44	< 1.0	Dry	< 1.0	56	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	36	< 1.0	< 1.0	44	< 1.0	56	< 1.0	< 1.0	44	< 1.0	Dry	< 1.0	56	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	37	< 10	< 10	44	< 10	360	< 10	< 10	44	< 10	Dry	< 10	360	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	37	< 10	< 10	1900	< 10	1000	< 10	< 10	1900	< 10	Dry	< 10	380	85
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	16	< 10	< 10	1400	< 10	380	< 10	< 10	1400	< 10	Dry	< 10	380	40
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	10	< 10	< 10	300	< 10	300	< 10	< 10	300	< 10	Dry	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	140	< 10	< 10	94	< 10	3600	< 10	< 10	3600	< 10	Dry	< 10	1900	130
VOCS																		
Chloromethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromomethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Vinyl Chloride	µg/l	1	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trichlorofluoromethane	µg/l	1	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1-Dichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Cis-1,2-dichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1-Dichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,2-Dichloropropane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trichloromethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,1-Trichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1-Dichloropropene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trans-1,2-dichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Tetrachloromethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichloropropane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibromomethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromodichloromethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Toluene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,2-Trichloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichloropropane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,3-Trichloropropane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibromochloromethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Tetrachloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dibromoethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chlorobenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
p & m-Xylene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Styrene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Tribromomethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
o-Xylene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Isopropylbenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromobenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
n-Propylbenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorotoluene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorotoluene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
tert-Butylbenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
sec-Butylbenzene	µg/l																	

Lab Sample Number				Round 9	Round 9	Round 9	Round 10	Round 10	Round 10	Round 11	Round 11	Round 11
Sample Reference				2110773	2110772	2110771	2124976	2124977		2131674	2131675	2131676
Sample Number				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied		None Supplied	None Supplied	None Supplied
Date Sampled				07/12/2021	07/12/2021	07/12/2021	20/12/2021	20/12/2021		05/01/2022	05/01/2022	05/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied		None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Acceleration Status									
SVOCS												
Aniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,4-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachloroethane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Isophorone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Nitrophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dimethylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Naphthalene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobutadiene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloro-3-methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,6-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,5-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylnaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chloronaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dimethylphthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,6-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzofuran	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Diethyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Nitroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Azobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Carbazole	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibutyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthraquinone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Butyl benzyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
3&4-Methylphenol	µg/l	0.1	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Gases												
Methane	mg/L	0.1	NONE	< 0.1	5.1	7.3	< 0.1	4.3	Dry	< 0.1	3.5	1.9

				Round 12	Round 12	Round 12	Round 13	Round 13	Round 13	Round 14	Round 14	Round 14
Lab Sample Number				2144739	2144738	2144740	2159894	2159893	2159895	2180164	2180165	2180166
Sample Reference				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	BH101	BH102	BH103	None Supplied	None Supplied	None Supplied
Depth (m)				6.00-6.00	6.00-6.00	5.00-5.00	6.00-6.00	6.00-6.00	5.00-5.00	6.5	6.3	5
Date Sampled				19/01/2022	19/01/2022	19/01/2022	31/01/2022	31/01/2022	31/01/2022	17/02/2022	17/02/2022	17/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	1013	1050	1113
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status									
SVOCs												
Aniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,4-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachloroethane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Isophorone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Nitrophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dimethylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Naphthalene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobutadiene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloro-3-methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,6-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,5-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylnaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chloronaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dimethylphthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,6-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzofuran	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Diethyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Nitroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Azobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Carbazole	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibutyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Antraquinone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Butyl benzyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
3&4-Methylphenol	µg/l	0.1	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Gases												
Methane	mg/L	0.1	NONE	< 0.1	0.6	1.2	< 0.1	1.6	2.9	< 0.1	0.9	1.8

Lab Sample Number				Round 15	Round 15	Round 15	Round 16	Round 16	Round 16	Round 17	Round 17	Round 17
Sample Reference				2226446	2226447	2226448	2294582	2294583	2294584	2335358	2335359	2335360
Sample Number				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				31/03/2022	31/03/2022	31/03/2022	26/05/2022	26/05/2022	26/05/2022	29/06/2022	29/06/2022	29/06/2022
Time Taken				None Supplied	None Supplied	None Supplied	1540	1510	1440	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Unit of detection	Acceleration Status									
General Inorganics												
pH	pH Units	N/A	ISO 17025	6.8	7	7.2	6.8	7.3	7.2	6.9	7	7.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Complex Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Free Cyanide	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sulphate as SO4	µg/l	45	ISO 17025	610	278	848	298	118	636	515	115	423
Total Sulphur	µg/l	15	NONE	200000	93000	280000	99000	39000	210000	170000	38000	140000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	290	2700	5300	220	3400	6200	310	3600	8200
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	3.37	17.9	27.9	6.61	20.2	35.8	4.99	19.9	37.1
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrate as N	mg/l	0.01	ISO 17025	6.12	0.15	0.15	1.71	0.24	0.35	2.52	0.33	0.69
Nitrate as NO3	mg/l	0.05	ISO 17025	27.1	0.68	0.68	7.57	1.04	1.57	11.2	1.45	3.06
Nitrite as N	µg/l	1	ISO 17025	210	< 1.0	6.2	36	< 1.0	< 1.0	39	7.2	11
Nitrite as NO2	µg/l	5	ISO 17025	680	< 5.0	20	120	< 5.0	< 5.0	130	24	36
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	330	66	180	94	68	120	120	78	130
BOD (Biochemical Oxygen Demand) (5 days)	mg/l	1	ISO 17025	3.2	6.4	4.6	< 1.0	5.9	18	1.1	6.6	6.2
Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenols by HPLC												
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	120	960	< 0.5	< 0.5	920	< 0.5	< 0.5	2100	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Total Phenols												
Total Phenols (monohydric)	µg/l	10	ISO 17025	120	960	< 3.5	< 3.5	920	< 3.5	< 3.5	2100	< 3.5
Speciated PAHs												
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.98	< 0.01	1.76	< 0.01	< 0.01	< 0.01	0.93
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	0.78	1.51	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.77
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	15.6	3.23	< 0.01	6.84	13.7	< 0.01	13.1	2.33
Fluorene	µg/l	0.01	ISO 17025	< 0.01	6.88	3.67	< 0.01	2.15	6.39	< 0.01	6.43	1.72
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	2.82	10.3	< 0.01	< 0.01	3.91	< 0.01	3.95	4.12
Anthracene	µg/l	0.01	ISO 17025	< 0.01	0.64	30.6	< 0.01	1.47	0.68	< 0.01	0.61	11.6
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	2.02	55.6	< 0.01	1.44	1.27	< 0.01	0.87	29.2
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.17	47	< 0.01	0.96	0.76	< 0.01	0.43	24.4
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	11.9	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	5.46
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	10.9	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	5.6
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	8.57	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	3.05
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.78	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	1.11
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	4.72	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	1.56
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.17	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.42	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH												
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	30.2	195	< 0.16	14.6	26.7	< 0.16	25.4	91.8
Heavy Metals / Metalloids												
Boron (dissolved)	µg/l	10	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Calcium (dissolved)	mg/l	0.002	ISO 17025	750	190	440	200	180	410	440	250	390
Chromium (hexavalent)	µg/l	5	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Copper (dissolved)	µg/l	0.7	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Iron (dissolved)	mg/l	0.004	ISO 17025	0.16	0.03	0.081	0.26	2.4	2.8	0.1	0.14	0.23
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Mn (II)	mg/l	0.02	NONE	0.33	0.3	0.29	1.47	1.87	1.45	1.8	2.46	1.24
Mn (IV)	mg/l	0.02	NONE	4.56	1.14	1.39	0.36	0.11	0.62	1.48	0.26	1.31
Phosphorus (dissolved)	µg/l	20	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Potassium (dissolved)	mg/l	0.025	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Sodium (dissolved)	mg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Antimony (dissolved)	µg/l	0.4	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.63	1.68	2.03	0.4	2.01	4.35	0.64	2.91	5.27
Barium (dissolved)	µg/l	0.06	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium (dissolved)	µg/l	0.1	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium (dissolved)	µg/l	0.02	ISO 17025	1.7	0.04	< 0.02	0.29	< 0.02	< 0.02	0.78	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.3	< 0.2	0.3	< 0.2
Cobalt (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Copper (dissolved)	µg/l	0.5	ISO 17025	5	3.7	3.6	4.7	1.9	0.6	5	1.9	1.4
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3	< 0.2	0.2	< 0.2	< 0.2	< 0.2	0.4	< 0.2	0.3
Manganese (dissolved)	µg/l	0.05	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nickel (dissolved)	µg/l	0.5	ISO 17025	18	7.3	15	7.4	2.6	3.7	6.9	1.9	3.2
Selenium (dissolved)	µg/l	0.6	ISO 17025	18	1.3	2.3	6.1	1.4	2.6	10	1.6	2.9
Tin (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium (dissolved)	µg/l	0.2	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Zinc (dissolved)	µg/l	0.5	ISO 17025	9.5	1.9	14	4.7	2.1	7.8	8.2	2.7	5.9
Monoaromatics & Oxygenates												
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.3	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.7	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.5	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	7.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	5.9	<						

				Round 15	Round 15	Round 15	Round 16	Round 16	Round 16	Round 17	Round 17	Round 17
Lab Sample Number				2226446	2226447	2226448	2294582	2294583	2294584	2335358	2335359	2335360
Sample Reference				BH101	BH102	BH103	BH101	BH102	BH103	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	6.50-6.50	6.50-6.50	5.00-5.00	None Supplied	None Supplied	None Supplied
Date Sampled				31/03/2022	31/03/2022	31/03/2022	26/05/2022	26/05/2022	26/05/2022	29/06/2022	29/06/2022	29/06/2022
Time Taken				None Supplied	None Supplied	None Supplied	1540	1510	1440	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status									
SVOCS												
Aniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,3-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,4-Dichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachloroethane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Nitrobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Isophorone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Nitrophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dimethylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Naphthalene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobutadiene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chloro-3-methylphenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,6-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4,5-Trichlorophenol	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Methylnaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2-Chloronaphthalene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dimethylphthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,6-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
2,4-Dinitrotoluene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzofuran	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Diethyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
4-Nitroaniline	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Azobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Bromophenyl phenyl ether	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Hexachlorobenzene	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Carbazole	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibutyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Antraquinone	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Butyl benzyl phthalate	µg/l	0.05	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
3&4-Methylphenol	µg/l	0.1	NONE	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Gases												
Methane	mg/L	0.1	NONE	<0.1*	*	2.2*	<0.1	1.7	7.4	<0.1	3.9	7.5



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Analytical Report Number : 21-91615

Project / Site name: Hayes **Samples received on:** 06/08/2021
Your job number: 211423 **Samples instructed on/
Analysis started on:** 06/08/2021
Your order number: 211423 CB **Analysis completed by:** 18/08/2021
Report Issue Number: 1 **Report issued on:** 18/08/2021
Samples Analysed: 3 water samples

DRAFT

Signed:

Joanna Wawrzeczek
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 21-91615
Project / Site name: Hayes

Your Order No: 211423_CB

Lab Sample Number	1965314			1965315			1965316		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied		
Date Sampled	05/08/2021			05/08/2021			05/08/2021		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	N/A	ISO 17025	1965314	1965315	1965316
pH	pH Units	N/A	ISO 17025	6.7	7.1	7.4
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	7500	1900	2700
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10
Complex Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	381000	9230	26600
Sulphide	µg/l	5	NONE	65	120	85
Chloride	mg/l	0.15	ISO 17025	2300	72	340
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	4200	7200	14000
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	4400	7600	15000
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	9.97	67.4	48.7
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	10.5	78.5	54.3
Nitrate as N	mg/l	0.01	ISO 17025	0.13	0.47	0.45
Nitrate as NO3	mg/l	0.05	ISO 17025	0.57	2.08	1.97
Nitrite as N	µg/l	1	ISO 17025	4.2	25	14
Nitrite as NO2	µg/l	5	ISO 17025	14	83	47
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	4600	I/S	5000
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	120	62	47

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	2700	39
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Speciated PAHs

Parameter	Units	N/A	ISO 17025	1965314	1965315	1965316
Naphthalene	µg/l	0.01	ISO 17025	0.96	787**	I/S
Acenaphthylene	µg/l	0.01	ISO 17025	0.24	4.29	I/S
Acenaphthene	µg/l	0.01	ISO 17025	0.28	140	I/S
Fluorene	µg/l	0.01	ISO 17025	0.25	70.0	I/S
Phenanthrene	µg/l	0.01	ISO 17025	1.10	90.7	I/S
Anthracene	µg/l	0.01	ISO 17025	0.59	9.97	I/S
Fluoranthene	µg/l	0.01	ISO 17025	2.23	14.3	I/S
Pyrene	µg/l	0.01	ISO 17025	2.45	8.39	I/S
Benzo(a)anthracene	µg/l	0.01	ISO 17025	1.79	< 0.01	I/S
Chrysene	µg/l	0.01	ISO 17025	1.71	< 0.01	I/S
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	1.99	< 0.01	I/S
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.74	< 0.01	I/S
Benzo(a)pyrene	µg/l	0.01	ISO 17025	1.61	< 0.01	I/S
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	0.98	< 0.01	I/S
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	I/S
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	1.08	< 0.01	I/S

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	18.0	1120	< 0.16
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Analytical Report Number: 21-91615
Project / Site name: Hayes

Your Order No: 211423_CB

Lab Sample Number	1965314			1965315			1965316		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied		
Date Sampled	05/08/2021			05/08/2021			05/08/2021		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	410	270	830
Calcium (dissolved)	mg/l	0.012	ISO 17025	1100	260	260
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0
Copper (dissolved)	µg/l	0.7	ISO 17025	< 0.7*	-	-
Iron (dissolved)	mg/l	0.004	ISO 17025	270	0.63	0.098
Fe2+	mg/l	0.2	NONE	5.50	0.24	< 0.20
Fe3+	mg/l	0.2	NONE	265	0.39	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	130	130	110
Mn (II)	mg/l	0.02	NONE	5.10	0.24	0.35
Mn (IV)	mg/l	0.02	NONE	13.1	2.52	0.17
Phosphorus (dissolved)	µg/l	20	ISO 17025	3130	32.7	38.3
Potassium (dissolved)	mg/l	0.025	ISO 17025	33	4.8	29
Sodium (dissolved)	mg/l	0.01	ISO 17025	1400	58	180

Antimony (dissolved)	µg/l	0.4	ISO 17025	0.6	2.0	6.6
Arsenic (dissolved)	µg/l	0.15	ISO 17025	10.3	6.54	14.1
Barium (dissolved)	µg/l	0.06	ISO 17025	350	240	330
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.9	7.2	2.3
Cobalt (dissolved)	µg/l	0.2	ISO 17025	9.8	3.1	2.7
Copper (dissolved)	µg/l	0.5	ISO 17025	U/S*	7.5	7.9
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	1.8
Manganese (dissolved)	µg/l	0.05	ISO 17025	7500	2900	380
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	2.3	5.4	16
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.3	6.4	11
Selenium (dissolved)	µg/l	0.6	ISO 17025	5.3	2.0	3.1
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	2.9	1.4	6.7
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.2	6.2	6.3

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	65.4	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	35.8	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	44.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	48.9	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	32.6	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0



Analytical Report Number: 21-91615
Project / Site name: Hayes

Your Order No: 211423_CB

Lab Sample Number				1965314	1965315	1965316
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				05/08/2021	05/08/2021	05/08/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Petroleum Hydrocarbons

Mineral Oil (C10 - C40)	µg/l	10	NONE	< 10.0	< 10.0	I/S
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	19	1600	I/S

TPH1 (C10 - C40)	µg/l	10	NONE	19	1600	I/S
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TPH2 (C6 - C10)	µg/l	10	ISO 17025	< 10	270	< 10
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TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	I/S
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	I/S
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	I/S
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	I/S
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	65	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	36	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	170	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	790	I/S
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	720	I/S
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	120	I/S
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	10	< 10	I/S
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	10	1900	< 10

VOCs

Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	65.4	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	35.8	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0



Analytical Report Number: 21-91615
Project / Site name: Hayes

Your Order No: 211423_CB

Lab Sample Number				1965314	1965315	1965316
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				05/08/2021	05/08/2021	05/08/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	44.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	48.9	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	32.6	< 1.0
1,1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	3.9	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	13.9	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	26.7	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

SVOCs

Aniline	µg/l	0.05	NONE	< 0.05	9.5	I/S
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2-Methylphenol	µg/l	0.05	NONE	< 0.05	240	I/S
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	1600**	I/S
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Naphthalene	µg/l	0.01	ISO 17025	0.96	790**	I/S
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S



Analytical Report Number: 21-91615

Project / Site name: Hayes

Your Order No: 211423_CB

Lab Sample Number				1965314	1965315	1965316
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				05/08/2021	05/08/2021	05/08/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	54	I/S
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Acenaphthylene	µg/l	0.01	ISO 17025	0.24	4.3	I/S
Acenaphthene	µg/l	0.01	ISO 17025	0.28	140	I/S
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Dibenzofuran	µg/l	0.05	NONE	< 0.05	69	I/S
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Fluorene	µg/l	0.01	ISO 17025	0.25	70	I/S
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Phenanthrene	µg/l	0.01	ISO 17025	1.1	91	I/S
Anthracene	µg/l	0.01	ISO 17025	0.59	10	I/S
Carbazole	µg/l	0.05	NONE	< 0.05	49	I/S
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Fluoranthene	µg/l	0.01	ISO 17025	2.2	14	I/S
Pyrene	µg/l	0.01	ISO 17025	2.5	8.4	I/S
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	I/S
Benzo(a)anthracene	µg/l	0.01	ISO 17025	1.8	< 0.01	I/S
Chrysene	µg/l	0.01	ISO 17025	1.7	< 0.01	I/S
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	2.0	< 0.01	I/S
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.74	< 0.01	I/S
Benzo(a)pyrene	µg/l	0.01	ISO 17025	1.6	< 0.01	I/S
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	0.98	< 0.01	I/S
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	I/S
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	1.1	< 0.01	I/S
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	I/S

Gases

Methane	mg/L	0.1	NONE	< 0.1	2.8	2.1
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U/S = Unsuitable Sample I/S = Insufficient Sample

* U/S for Cu on ICP-MS due to matrix interference, the results are reported from ICP-OES

**Over range data, sample was diluted and results are estimated from an extrapolated calibration. Results should be interpreted with care.



Analytical Report Number : 21-91615
Project / Site name: Hayes

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Complex cyanide in water	Determination of complex cyanide by calculation. Accredited matrices SW, PW, GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Mineral Oil (Waters) C10 - C40	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
pH at 20oC in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L005-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE



Analytical Report Number : 21-91615
Project / Site name: Hayes

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
TPH2 (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW, GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
DRO (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE



Analytical Report Number : 21-91615
Project / Site name: Hayes

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025

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 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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Sample Deviation Report



Analytical Report Number : 21-91615

Project / Site name: Hayes

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	1965314	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	1965314	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	1965314	c	Ammonium as NH4 in water	L082-PL	c
BH101	None Supplied	W	1965314	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	1965314	c	Electrical conductivity at 20oC of water	L031-PL	c
BH101	None Supplied	W	1965314	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	1965314	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	1965314	c	pH at 20oC in water	L005-PL	c
BH101	None Supplied	W	1965314	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	1965315	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	1965315	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	1965315	c	Ammonium as NH4 in water	L082-PL	c
BH102	None Supplied	W	1965315	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	1965315	c	Electrical conductivity at 20oC of water	L031-PL	c
BH102	None Supplied	W	1965315	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	1965315	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	1965315	c	pH at 20oC in water	L005-PL	c
BH102	None Supplied	W	1965315	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	1965316	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	1965316	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	1965316	c	Ammonium as NH4 in water	L082-PL	c
BH103	None Supplied	W	1965316	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	1965316	c	Electrical conductivity at 20oC of water	L031-PL	c
BH103	None Supplied	W	1965316	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	1965316	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	1965316	c	pH at 20oC in water	L005-PL	c
BH103	None Supplied	W	1965316	c	pH at 20oC in water (automated)	L099-PL	c

DRAFT



Environmental Science

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Analytical Report Number : 21-94596

Project / Site name: North Hyde Garens
Your job number:
Your order number: 211423 CB
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 20/08/2021
**Samples instructed on/
Analysis started on:** 23/08/2021
Analysis completed by: 01/09/2021
Report issued on: 01/09/2021

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Signed: _____

Karolina Marek
PL Head of Reporting Team
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.



Environmental Science

Analytical Report Number: 21-94596
Project / Site name: North Hyde Garens

Your Order No: 211423 CB

Lab Sample Number				1982496	1982497	1982498
Sample Reference				BH102	BH101	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				6.00-6.00	6.00-6.00	5.00-5.00
Date Sampled				19/08/2021	19/08/2021	19/08/2021
Time Taken				1000	1045	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

General Inorganics

	pH Units	N/A	ISO 17025	7.0	6.5	7.4
Sulphate as SO4	mg/l	0.045	ISO 17025	129	534	583
Total Sulphur	µg/l	15	NONE	43000	180000	190000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	4900	5000	5800
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	37.3	3.71	17.1
Nitrate as N	mg/l	0.01	ISO 17025	0.77	3.38	0.48
Nitrate as NO3	mg/l	0.05	ISO 17025	3.41	15.0	2.12
Nitrite as N	µg/l	1	ISO 17025	290	1100	< 1.0
Nitrite as NO2	µg/l	5	ISO 17025	940	3500	< 5.0
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	140	1100	6500
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	6.2	2.5	7.9
Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5

Speciated PAHs

	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.23
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.95
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	13.3
Acenaphthene	µg/l	0.01	ISO 17025	40.1	< 0.01	10.3
Fluorene	µg/l	0.01	ISO 17025	18.6	< 0.01	23.6
Phenanthrene	µg/l	0.01	ISO 17025	10.8	< 0.01	87.3
Anthracene	µg/l	0.01	ISO 17025	1.29	< 0.01	76.0
Fluoranthene	µg/l	0.01	ISO 17025	2.50	< 0.01	62.4
Pyrene	µg/l	0.01	ISO 17025	1.29	< 0.01	16.1
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	15.5
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	12.6
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	4.79
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	7.34
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.97
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.15

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	74.5	< 0.16	337



Analytical Report Number: 21-94596
Project / Site name: North Hyde Garens

Your Order No: 211423 CB

Lab Sample Number	1982496	1982497	1982498
Sample Reference	BH102	BH101	BH103
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	6.00-6.00	6.00-6.00	5.00-5.00
Date Sampled	19/08/2021	19/08/2021	19/08/2021
Time Taken	1000	1045	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status

Heavy Metals / Metalloids

Element	Unit	Limit of detection	ISO 17025	1982496	1982497	1982498
Calcium (dissolved)	mg/l	0.012	ISO 17025	210	1100	350
Copper (dissolved)	µg/l	0.7	ISO 17025	-	1.6*	-
Iron (dissolved)	mg/l	0.004	ISO 17025	0.45	0.11	0.014
Fe2+	mg/l	0.2	NONE	< 0.20	I/S	< 0.20
Fe3+	mg/l	0.2	NONE	0.35	I/S	< 0.20
Mn (II)	mg/l	0.02	NONE	1.80	15.8	0.75
Mn (IV)	mg/l	0.02	NONE	0.48	0.77	0.44

Arsenic (dissolved)	µg/l	0.15	ISO 17025	3.29	44.8	16.6
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.76	0.04
Chromium (dissolved)	µg/l	0.2	ISO 17025	4.8	3.1	4.8
Copper (dissolved)	µg/l	0.5	ISO 17025	4.6	U/S*	23
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.5
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	> 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.6	15	19
Selenium (dissolved)	µg/l	0.6	ISO 17025	3.8	18	8.7
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.7	8.5	6.4

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	22.4	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	12.7	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	8.2	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	9.9	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	7.2	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	22	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	13	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	25	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	59	< 10	470
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	16	< 10	1100
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	470
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	140	< 10	2000

Gases

Methane	mg/L	0.1	NONE	3.6	< 0.1	< 0.1
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U/S = Unsuitable Sample I/S = Insufficient Sample

* U/S for Cu on ICP-MS due to matrix interference, the results are reported from ICP-OES

Analytical Report Number : 21-94596
Project / Site name: North Hyde Garens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-94596
Project / Site name: North Hyde Garens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report



Environmental Science

Analytical Report Number : 21-94596
Project / Site name: North Hyde Garens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	1982497	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	1982497	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	1982497	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	1982497	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	1982497	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	1982497	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	1982496	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	1982496	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	1982496	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	1982496	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	1982496	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	1982496	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	1982498	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	1982498	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	1982498	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	1982498	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	1982498	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	1982498	c	pH at 20oC in water (automated)	L099-PL	c

DRAFT



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Analytical Report Number : 21-96723

Project / Site name: North Hyde Gardens
Your job number:
Your order number: 211423 CB
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 01/09/2021
**Samples instructed on/
Analysis started on:** 02/09/2021
Analysis completed by: 14/09/2021
Report issued on: 14/09/2021

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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



Analytical Report Number: 21-96723
Project / Site name: North Hyde Gardens

Your Order No: 211423 CB

Lab Sample Number	1995324			1995325			1995326		
Sample Reference	BH102			BH101			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	6.00-6.00			6.00-6.00			5.00-5.00		
Date Sampled	31/08/2021			31/08/2021			31/08/2021		
Time Taken	1000			1045			1115		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
pH	pH Units	N/A	ISO 17025	6.7	7.4	7.2
Sulphate as SO4	mg/l	0.045	ISO 17025	47.8	507	392
Total Sulphur	µg/l	15	NONE	16000	170000	130000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	6400	4900	9500
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	I/S	I/S	I/S
Nitrate as N	mg/l	0.01	ISO 17025	0.82	0.44	0.56
Nitrate as NO3	mg/l	0.05	ISO 17025	3.61	1.96	2.48
Nitrite as N	µg/l	1	ISO 17025	180	65	19
Nitrite as NO2	µg/l	5	ISO 17025	590	210	61
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	200	630	750
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	6.5	1.2	< 1.0

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	4600	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	4600	< 3.5	< 3.5
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Speciated PAHs

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
Naphthalene	µg/l	0.01	ISO 17025	50.1	< 0.01	3.49
Acenaphthylene	µg/l	0.01	ISO 17025	1.34	< 0.01	0.83
Acenaphthene	µg/l	0.01	ISO 17025	62.2	< 0.01	32.2
Fluorene	µg/l	0.01	ISO 17025	31.1	< 0.01	18.7
Phenanthrene	µg/l	0.01	ISO 17025	21.5	< 0.01	19.1
Anthracene	µg/l	0.01	ISO 17025	1.82	< 0.01	27.7
Fluoranthene	µg/l	0.01	ISO 17025	2.86	< 0.01	25.7
Pyrene	µg/l	0.01	ISO 17025	1.34	< 0.01	19.3
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.52
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.42
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.40
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.78
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.92
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	172	< 0.16	155
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Analytical Report Number: 21-96723
Project / Site name: North Hyde Gardens

Your Order No: 211423 CB

Lab Sample Number	1995324			1995325			1995326		
Sample Reference	BH102			BH101			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	6.00-6.00			6.00-6.00			5.00-5.00		
Date Sampled	31/08/2021			31/08/2021			31/08/2021		
Time Taken	1000			1045			1115		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

Heavy Metals / Metalloids

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
Calcium (dissolved)	mg/l	0.012	ISO 17025	230	910	300
Iron (dissolved)	mg/l	0.004	ISO 17025	0.71	0.098	0.12
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	0.64	< 0.20	< 0.20
Mn (II)	mg/l	0.02	NONE	2.48	14.1	1.08
Mn (IV)	mg/l	0.02	NONE	0.33	0.28	0.07

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.90	52.1	9.44
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	1.1	0.03
Chromium (dissolved)	µg/l	0.2	ISO 17025	4.8	4.2	6.3
Copper (dissolved)	µg/l	0.5	ISO 17025	5.0	86	10
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	7.1
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.9	28	46
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.3	22	3.3
Zinc (dissolved)	µg/l	0.5	ISO 17025	10	9.4	7.6

Monoaromatics & Oxygenates

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
Benzene	µg/l	1	ISO 17025	56.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	28.1	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	21.8	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	26.1	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	18.9	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	56	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	28	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	77	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	130	< 10	20
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	3900	< 10	180
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	1800	< 10	170
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	5900	< 10	380

Gases

Parameter	Units	Limit of detection	Accreditation Status	1995324	1995325	1995326
Methane	mg/L	0.1	NONE	14	< 0.1	6.3

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-96723
Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
pH at 20oC in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L005-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-96723
 Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

DRAFT

Sample Deviation Report



Analytical Report Number : 21-96723
 Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	1995325	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	1995324	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	1995326	c	Biological oxygen demand (total) of water	L086-PL	c

DRAFT



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Analytical Report Number : 21-10254

Project / Site name: North Hyde Gardens
Your job number:
Your order number: 211424 CB
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 15/09/2021
**Samples instructed on/
Analysis started on:** 15/09/2021
Analysis completed by: 24/09/2021
Report issued on: 24/09/2021

DRAFT

Joanna Wawrzeczek

Signed: _____

Joanna Wawrzeczeko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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



Analytical Report Number: 21-10254
Project / Site name: North Hyde Gardens

Your Order No: 211424 CB

Lab Sample Number	2012775			2012776			2012777		
Sample Reference	BH102			BH101			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	6.00-6.00			6.00-6.00			5.00-5.00		
Date Sampled	14/09/2021			14/09/2021			14/09/2021		
Time Taken	1000			1030			1100		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	Limit of detection	Accreditation Status	2012775	2012776	2012777
pH	pH Units	N/A	ISO 17025	6.9	6.6	7.2
Sulphate as SO4	mg/l	0.045	ISO 17025	24.5	353	364
Total Sulphur	µg/l	15	NONE	8200	120000	120000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	6300	4700	7900
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	57.3	5.10	41.1
Nitrate as N	mg/l	0.01	ISO 17025	0.55	0.58	0.43
Nitrate as NO3	mg/l	0.05	ISO 17025	2.43	2.58	1.91
Nitrite as N	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	230	350	380
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	15	1.2	5.4

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Parameter	Units	Limit of detection	Accreditation Status	2012775	2012776	2012777
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	6600	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	6600	< 3.5	< 3.5
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Speciated PAHs

Parameter	Units	Limit of detection	Accreditation Status	2012775	2012776	2012777
Naphthalene	µg/l	0.01	ISO 17025	1.01	< 0.01	2.43
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.87
Acenaphthene	µg/l	0.01	ISO 17025	47.4	< 0.01	8.43
Fluorene	µg/l	0.01	ISO 17025	25.7	< 0.01	8.26
Phenanthrene	µg/l	0.01	ISO 17025	11.3	< 0.01	16.1
Anthracene	µg/l	0.01	ISO 17025	2.27	< 0.01	34.8
Fluoranthene	µg/l	0.01	ISO 17025	5.05	< 0.01	25.4
Pyrene	µg/l	0.01	ISO 17025	3.01	< 0.01	21.8
Benzo(a)anthracene	µg/l	0.01	ISO 17025	0.56	< 0.01	5.41
Chrysene	µg/l	0.01	ISO 17025	0.44	< 0.01	6.08
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.84
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.70
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.40
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.81
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.21
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.85

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	96.8	< 0.16	139
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Analytical Report Number: 21-10254
Project / Site name: North Hyde Gardens

Your Order No: 211424 CB

Lab Sample Number	2012775		2012776		2012777	
Sample Reference	BH102		BH101		BH103	
Sample Number	None Supplied		None Supplied		None Supplied	
Depth (m)	6.00-6.00		6.00-6.00		5.00-5.00	
Date Sampled	14/09/2021		14/09/2021		14/09/2021	
Time Taken	1000		1030		1100	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	240	880	340
Copper (dissolved)	µg/l	0.7	ISO 17025	-	< 0.7	-
Iron (dissolved)	mg/l	0.004	ISO 17025	0.13	0.11	0.41
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	0.30
Mn (II)	mg/l	0.02	NONE	0.77	3.35	0.78
Mn (IV)	mg/l	0.02	NONE	2.59	7.48	1.58

Arsenic (dissolved)	µg/l	0.15	ISO 17025	14.0	34.3	22.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.22	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	7.9	4.2	6.4
Copper (dissolved)	µg/l	0.5	ISO 17025	1.3	-	3.4
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.9	12	12
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.6	11	3.5
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.6	4.8	2.0

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	48.3	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	24.4	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	19.9	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	21.7	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	14.7	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	48	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	24	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	63	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	240	< 10	110
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	870	< 10	210
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	51
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	1200	< 10	360

Gases

Methane	mg/L	0.1	NONE	0.8	< 0.1	< 0.1
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U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-10254
Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-10254
 Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

DRAFT

Sample Deviation Report



Analytical Report Number : 21-10254
 Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2012776	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2012775	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2012777	c	Biological oxygen demand (total) of water	L086-PL	c

DRAFT



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Analytical Report Number : 21-13709

Project / Site name: North Hyde Gardens
Your job number:
Your order number:
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 01/10/2021
**Samples instructed on/
Analysis started on:** 01/10/2021
Analysis completed by: 13/10/2021
Report issued on: 13/10/2021

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 21-13709
Project / Site name: North Hyde Gardens

Lab Sample Number	2031962			2031963			2031964		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	4.50-4.5			6.50-6.50			5.00-5.00		
Date Sampled	30/09/2021			30/09/2021			30/09/2021		
Time Taken	1123			1056			0957		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	N/A	ISO 17025	2031962	2031963	2031964
pH	pH Units	N/A	ISO 17025	6.6	6.9	7.0
Sulphate as SO4	mg/l	0.045	ISO 17025	408	224	500
Total Sulphur	µg/l	15	NONE	140000	75000	170000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	3800	3100	8300
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	6.83	37.2	48.3
Nitrate as N	mg/l	0.01	ISO 17025	0.39	4.65	0.18
Nitrate as NO3	mg/l	0.05	ISO 17025	1.71	20.6	0.78
Nitrite as N	µg/l	1	ISO 17025	180	56	16
Nitrite as NO2	µg/l	5	ISO 17025	610	190	54
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	390	110	320
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	< 1.0	13	2.9

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Parameter	Units	N/A	ISO 17025	2031962	2031963	2031964
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	1700	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	1700	< 3.5
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Speciated PAHs

Parameter	Units	N/A	ISO 17025	2031962	2031963	2031964
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	16.7	4.44
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.76
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	46.5	19.2
Fluorene	µg/l	0.01	ISO 17025	< 0.01	25.7	20.4
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	19.0	60.6
Anthracene	µg/l	0.01	ISO 17025	< 0.01	2.81	127
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	6.04	129
Pyrene	µg/l	0.01	ISO 17025	< 0.01	3.74	106
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	0.62	27.4
Chrysene	µg/l	0.01	ISO 17025	< 0.01	0.59	27.9
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.22	21.9
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.13	7.87
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	12.8
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.65
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.19
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	4.12

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	122	576
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Heavy Metals / Metalloids



Analytical Report Number: 21-13709
Project / Site name: North Hyde Gardens

Lab Sample Number				2031962	2031963	2031964
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				4.50-4.5	6.50-6.50	5.00-5.00
Date Sampled				30/09/2021	30/09/2021	30/09/2021
Time Taken				1123	1056	0957
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			
Calcium (dissolved)	mg/l	0.012	ISO 17025	550	170	390
Copper (dissolved)	µg/l	0.7	ISO 17025	< 0.7	-	-
Iron (dissolved)	mg/l	0.004	ISO 17025	2.1	1.3	2.1
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	2.11	1.29	2.01
Mn (II)	mg/l	0.02	NONE	7.92	1.40	1.85
Mn (IV)	mg/l	0.02	NONE	0.42	0.45	0.86

Arsenic (dissolved)	µg/l	0.15	ISO 17025	16.3	2.55	17.3
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.75	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.2	2.9	6.1
Copper (dissolved)	µg/l	0.5	ISO 17025	-	7.8	5.2
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.2	1.1
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	7.3	4.3	7.8
Selenium (dissolved)	µg/l	0.6	ISO 17025	32	8.5	5.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.4	4.4	2.8

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	14.5	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	10.1	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	8.9	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	10.5	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	6.2	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	15	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	10	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	28	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	1300	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	3700	420
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	1500	42
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	110
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	6500	570

Gases

Methane	mg/L	0.1	NONE	< 0.1*	2.3*	6.8*
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U/S = Unsuitable Sample I/S = Insufficient Sample

*Sample was delivered to Air Laboratory in deviating container

Analytical Report Number : 21-13709
Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
pH at 20oC in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L005-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-13709
 Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report



Analytical Report Number : 21-13709
 Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2031962	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	2031962	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	2031962	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	2031962	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	2031962	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	2031962	c	pH at 20oC in water	L005-PL	c
BH101	None Supplied	W	2031962	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	2031963	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	2031963	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	2031963	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2031963	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	2031963	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	2031963	c	pH at 20oC in water	L005-PL	c
BH102	None Supplied	W	2031963	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	2031964	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	2031964	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	2031964	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2031964	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	2031964	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	2031964	c	pH at 20oC in water	L005-PL	c
BH103	None Supplied	W	2031964	c	pH at 20oC in water (automated)	L099-PL	c

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Analytical Report Number : 21-16648

Project / Site name: North Hyde Gardens
Your job number:
Your order number:
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 14/10/2021
**Samples instructed on/
Analysis started on:** 15/10/2021
Analysis completed by: 27/10/2021
Report issued on: 27/10/2021

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Signed: _____

Joanna Wawrzeczek
Joanna Wawrzeczeko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 21-16648
Project / Site name: North Hyde Gardens

Lab Sample Number	2048647			2048648	2048649
Sample Reference	BH102			BH101	BH103
Sample Number	None Supplied			None Supplied	None Supplied
Depth (m)	None Supplied			None Supplied	None Supplied
Date Sampled	13/10/2021			13/10/2021	13/10/2021
Time Taken	0900			0930	1015
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.3	6.7	7.4
Sulphate as SO4	mg/l	0.045	ISO 17025	188	580	531
Total Sulphur	µg/l	15	NONE	63000	190000	180000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	3800	3700	5000
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	35.5	4.73	32.1
Nitrate as N	mg/l	0.01	ISO 17025	1.09	3.07	0.58
Nitrate as NO3	mg/l	0.05	ISO 17025	4.81	13.6	2.59
Nitrite as N	µg/l	1	ISO 17025	16	410	2.7
Nitrite as NO2	µg/l	5	ISO 17025	51	1400	8.8
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	120	780	280
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	12	13	6.1

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	2500	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	2500	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	4.50	< 0.01	0.76
Acenaphthylene	µg/l	0.01	ISO 17025	0.64	< 0.01	0.49
Acenaphthene	µg/l	0.01	ISO 17025	22.3	< 0.01	1.56
Fluorene	µg/l	0.01	ISO 17025	11.0	< 0.01	1.26
Phenanthrene	µg/l	0.01	ISO 17025	8.05	< 0.01	3.16
Anthracene	µg/l	0.01	ISO 17025	1.73	< 0.01	9.02
Fluoranthene	µg/l	0.01	ISO 17025	4.38	< 0.01	12.6
Pyrene	µg/l	0.01	ISO 17025	2.68	< 0.01	10.8
Benzo(a)anthracene	µg/l	0.01	ISO 17025	0.70	< 0.01	3.35
Chrysene	µg/l	0.01	ISO 17025	0.54	< 0.01	3.63
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	0.24	< 0.01	3.05
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.12	< 0.01	0.94
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.90
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.78
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.22
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.77

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	56.9	< 0.16	54.4
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Analytical Report Number: 21-16648
Project / Site name: North Hyde Gardens

Lab Sample Number				2048647	2048648	2048649
Sample Reference				BH102	BH101	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				13/10/2021	13/10/2021	13/10/2021
Time Taken				0900	0930	1015
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	190	1300	360
Copper (dissolved)	µg/l	0.7	ISO 17025	-	< 0.7	-
Iron (dissolved)	mg/l	0.004	ISO 17025	0.59	2.7	0.29
Fe2+	mg/l	0.2	NONE	< 0.20	1.80	0.20
Fe3+	mg/l	0.2	NONE	0.57	0.95	< 0.20
Mn (II)	mg/l	0.02	NONE	1.03	7.99	1.12
Mn (IV)	mg/l	0.02	NONE	1.28	5.69	1.28
Selenium (dissolved)	µg/l	4	ISO 17025	-	< 4.0	-

Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.15	79.7	12.2
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	4.4	0.03
Chromium (dissolved)	µg/l	0.2	ISO 17025	6.5	7.8	8.6
Copper (dissolved)	µg/l	0.5	ISO 17025	6.2	-	6.6
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6.9	48	15
Selenium (dissolved)	µg/l	0.6	ISO 17025	4.8	29	8.3
Zinc (dissolved)	µg/l	0.5	ISO 17025	11	20	7.1

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	18.1	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	9.1	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	8.9	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	9.4	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	6.4	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	18	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	9.1	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	30	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	33	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	17	< 10	36
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	15
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	110	< 10	51

Gases

Methane	mg/L	0.1	NONE	3.6	< 0.1	1.9
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U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-16648
Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
pH at 20oC in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L005-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-16648
Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 21-16648
Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2048648	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	2048648	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	2048648	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	2048648	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	2048648	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	2048648	c	pH at 20oC in water	L005-PL	c
BH101	None Supplied	W	2048648	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	2048647	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	2048647	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	2048647	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2048647	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	2048647	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	2048647	c	pH at 20oC in water	L005-PL	c
BH102	None Supplied	W	2048647	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	2048649	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	2048649	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	2048649	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2048649	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	2048649	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	2048649	c	pH at 20oC in water	L005-PL	c
BH103	None Supplied	W	2048649	c	pH at 20oC in water (automated)	L099-PL	c

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Analytical Report Number : 21-19641

Project / Site name: North Hyde Gardens
Your job number:
Your order number:
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 29/10/2021
**Samples instructed on/
Analysis started on:** 29/10/2021
Analysis completed by: 09/11/2021
Report issued on: 09/11/2021

Signed:

Izabela Wójcik

Izabela Wójcik
Technical Reviewer (Reporting Team)
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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Analytical Report Number: 21-19641
Project / Site name: North Hyde Gardens

Lab Sample Number	2065492			2065493			2065494		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	6.50-6.50			6.50-6.50			5.00-5.00		
Date Sampled	28/10/2021			28/10/2021			28/10/2021		
Time Taken	1015			1040			1110		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	N/A	ISO 17025	2065492	2065493	2065494
pH	pH Units	N/A	ISO 17025	6.7	7.1	7.2
Sulphate as SO4	mg/l	0.045	ISO 17025	478	122	393
Total Sulphur	µg/l	15	NONE	160000	41000	130000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	2900	3600	3800
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	4.09	28.9	19.0
Nitrate as N	mg/l	0.01	ISO 17025	3.25	0.56	0.46
Nitrate as NO3	mg/l	0.05	ISO 17025	14.4	2.47	2.05
Nitrite as N	µg/l	1	ISO 17025	15	38	2.3
Nitrite as NO2	µg/l	5	ISO 17025	50	120	7.5
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	360	110	760
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	29	29	29

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Parameter	Units	N/A	ISO 17025	2065492	2065493	2065494
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Parameter	Units	N/A	ISO 17025	2065492	2065493	2065494
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	59.4	2.90
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	1.13	0.66
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	47.1	12.9
Fluorene	µg/l	0.01	ISO 17025	< 0.01	22.5	8.81
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	17.3	11.6
Anthracene	µg/l	0.01	ISO 17025	< 0.01	1.50	26.6
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	2.76	27.9
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.31	21.6
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	4.11
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.83
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.52
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.15
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.63
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.50
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.53

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	153	127
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Analytical Report Number: 21-19641
Project / Site name: North Hyde Gardens

Lab Sample Number	2065492			2065493			2065494		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	6.50-6.50			6.50-6.50			5.00-5.00		
Date Sampled	28/10/2021			28/10/2021			28/10/2021		
Time Taken	1015			1040			1110		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

Heavy Metals / Metalloids

Parameter	Units	Limit of detection	Accreditation Status	2065492	2065493	2065494
Calcium (dissolved)	mg/l	0.012	ISO 17025	910	180	340
Copper (dissolved)	µg/l	0.7	ISO 17025	7.2	-	-
Iron (dissolved)	mg/l	0.004	ISO 17025	0.073	0.16	0.42
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	0.40
Mn (II)	mg/l	0.02	NONE	1.92	0.19	0.51
Mn (IV)	mg/l	0.02	NONE	8.65	1.86	1.15

Parameter	Units	Limit of detection	Accreditation Status	2065492	2065493	2065494
Arsenic (dissolved)	µg/l	0.15	ISO 17025	86.1	9.07	10.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	2.5	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	9.9	6.6	8.1
Copper (dissolved)	µg/l	0.5	ISO 17025	-	2.1	2.7
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2	< 0.2	0.3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	36	5.6	8.6
Selenium (dissolved)	µg/l	0.6	ISO 17025	28	3.2	6.4
Zinc (dissolved)	µg/l	0.5	ISO 17025	16	7.7	3.0

Monoaromatics & Oxygenates

Parameter	Units	Limit of detection	Accreditation Status	2065492	2065493	2065494
Benzene	µg/l	1	ISO 17025	< 1.0	13.7	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	8.2	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	8.4	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	9.6	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	5.9	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

Parameter	Units	Limit of detection	Accreditation Status	2065492	2065493	2065494
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

Parameter	Units	Limit of detection	Accreditation Status	2065492	2065493	2065494
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	14	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	8.2	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	27	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	81	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	1500	23
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	180	89
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	15
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	1800	130

Gases

Parameter	Units	Limit of detection	Accreditation Status	2065492	2065493	2065494
Methane	mg/L	0.1	NONE	< 0.1*	1.1*	< 0.1*

U/S = Unsuitable Sample I/S = Insufficient Sample

*Sample was delivered to Air Laboratory in deviating container and with headspace

Analytical Report Number : 21-19641
Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-19641
Project / Site name: North Hyde Gardens

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report



Analytical Report Number : 21-19641
 Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2065492	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	2065492	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	2065492	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	2065492	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	2065492	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	2065492	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	2065493	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	2065493	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	2065493	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2065493	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	2065493	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	2065493	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	2065494	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	2065494	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	2065494	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2065494	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	2065494	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	2065494	c	pH at 20oC in water (automated)	L099-PL	c

DRAFT



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Analytical Report Number : 21-22475

Project / Site name: North Hyde Gardens
Your job number:
Your order number: 211423_CB
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 11/11/2021
**Samples instructed on/
Analysis started on:** 12/11/2021
Analysis completed by: 24/11/2021
Report issued on: 24/11/2021

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 21-22475
Project / Site name: North Hyde Gardens

Your Order No: 211423_CB

Lab Sample Number	2080603			2080604			2080605		
Sample Reference	BH102			BH101			BH103		
Sample Number	BH102			BH101			BH103		
Depth (m)	6.00-6.00			6.00-6.00			5.00-5.00		
Date Sampled	10/11/2021			10/11/2021			10/11/2021		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	Limit of detection	Accreditation Status	2080603	2080604	2080605
pH	pH Units	N/A	ISO 17025	7.3	7.1	7.5
Sulphate as SO4	mg/l	0.045	ISO 17025	70.5	436	506
Total Sulphur	µg/l	15	NONE	23000	150000	170000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	4000	1600	5200
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	35.1	2.76	23.0
Nitrate as N	mg/l	0.01	ISO 17025	0.47	3.72	0.30
Nitrate as NO3	mg/l	0.05	ISO 17025	2.10	16.5	1.31
Nitrite as N	µg/l	1	ISO 17025	3.9	250	6.6
Nitrite as NO2	µg/l	5	ISO 17025	13	810	22
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	140	460	140
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	32	3.0	< 1.0

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Parameter	Units	Limit of detection	Accreditation Status	2080603	2080604	2080605
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Parameter	Units	Limit of detection	Accreditation Status	2080603	2080604	2080605
Naphthalene	µg/l	0.01	ISO 17025	12.4	< 0.01	1.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.61
Acenaphthene	µg/l	0.01	ISO 17025	30.9	< 0.01	4.77
Fluorene	µg/l	0.01	ISO 17025	16.1	< 0.01	2.27
Phenanthrene	µg/l	0.01	ISO 17025	17.4	< 0.01	5.51
Anthracene	µg/l	0.01	ISO 17025	2.31	< 0.01	12.8
Fluoranthene	µg/l	0.01	ISO 17025	4.52	< 0.01	22.3
Pyrene	µg/l	0.01	ISO 17025	2.95	< 0.01	19.0
Benzo(a)anthracene	µg/l	0.01	ISO 17025	0.54	< 0.01	4.08
Chrysene	µg/l	0.01	ISO 17025	0.49	< 0.01	4.09
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	0.33	< 0.01	3.24
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.12	< 0.01	1.29
Benzo(a)pyrene	µg/l	0.01	ISO 17025	0.20	< 0.01	1.96
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.48
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.48

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	88.2	< 0.16	83.9
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Analytical Report Number: 21-22475
Project / Site name: North Hyde Gardens

Your Order No: 211423_CB

Lab Sample Number	2080603		2080604		2080605	
Sample Reference	BH102		BH101		BH103	
Sample Number	BH102		BH101		BH103	
Depth (m)	6.00-6.00		6.00-6.00		5.00-5.00	
Date Sampled	10/11/2021		10/11/2021		10/11/2021	
Time Taken	None Supplied		None Supplied		None Supplied	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	170	800	360
Iron (dissolved)	mg/l	0.004	ISO 17025	0.23	0.18	0.28
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	0.21	< 0.20	< 0.20
Mn (II)	mg/l	0.02	NONE	0.55	3.52	0.48
Mn (IV)	mg/l	0.02	NONE	1.61	3.61	1.50

Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.70	42.8	6.66
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	2.7	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	5.2	9.6	7.7
Copper (dissolved)	µg/l	0.5	ISO 17025	1.8	680	8.4
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.6	21	16
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.0	14	3.3
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.7	24	16

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	320	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	4500	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	4800	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	13	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	47	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	28	< 10	61
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	18
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	88	< 10	79

Gases

Methane	mg/L	0.1	NONE	6.7	< 0.1	2.6
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U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-22475
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
pH at 20oC in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L005-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-22475
 Project / Site name: North Hyde Gardens

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Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report



Analytical Report Number : 21-22475
 Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	BH101	W	2080604	c	Ammonia as NH3 in water	L082-PL	c
BH101	BH101	W	2080604	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	BH101	W	2080604	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	BH101	W	2080604	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	BH101	W	2080604	c	Manganese II and IV in Water	L090-PL	c
BH101	BH101	W	2080604	c	pH at 20oC in water	L005-PL	c
BH101	BH101	W	2080604	c	pH at 20oC in water (automated)	L099-PL	c
BH102	BH102	W	2080603	c	Ammonia as NH3 in water	L082-PL	c
BH102	BH102	W	2080603	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	BH102	W	2080603	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	BH102	W	2080603	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	BH102	W	2080603	c	Manganese II and IV in Water	L090-PL	c
BH102	BH102	W	2080603	c	pH at 20oC in water	L005-PL	c
BH102	BH102	W	2080603	c	pH at 20oC in water (automated)	L099-PL	c
BH103	BH103	W	2080605	c	Ammonia as NH3 in water	L082-PL	c
BH103	BH103	W	2080605	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	BH103	W	2080605	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	BH103	W	2080605	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	BH103	W	2080605	c	Manganese II and IV in Water	L090-PL	c
BH103	BH103	W	2080605	c	pH at 20oC in water	L005-PL	c
BH103	BH103	W	2080605	c	pH at 20oC in water (automated)	L099-PL	c

DRAFT



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Analytical Report Number : 21-24964

Project / Site name: North Hyde Gardens **Samples received on:** 24/11/2021

Your job number: **Samples instructed on/ Analysis started on:** 24/11/2021

Your order number: **Analysis completed by:** 06/12/2021

Report Issue Number: 1 **Report issued on:** 06/12/2021

Samples Analysed: 3 water samples

DRAFT

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 21-24964
Project / Site name: North Hyde Gardens

Lab Sample Number				2093804	2093805	2093806
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				6.50-6.50	6.50-6.50	5.00-5.00
Date Sampled				23/11/2021	23/11/2021	23/11/2021
Time Taken				1110	1030	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

General Inorganics

pH	pH Units	N/A	ISO 17025	6.8	7.0	7.6
Sulphate as SO ₄	mg/l	0.045	ISO 17025	447	70.6	392
Total Sulphur	µg/l	15	NONE	150000	24000	130000
Sulphide	µg/l	5	NONE	< 5.0	U/S*	U/S*
Ammoniacal Nitrogen as NH ₃	µg/l	15	ISO 17025	2100	4400	7600
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	5.44	40.2	36.3
Nitrate as N	mg/l	0.01	ISO 17025	0.89	0.43	0.46
Nitrate as NO ₃	mg/l	0.05	ISO 17025	3.96	1.90	2.06
Nitrite as N	µg/l	1	ISO 17025	240	9.5	4.6
Nitrite as NO ₂	µg/l	5	ISO 17025	770	31	15
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	230	200	2700
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	1.6	32	34

Carbonate as CaCO ₃ (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	1200	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	3400	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	4600	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	35.6	3.41
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.65
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	30.4	10.6
Fluorene	µg/l	0.01	ISO 17025	< 0.01	17.4	9.02
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	11.2	18.8
Anthracene	µg/l	0.01	ISO 17025	< 0.01	1.00	39.3
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	1.56	43.8
Pyrene	µg/l	0.01	ISO 17025	< 0.01	0.74	38.5
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	12.1
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	12.5
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	8.75
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	4.25
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	5.30
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.76
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.59
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.87

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	97.8	212
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Heavy Metals / Metalloids

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.



Analytical Report Number: 21-24964
Project / Site name: North Hyde Gardens

Lab Sample Number				2093804	2093805	2093806
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				6.50-6.50	6.50-6.50	5.00-5.00
Date Sampled				23/11/2021	23/11/2021	23/11/2021
Time Taken				1110	1030	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			
Calcium (dissolved)	mg/l	0.012	ISO 17025	770	220	370
Copper (dissolved)	µg/l	0.7	ISO 17025	< 0.7	-	-
Iron (dissolved)	mg/l	0.004	ISO 17025	0.097	0.22	0.14
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Mn (II)	mg/l	0.02	NONE	2.56	0.05	0.44
Mn (IV)	mg/l	0.02	NONE	5.09	2.56	0.72

Arsenic (dissolved)	µg/l	0.15	ISO 17025	26.4	5.17	6.46
Cadmium (dissolved)	µg/l	0.02	ISO 17025	1.3	< 0.02	0.04
Chromium (dissolved)	µg/l	0.2	ISO 17025	6.4	8.4	7.9
Copper (dissolved)	µg/l	0.5	ISO 17025	-	2.9	22
Lead (dissolved)	µg/l	0.2	ISO 17025	0.4	0.3	5.9
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	12	5.6	16
Selenium (dissolved)	µg/l	0.6	ISO 17025	18	2.4	3.4
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.7	4.7	4.3

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	32.4	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	18.9	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	15.9	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	18.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	11.7	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	32	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	19	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	55	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	43	< 10
TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	430	210
TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	300	290
TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	47
TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	880	540

Gases

Methane	mg/L	0.1	NONE	< 0.1	6.5	1.2
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U/S = Unsuitable Sample I/S = Insufficient Sample

*Analysis could not be completed due to sample matrix.



Analytical Report Number : 21-24964
Project / Site name: North Hyde Gardens

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
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Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method based on Alkalinity	L025-PL	W	NONE
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pH at 20oC in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L005-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
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Analytical Report Number : 21-24964
Project / Site name: North Hyde Gardens

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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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 21-24964
Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2093804	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2093805	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2093806	c	Biological oxygen demand (total) of water	L086-PL	c

DRAFT



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Analytical Report Number : 21-28060

Project / Site name: North Hyde Gardens **Samples received on:** 08/12/2021
Your job number: **Samples instructed on/
Analysis started on:** 09/12/2021
Your order number: **Analysis completed by:** 17/12/2021
Report Issue Number: 1 **Report issued on:** 17/12/2021
Samples Analysed: 3 water samples

DRAFT

Signed: _____

Joanna Wawrzeczek
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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



Analytical Report Number: 21-28060
Project / Site name: North Hyde Gardens

Lab Sample Number	2110771			2110772			2110773		
Sample Reference	BH103			BH102			BH101		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied		
Date Sampled	Deviating			Deviating			Deviating		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

	pH Units	N/A	ISO 17025	7.2	7.1	6.8
Sulphate as SO ₄	mg/l	0.045	ISO 17025	330	72.5	340
Total Sulphur	µg/l	15	NONE	110000	24000	110000
Sulphide	µg/l	5	NONE	U/S*	U/S*	< 5.0
Ammoniacal Nitrogen as NH ₃	µg/l	15	ISO 17025	6300	3700	2600
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	28.1	35.9	3.30
Nitrate as N	mg/l	0.01	ISO 17025	0.17	0.89	0.45
Nitrate as NO ₃	mg/l	0.05	ISO 17025	0.77	3.96	2.01
Nitrite as N	µg/l	1	ISO 17025	< 1.0	2.4	250
Nitrite as NO ₂	µg/l	5	ISO 17025	< 5.0	8.0	810
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	130	130	400
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	5.5	20	3.9

Carbonate as CaCO ₃ (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	1100	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	4000	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	5100	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	1.62	3.79	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	0.59	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	10.6	24.1	< 0.01
Fluorene	µg/l	0.01	ISO 17025	6.37	12.7	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	5.63	9.00	< 0.01
Anthracene	µg/l	0.01	ISO 17025	26.0	1.54	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	18.2	2.41	< 0.01
Pyrene	µg/l	0.01	ISO 17025	14.6	1.41	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	2.62	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	3.17	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	1.71	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.62	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	0.94	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	92.6	54.9	< 0.16
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Analytical Report Number: 21-28060
Project / Site name: North Hyde Gardens

Lab Sample Number				2110771	2110772	2110773
Sample Reference				BH103	BH102	BH101
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	360	170	950
Iron (dissolved)	mg/l	0.004	ISO 17025	0.57	0.53	0.42
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	0.45	0.35	0.27
Mn (II)	mg/l	0.02	NONE	0.70	0.84	0.99
Mn (IV)	mg/l	0.02	NONE	1.08	1.14	8.63

Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.51	2.35	45.3
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	0.97
Chromium (dissolved)	µg/l	0.2	ISO 17025	6.3	5.3	7.5
Copper (dissolved)	µg/l	0.5	ISO 17025	3.0	4.4	160
Lead (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	0.3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	0.06
Nickel (dissolved)	µg/l	0.5	ISO 17025	9.6	7.4	18
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.1	2.5	14
Zinc (dissolved)	µg/l	0.5	ISO 17025	13	9.5	18

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	35.4	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	15.3	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	11.8	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	11.9	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	8.6	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	35	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	15	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	36	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	19	37	< 10
TPH-CWG - Aromatic >C16 - C21 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	65	16	< 10
TPH-CWG - Aromatic >C21 - C35 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_ID_AR_#1_#2_MS	µg/l	10	NONE	94	140	< 10

Gases

Methane	mg/L	0.1	NONE	7.3	5.1	< 0.1
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U/S = Unsuitable Sample I/S = Insufficient Sample
*Sample was oily, some analysis was not possible



Analytical Report Number : 21-28060
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Analytical Report Number : 21-28060
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 21-28060
Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2110773	a	None Supplied	None Supplied	None Supplied
BH102	None Supplied	W	2110772	a	None Supplied	None Supplied	None Supplied
BH103	None Supplied	W	2110771	a	None Supplied	None Supplied	None Supplied

DRAFT



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Analytical Report Number : 21-30643

Replaces Analytical Report Number: 21-30643, issue no. 1
Client sampling date amended.

Project / Site name:	North Hyde Gardens	Samples received on:	21/12/2021
Your job number:		Samples instructed on/ Analysis started on:	22/12/2021
Your order number:		Analysis completed by:	11/01/2022
Report Issue Number:	2	Report issued on:	11/01/2022
Samples Analysed:	2 water samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 21-30643
Project / Site name: North Hyde Gardens

Lab Sample Number				2124976	2124977
Sample Reference				BH101	BH102
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				20/12/2021	20/12/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.1	7.5
pH	pH Units	N/A	ISO 17025	7.1	7.5
Sulphate as SO4	mg/l	0.045	ISO 17025	381	68.4
Total Sulphur	µg/l	15	NONE	130000	23000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	1800	3600
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	8.01	28.8
Nitrate as N	mg/l	0.01	ISO 17025	2.72	0.35
Nitrate as NO3	mg/l	0.05	ISO 17025	12.0	1.56
Nitrite as N	µg/l	1	ISO 17025	360	15
Nitrite as NO2	µg/l	5	ISO 17025	1200	54
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	850	120
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	3.0	6.7

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	35.1
Fluorene	µg/l	0.01	ISO 17025	< 0.01	18.9
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	7.62
Anthracene	µg/l	0.01	ISO 17025	< 0.01	1.40
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	2.68
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.32
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	67.0
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Analytical Report Number: 21-30643
Project / Site name: North Hyde Gardens

Lab Sample Number	2124976			2124977	
Sample Reference	BH101			BH102	
Sample Number	None Supplied			None Supplied	
Depth (m)	None Supplied			None Supplied	
Date Sampled	20/12/2021			20/12/2021	
Time Taken	None Supplied			None Supplied	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	780	140
Copper (dissolved)	µg/l	0.7	ISO 17025	1.0	-
Iron (dissolved)	mg/l	0.004	ISO 17025	0.060	0.15
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	≥ 0.20
Mn (II)	mg/l	0.02	NONE	0.80	0.29
Mn (IV)	mg/l	0.02	NONE	7.18	1.20

Arsenic (dissolved)	µg/l	0.15	ISO 17025	39.7	3.61
Cadmium (dissolved)	µg/l	0.02	ISO 17025	1.7	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	4.0	3.8
Copper (dissolved)	µg/l	0.5	ISO 17025	-	5.7
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	46	7.2
Selenium (dissolved)	µg/l	0.6	ISO 17025	13	1.8
Zinc (dissolved)	µg/l	0.5	ISO 17025	11	11

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	17.5
Toluene	µg/l	1	ISO 17025	< 1.0	12.9
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	13.3
p & m-xylene	µg/l	1	ISO 17025	< 1.0	15.8
o-xylene	µg/l	1	ISO 17025	< 1.0	9.9
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	18
TPH-CWG - Aromatic >C7 - C8 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	13
TPH-CWG - Aromatic >C8 - C10 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	44
TPH-CWG - Aromatic >C10 - C12 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	1900
TPH-CWG - Aromatic >C16 - C21 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	1400
TPH-CWG - Aromatic >C21 - C35 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	300
TPH-CWG - Aromatic (C5 - C35) HS+EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	3600

Gases

Methane	mg/L	0.1	NONE	< 0.1	4.3
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 21-30643
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
pH at 20oC in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L005-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 21-30643
 Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 21-30643
 Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2124976	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2124977	c	Biological oxygen demand (total) of water	L086-PL	c

DRAFT



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Analytical Report Number : 22-31837

Project / Site name: North Hyde Gardens **Samples received on:** 06/01/2022

Your job number: **Samples instructed on/ Analysis started on:** 10/01/2022

Your order number: **Analysis completed by:** 19/01/2022

Report Issue Number: 1 **Report issued on:** 19/01/2022

Samples Analysed: 3 water samples

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 22-31837
Project / Site name: North Hyde Gardens

Lab Sample Number	2131674			2131675			2131676		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	3.69-6.64			4.09-7.00			3.81-5.49		
Date Sampled	05/01/2022			05/01/2022			05/01/2022		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

pH	pH Units	N/A	ISO 17025	6.8	7.0	7.2
Sulphate as SO ₄	mg/l	0.045	ISO 17025	476	51.1	765
Total Sulphur	µg/l	15	NONE	160000	17000	260000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH ₃	µg/l	15	ISO 17025	950	3200	4700
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	3.54	44.3	25.4
Nitrate as N	mg/l	0.01	ISO 17025	6.97	0.11	0.14
Nitrate as NO ₃	mg/l	0.05	ISO 17025	30.9	0.47	0.63
Nitrite as N	µg/l	1	ISO 17025	240	12	< 1.0
Nitrite as NO ₂	µg/l	5	ISO 17025	780	38	< 5.0
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	740	190	84
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	2.8	31	3.5

Carbonate as CaCO ₃ (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	4200	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	3600	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	7800	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	356	1.38
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	1.66	0.24
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	42.2	5.61
Fluorene	µg/l	0.01	ISO 17025	< 0.01	22.1	2.84
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	23.8	1.73
Anthracene	µg/l	0.01	ISO 17025	< 0.01	4.50	1.77
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	10.3	1.13
Pyrene	µg/l	0.01	ISO 17025	< 0.01	6.60	0.81
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	1.13	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	0.81	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.44	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.12	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	0.30	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	470	15.5
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Analytical Report Number: 22-31837
Project / Site name: North Hyde Gardens

Lab Sample Number	2131674			2131675			2131676		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	3.69-6.64			4.09-7.00			3.81-5.49		
Date Sampled	05/01/2022			05/01/2022			05/01/2022		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

Heavy Metals / Metalloids

Element	Units	Limit of detection	Accreditation Status	2131674	2131675	2131676
Calcium (dissolved)	mg/l	0.012	ISO 17025	690	180	420
Copper (dissolved)	µg/l	0.7	ISO 17025	< 0.7	-	-
Iron (dissolved)	mg/l	0.004	ISO 17025	0.34	0.083	0.25
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	0.30	< 0.20	0.24
Mn (II)	mg/l	0.02	NONE	0.46	0.28	0.70
Mn (IV)	mg/l	0.02	NONE	5.32	2.03	1.38

Arsenic (dissolved)	µg/l	0.15	ISO 17025	29.2	2.92	4.46
Cadmium (dissolved)	µg/l	0.02	ISO 17025	1.6	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.4	4.7	3.6
Copper (dissolved)	µg/l	0.5	ISO 17025	-	5.0	5.7
Lead (dissolved)	µg/l	0.2	ISO 17025	0.5	< 0.2	0.7
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	19	5.5	7.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	16	1.4	2.3
Zinc (dissolved)	µg/l	0.5	ISO 17025	7.7	2.9	4.1

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	28.8	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	14.6	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	17.1	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	18.1	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	11.9	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	29	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	15	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	56	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	360	< 10
TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	1000	85
TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	380	40
TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	1900	130

Gases

Methane	mg/L	0.1	NONE	< 0.1	3.5	1.9
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 22-31837
Project / Site name: North Hyde Gardens

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 22-31837
Project / Site name: North Hyde Gardens

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 22-31837
Project / Site name: North Hyde Gardens

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2131674	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	2131674	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	2131674	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	2131674	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	2131674	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	2131674	c	Nitrate as N in water	L078-PL	c
BH101	None Supplied	W	2131674	c	Nitrate in water	L078-PL	c
BH101	None Supplied	W	2131674	c	Nitrite as N in water	L082-PL	c
BH101	None Supplied	W	2131674	c	Nitrite in water	L082-PL	c
BH101	None Supplied	W	2131674	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	2131675	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	2131675	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	2131675	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2131675	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	2131675	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	2131675	c	Nitrate as N in water	L078-PL	c
BH102	None Supplied	W	2131675	c	Nitrate in water	L078-PL	c
BH102	None Supplied	W	2131675	c	Nitrite as N in water	L082-PL	c
BH102	None Supplied	W	2131675	c	Nitrite in water	L082-PL	c
BH102	None Supplied	W	2131675	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	2131676	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	2131676	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	2131676	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2131676	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	2131676	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	2131676	c	Nitrate as N in water	L078-PL	c
BH103	None Supplied	W	2131676	c	Nitrate in water	L078-PL	c
BH103	None Supplied	W	2131676	c	Nitrite as N in water	L082-PL	c
BH103	None Supplied	W	2131676	c	Nitrite in water	L082-PL	c
BH103	None Supplied	W	2131676	c	pH at 20oC in water (automated)	L099-PL	c



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Analytical Report Number : 22-34541

Project / Site name: North Hyde Gardens **Samples received on:** 20/01/2022

Your job number: **Samples instructed on/** 21/01/2022
Analysis started on:

Your order number: **Analysis completed by:** 01/02/2022

Report Issue Number: 1 **Report issued on:** 01/02/2022

Samples Analysed: 3 water samples

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 22-34541
Project / Site name: North Hyde Gardens

Lab Sample Number				2144738	2144739	2144740
Sample Reference				BH102	BH101	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				6.00-6.00	6.00-6.00	5.00-5.00
Date Sampled				19/01/2022	19/01/2022	19/01/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

General Inorganics

pH	pH Units	N/A	ISO 17025	7.2	6.8	7.2
Sulphate as SO ₄	mg/l	0.045	ISO 17025	92.5	430	1250
Total Sulphur	µg/l	15	NONE	31000	140000	420000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH ₃	µg/l	15	ISO 17025	1300	540	5600
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	13.3	2.64	28.2
Nitrate as N	mg/l	0.01	ISO 17025	0.61	5.68	0.29
Nitrate as NO ₃	mg/l	0.05	ISO 17025	2.72	25.2	1.31
Nitrite as N	µg/l	1	ISO 17025	4.1	180	1.0
Nitrite as NO ₂	µg/l	5	ISO 17025	13	600	< 5.0
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	58	430	130
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	2.4	1.7	1.7

Carbonate as CaCO ₃ (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	450	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	450	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	1.74	< 0.01	0.55
Acenaphthylene	µg/l	0.01	ISO 17025	0.52	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	9.80	< 0.01	3.32
Fluorene	µg/l	0.01	ISO 17025	4.43	< 0.01	1.22
Phenanthrene	µg/l	0.01	ISO 17025	0.47	< 0.01	0.76
Anthracene	µg/l	0.01	ISO 17025	0.47	< 0.01	1.17
Fluoranthene	µg/l	0.01	ISO 17025	1.87	< 0.01	0.97
Pyrene	µg/l	0.01	ISO 17025	1.04	< 0.01	0.70
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	20.3	< 0.16	8.69
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Analytical Report Number: 22-34541
Project / Site name: North Hyde Gardens

Lab Sample Number				2144738	2144739	2144740
Sample Reference				BH102	BH101	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				6.00-6.00	6.00-6.00	5.00-5.00
Date Sampled				19/01/2022	19/01/2022	19/01/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Parameter	Units	Limit of detection	Accreditation Status	2144738	2144739	2144740
Calcium (dissolved)	mg/l	0.012	ISO 17025	110	700	580
Iron (dissolved)	mg/l	0.004	ISO 17025	0.14	0.074	0.061
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Mn (II)	mg/l	0.02	NONE	0.09	0.62	0.59
Mn (IV)	mg/l	0.02	NONE	0.73	4.18	1.53

Parameter	Units	Limit of detection	Accreditation Status	2144738	2144739	2144740
Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.02	39.1	4.17
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	1.3	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.4	4.9	7.5
Copper (dissolved)	µg/l	0.5	ISO 17025	3.2	620	6.0
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6.0	26	22
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.9	17	3.8
Zinc (dissolved)	µg/l	0.5	ISO 17025	11	12	15

Monoaromatics & Oxygenates

Parameter	Units	Limit of detection	Accreditation Status	2144738	2144739	2144740
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

Parameter	Units	Limit of detection	Accreditation Status	2144738	2144739	2144740
TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10

Parameter	Units	Limit of detection	Accreditation Status	2144738	2144739	2144740
TPH-CWG - Aromatic >C5 - C7 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	97	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	65	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	41	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS	µg/l	10	NONE	200	< 10	< 10

Gases

Parameter	Units	Limit of detection	Accreditation Status	2144738	2144739	2144740
Methane	mg/L	0.1	NONE	0.6	< 0.1	1.2

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 22-34541
Project / Site name: North Hyde Gardens

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025



Analytical Report Number : 22-34541
Project / Site name: North Hyde Gardens

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 22-34541
Project / Site name: North Hyde Gardens

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2144739	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	2144739	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	2144739	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	2144739	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	2144739	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	2144739	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	2144738	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	2144738	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	2144738	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2144738	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	2144738	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	2144738	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	2144740	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	2144740	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	2144740	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2144740	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	2144740	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	2144740	c	pH at 20oC in water (automated)	L099-PL	c

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Environmental Science

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Analytical Report Number : 22-37315

Project / Site name: North Hyde Gardens
Your job number:
Your order number:
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 02/02/2022
**Samples instructed on/
Analysis started on:** 03/02/2022
Analysis completed by: 14/02/2022
Report issued on: 14/02/2022

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Signed:

Joanna Wawrzeczko

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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



Analytical Report Number: 22-37315
Project / Site name: North Hyde Gardens

Lab Sample Number				2159893	2159894	2159895
Sample Reference				BH102	BH101	BH103
Sample Number				BH102	BH101	BH103
Depth (m)				6.00-6.00	6.00-6.00	5.00-5.00
Date Sampled				31/01/2022	31/01/2022	31/01/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

General Inorganics

pH	pH Units	N/A	ISO 17025	7.1	6.8	7.3
Sulphate as SO4	mg/l	0.045	ISO 17025	71.9	414	843
Total Sulphur	µg/l	15	NONE	24000	140000	280000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	2700	540	6200
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	18.8	3.99	30.9
Nitrate as N	mg/l	0.01	ISO 17025	0.31	4.01	0.31
Nitrate as NO3	mg/l	0.05	ISO 17025	1.35	17.7	1.35
Nitrite as N	µg/l	1	ISO 17025	< 1.0	210	< 1.0
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	680	< 5.0
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	74	310	110
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	2.3	17	5.3

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	1300	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	1300	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	0.72	< 0.01	0.70
Acenaphthylene	µg/l	0.01	ISO 17025	0.98	< 0.01	0.34
Acenaphthene	µg/l	0.01	ISO 17025	15.5	< 0.01	4.37
Fluorene	µg/l	0.01	ISO 17025	6.18	< 0.01	1.63
Phenanthrene	µg/l	0.01	ISO 17025	0.95	< 0.01	1.50
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.60
Fluoranthene	µg/l	0.01	ISO 17025	3.77	< 0.01	5.34
Pyrene	µg/l	0.01	ISO 17025	2.70	< 0.01	4.24
Benzo(a)anthracene	µg/l	0.01	ISO 17025	0.58	< 0.01	1.06
Chrysene	µg/l	0.01	ISO 17025	0.47	< 0.01	0.98
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.82
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.22
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.45
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	31.8	< 0.16	25.3
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Analytical Report Number: 22-37315
Project / Site name: North Hyde Gardens

Lab Sample Number				2159893	2159894	2159895
Sample Reference				BH102	BH101	BH103
Sample Number				BH102	BH101	BH103
Depth (m)				6.00-6.00	6.00-6.00	5.00-5.00
Date Sampled				31/01/2022	31/01/2022	31/01/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	130	560	470
Iron (dissolved)	mg/l	0.004	ISO 17025	0.033	0.056	0.088
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Mn (II)	mg/l	0.02	NONE	0.02	0.23	0.07
Mn (IV)	mg/l	0.02	NONE	1.44	4.84	2.64

Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.27	31.7	3.49
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	1.6	0.03
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.4	3.5	6.2
Copper (dissolved)	µg/l	0.5	ISO 17025	3.3	50	8.8
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6.1	12	15
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.4	8.1	2.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.7	4.2	8.2

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	50	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	600	< 10	60
TPH-CWG - Aromatic >C16 - C21 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	90	< 10	68
TPH-CWG - Aromatic >C21 - C35 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_ID_AR_#1_#2_MS	µg/l	10	NONE	740	< 10	130

Gases

Methane	mg/L	0.1	NONE	1.6	< 0.1	2.9
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U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-37315
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Analytical Report Number : 22-37315
Project / Site name: North Hyde Gardens

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Environmental Science

Analytical Report Number : 22-37315
Project / Site name: North Hyde Gardens

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	BH101	W	2159894	c	Ammonia as NH3 in water	L082-PL	c
BH101	BH101	W	2159894	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	BH101	W	2159894	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	BH101	W	2159894	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	BH101	W	2159894	c	Manganese II and IV in Water	L090-PL	c
BH101	BH101	W	2159894	c	pH at 20oC in water (automated)	L099-PL	c
BH102	BH102	W	2159893	c	Ammonia as NH3 in water	L082-PL	c
BH102	BH102	W	2159893	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	BH102	W	2159893	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	BH102	W	2159893	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	BH102	W	2159893	c	Manganese II and IV in Water	L090-PL	c
BH102	BH102	W	2159893	c	pH at 20oC in water (automated)	L099-PL	c
BH103	BH103	W	2159895	c	Ammonia as NH3 in water	L082-PL	c
BH103	BH103	W	2159895	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	BH103	W	2159895	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	BH103	W	2159895	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	BH103	W	2159895	c	Manganese II and IV in Water	L090-PL	c
BH103	BH103	W	2159895	c	pH at 20oC in water (automated)	L099-PL	c

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Analytical Report Number : 22-40962

Project / Site name: North Hyae Gardens
Your job number:
Your order number:
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 21/02/2022
**Samples instructed on/
Analysis started on:** 21/02/2022
Analysis completed by: 02/03/2022
Report issued on: 03/03/2022

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Signed:

Izabela Wójcik

Izabela Wójcik
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 22-40962
Project / Site name: North Hyae Gardens

Lab Sample Number	2180164			2180165	2180166
Sample Reference	BH101			BH102	BH103
Sample Number	None Supplied			None Supplied	None Supplied
Depth (m)	6.50			6.30	5.00
Date Sampled	17/02/2022			17/02/2022	17/02/2022
Time Taken	1013			1050	1113
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

	pH Units	N/A	ISO 17025	7.0	7.2	7.3
Sulphate as SO4	mg/l	0.045	ISO 17025	426	62.4	951
Total Sulphur	µg/l	15	NONE	140000	21000	320000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	510	2700	5800
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	18.7	34.1	44.9
Nitrate as N	mg/l	0.01	ISO 17025	3.92	0.22	0.16
Nitrate as NO3	mg/l	0.05	ISO 17025	17.4	0.99	0.73
Nitrite as N	µg/l	1	ISO 17025	180	< 1.0	2.7
Nitrite as NO2	µg/l	5	ISO 17025	580	< 5.0	8.7
Alkalinity as CaCO3 (titration)	mg/l	3	NONE	370	450	760
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	420	74	120
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	1.7	7.6	6.6

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	1600	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	1600	< 3.5
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Speciated PAHs

	µg/l	0.01	ISO 17025	5.12	113	4.99
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	1.13	0.20
Acenaphthylene	µg/l	0.01	ISO 17025	0.70	26.8	5.69
Acenaphthene	µg/l	0.01	ISO 17025	0.24	12.2	2.22
Fluorene	µg/l	0.01	ISO 17025	< 0.01	9.09	1.18
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	1.20	2.00
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	1.98	1.48
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.06	1.02
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	6.06	167	18.8
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Analytical Report Number: 22-40962
Project / Site name: North Hyae Gardens

Lab Sample Number	2180164	2180165	2180166
Sample Reference	BH101	BH102	BH103
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	6.50	6.30	5.00
Date Sampled	17/02/2022	17/02/2022	17/02/2022
Time Taken	1013	1050	1113
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status

Heavy Metals / Metalloids

Parameter	Units	Limit of detection	Accreditation Status	2180164	2180165	2180166
Calcium (dissolved)	mg/l	0.012	ISO 17025	690	130	490
Iron (dissolved)	mg/l	0.004	ISO 17025	0.060	0.056	0.067
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Mn (II)	mg/l	0.02	NONE	0.22	0.27	0.42
Mn (IV)	mg/l	0.02	NONE	5.59	1.23	2.03

Arsenic (dissolved)	µg/l	0.15	ISO 17025	41.6	2.72	2.75
Cadmium (dissolved)	µg/l	0.02	ISO 17025	2.2	< 0.02	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	5.1	5.5	5.2
Copper (dissolved)	µg/l	0.5	ISO 17025	66	8.5	8.2
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	29	5.6	11
Selenium (dissolved)	µg/l	0.6	ISO 17025	22	1.4	3.0
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.5	5.4	8.2

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_1D_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	260	< 10
TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	1200	150
TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	830	160
TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	97	50
TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS	µg/l	10	NONE	< 10	2400	360

Gases

Methane	mg/L	0.1	NONE	< 0.1	0.9	1.8
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U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-40962
Project / Site name: North Hyae Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanimide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Analytical Report Number : 22-40962
 Project / Site name: North Hyae Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 22-40962
Project / Site name: North Hyae Gardens

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2180164	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	2180164	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	2180164	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	2180164	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	2180164	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	2180164	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	2180165	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	2180165	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	2180165	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2180165	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	2180165	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	2180165	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	2180166	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	2180166	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	2180166	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2180166	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	2180166	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	2180166	c	pH at 20oC in water (automated)	L099-PL	c

DRAFT



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Analytical Report Number : 22-49632

Project / Site name: North Hyde Gardens
Your job number:
Your order number: 211423 CB
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 01/04/2022
**Samples instructed on/
Analysis started on:** 04/04/2022
Analysis completed by: 12/04/2022
Report issued on: 12/04/2022

DRAFT

Signed:

Martyna Langer
Martyna Langer
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 22-49632
Project / Site name: North Hyde Gardens

Your Order No: 211423 CB

Lab Sample Number	2226446			2226447			2226448		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied		
Date Sampled	Deviating			Deviating			Deviating		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	N/A	ISO 17025	2226446	2226447	2226448
pH	pH Units	N/A	ISO 17025	6.8	7	7.2
Sulphate as SO4	mg/l	0.045	ISO 17025	610	278	848
Total Sulphur	µg/l	15	NONE	200000	93000	280000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	290	2700	5300
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	3.37	17.9	27.9
Nitrate as N	mg/l	0.01	ISO 17025	6.12	0.15	0.15
Nitrate as NO3	mg/l	0.05	ISO 17025	27.1	0.68	0.68
Nitrite as N	µg/l	1	ISO 17025	210	< 1.0	6.2
Nitrite as NO2	µg/l	5	ISO 17025	680	< 5.0	20
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	330	66	180
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	3.2	6.4	4.6

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Parameter	Units	N/A	ISO 17025	2226446	2226447	2226448
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	120	960	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	120	960	< 3.5
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Speciated PAHs

Parameter	Units	N/A	ISO 17025	2226446	2226447	2226448
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.98
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	0.78	1.51
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	15.9	3.23
Fluorene	µg/l	0.01	ISO 17025	< 0.01	6.86	3.67
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	2.82	10.3
Anthracene	µg/l	0.01	ISO 17025	< 0.01	0.64	30.6
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	2.02	55.6
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.17	47
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	11.9
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	10.9
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	8.57
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.78
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	4.72
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.17
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.42

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	30.2	195
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Analytical Report Number: 22-49632
Project / Site name: North Hyde Gardens

Your Order No: 211423 CB

Lab Sample Number	2226446			2226447			2226448		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied		
Date Sampled	Deviating			Deviating			Deviating		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	750	190	440
Iron (dissolved)	mg/l	0.004	ISO 17025	0.16	0.03	0.081
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Mn (II)	mg/l	0.02	NONE	0.33	0.3	0.29
Mn (IV)	mg/l	0.02	NONE	4.56	1.14	1.39

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.63	1.68	2.03
Cadmium (dissolved)	µg/l	0.02	ISO 17025	1.7	0.04	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	5	3.7	3.6
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3	< 0.2	0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	18	7.3	15
Selenium (dissolved)	µg/l	0.6	ISO 17025	18	1.3	2.3
Zinc (dissolved)	µg/l	0.5	ISO 17025	9.5	1.9	14

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	7.4	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	7.8	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	5.9	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS_ID_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 _{HS_ID_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 _{HS_ID_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 _{EH_ID_AL_#1_#2_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 _{EH_ID_AL_#1_#2_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 _{EH_ID_AL_#1_#2_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 _{EH_ID_AL_#1_#2_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) _{HS+EH_ID_AL_#1_#2_MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 _{HS_ID_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 _{HS_ID_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 _{HS_ID_AR}	µg/l	1	ISO 17025	< 1.0	24	< 1.0
TPH-CWG - Aromatic >C10 - C12 _{EH_ID_AR_#1_#2_MS}	µg/l	10	NONE	< 10	30	< 10
TPH-CWG - Aromatic >C12 - C16 _{EH_ID_AR_#1_#2_MS}	µg/l	10	NONE	< 10	670	290
TPH-CWG - Aromatic >C16 - C21 _{EH_ID_AR_#1_#2_MS}	µg/l	10	NONE	< 10	530	370
TPH-CWG - Aromatic >C21 - C35 _{EH_ID_AR_#1_#2_MS}	µg/l	10	NONE	< 10	130	1800
TPH-CWG - Aromatic (C5 - C35) _{HS+EH_ID_AR_#1_#2_MS}	µg/l	10	NONE	< 10	1400	2500

Gases

Methane	mg/L	0.1	NONE	< 0.1*	1*	2.2*
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U/S = Unsuitable Sample I/S = Insufficient Sample
*Sample was delivered to Air Laboratory in deviating container and with headspace

Analytical Report Number : 22-49632
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Analytical Report Number : 22-49632
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 22-49632
Project / Site name: North Hyde Gardens

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2226446	a	None Supplied	None Supplied	None Supplied
BH102	None Supplied	W	2226447	a	None Supplied	None Supplied	None Supplied
BH103	None Supplied	W	2226448	a	None Supplied	None Supplied	None Supplied

DRAFT



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Analytical Report Number : 22-61613

Project / Site name: North Hyde Gardens
Your job number:
Your order number:
Report Issue Number: 1
Samples Analysed: 3 water samples

Samples received on: 27/05/2022
**Samples instructed on/
Analysis started on:** 27/05/2022
Analysis completed by: 09/06/2022
Report issued on: 09/06/2022

DRAFT

Signed:


Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 22-61613
Project / Site name: North Hyde Gardens

Lab Sample Number	2294582			2294583			2294584		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	6.50-6.50			6.50-6.50			5.00-5.00		
Date Sampled	26/05/2022			26/05/2022			26/05/2022		
Time Taken	1540			1510			1440		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

pH	pH Units	N/A	ISO 17025	6.8	7.3	7.2
Sulphate as SO4	µg/l	45	ISO 17025	298000	118000	636000
Sulphate as SO4	mg/l	0.045	ISO 17025	298	118	636
Total Sulphur	µg/l	15	NONE	99000	39000	210000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	220	3400	6200
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	6.61	20.2	35.8
Nitrate as N	mg/l	0.01	ISO 17025	1.71	0.24	0.35
Nitrate as NO3	mg/l	0.05	ISO 17025	7.57	1.04	1.57
Nitrite as N	µg/l	1	ISO 17025	36	< 1.0	< 1.0
Nitrite as NO2	µg/l	5	ISO 17025	120	< 5.0	< 5.0
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	94	68	120
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	< 1.0	5.9	18

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	920	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	920	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	1.76	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	6.84	13.7
Fluorene	µg/l	0.01	ISO 17025	< 0.01	2.15	6.39
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.91
Anthracene	µg/l	0.01	ISO 17025	< 0.01	1.47	0.68
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	1.44	1.27
Pyrene	µg/l	0.01	ISO 17025	< 0.01	0.96	0.76
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01



Analytical Report Number: 22-61613
Project / Site name: North Hyde Gardens

Lab Sample Number	2294582			2294583			2294584		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	6.50-6.50			6.50-6.50			5.00-5.00		
Date Sampled	26/05/2022			26/05/2022			26/05/2022		
Time Taken	1540			1510			1440		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	14.6	26.7
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Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	200	180	410
Iron (dissolved)	mg/l	0.004	ISO 17025	0.26	2.4	2.8
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	0.5
Fe3+	mg/l	0.2	NONE	< 0.20	2.27	2.26
Mn (II)	mg/l	0.02	NONE	1.47	1.87	1.45
Mn (IV)	mg/l	0.02	NONE	0.36	0.11	0.62

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.4	2.01	4.35
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.29	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.3
Copper (dissolved)	µg/l	0.5	ISO 17025	4.7	1.9	0.6
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	7.4	2.6	3.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	6.1	1.4	2.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.7	2.1	7.8

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_ID_AL	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_ID_AL_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_ID_AR	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	120	22
TPH-CWG - Aromatic >C16 - C21 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	36	< 10
TPH-CWG - Aromatic >C21 - C35 EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_ID_AR_#1_#2_MS	µg/l	10	NONE	< 10	160	22

Gases

Methane	mg/L	0.1	NONE	< 0.1	1.7	7.4
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U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-61613
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Analytical Report Number : 22-61613
Project / Site name: North Hyde Gardens

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 22-61613
Project / Site name: North Hyde Gardens

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2294582	c	Ammonia as NH3 in water	L082-PL	c
BH101	None Supplied	W	2294582	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH101	None Supplied	W	2294582	c	Biological oxygen demand (total) of water	L086-PL	c
BH101	None Supplied	W	2294582	c	Iron (II) and Iron (III) in water	L079-PL	c
BH101	None Supplied	W	2294582	c	Manganese II and IV in Water	L090-PL	c
BH101	None Supplied	W	2294582	c	pH at 20oC in water (automated)	L099-PL	c
BH102	None Supplied	W	2294583	c	Ammonia as NH3 in water	L082-PL	c
BH102	None Supplied	W	2294583	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	2294583	c	Biological oxygen demand (total) of water	L086-PL	c
BH102	None Supplied	W	2294583	c	Iron (II) and Iron (III) in water	L079-PL	c
BH102	None Supplied	W	2294583	c	Manganese II and IV in Water	L090-PL	c
BH102	None Supplied	W	2294583	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	2294584	c	Ammonia as NH3 in water	L082-PL	c
BH103	None Supplied	W	2294584	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	2294584	c	Biological oxygen demand (total) of water	L086-PL	c
BH103	None Supplied	W	2294584	c	Iron (II) and Iron (III) in water	L079-PL	c
BH103	None Supplied	W	2294584	c	Manganese II and IV in Water	L090-PL	c
BH103	None Supplied	W	2294584	c	pH at 20oC in water (automated)	L099-PL	c

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Analytical Report Number : 22-68744

Project / Site name:	North Hyde	Samples received on:	30/06/2022
Your job number:		Samples instructed on/ Analysis started on:	01/07/2022
Your order number:		Analysis completed by:	11/07/2022
Report Issue Number:	1	Report issued on:	12/07/2022
Samples Analysed:	3 water samples		

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Signed: _____

Joanna Wawrzeczek
Reporting 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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Analytical Report Number: 22-68744
Project / Site name: North Hyde

Lab Sample Number	2335358			2335359			2335360		
Sample Reference	BH101			BH102			BH103		
Sample Number	None Supplied			None Supplied			None Supplied		
Depth (m)	None Supplied			None Supplied			None Supplied		
Date Sampled	Deviating			Deviating			Deviating		
Time Taken	None Supplied			None Supplied			None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status						

General Inorganics

Parameter	Units	Limit of detection	Accreditation Status	2335358	2335359	2335360
pH	pH Units	N/A	ISO 17025	6.9	7	7.2
Sulphate as SO4	mg/l	0.045	ISO 17025	515	115	423
Total Sulphur	µg/l	15	NONE	170000	38000	140000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	310	3600	8200
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	4.99	19.9	37.1
Nitrate as N	mg/l	0.01	ISO 17025	2.52	0.33	0.69
Nitrate as NO3	mg/l	0.05	ISO 17025	11.2	1.45	3.06
Nitrite as N	µg/l	1	ISO 17025	39	7.2	11
Nitrite as NO2	µg/l	5	ISO 17025	130	24	36
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	120	78	130
BOD (Biochemical Oxygen Demand) (Total) - PL	mg/l	1	ISO 17025	1.1	6.6	6.2

Carbonate as CaCO3 (titration)	mg/l	10	NONE	< 10	< 10	< 10
Dissolved Carbon Dioxide	mg/l	1	NONE	< 1.0	< 1.0	< 1.0

Phenols by HPLC

Parameter	Units	Limit of detection	Accreditation Status	2335358	2335359	2335360
Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	2100	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	2100	< 3.5
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Analytical Report Number: 22-68744
Project / Site name: North Hyde

Lab Sample Number				2335358	2335359	2335360
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.93
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.77
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	13.1	2.33
Fluorene	µg/l	0.01	ISO 17025	< 0.01	6.43	1.72
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	3.95	4.12
Anthracene	µg/l	0.01	ISO 17025	< 0.01	0.61	11.6
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.87	29.2
Pyrene	µg/l	0.01	ISO 17025	< 0.01	0.43	24.4
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	5.46
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	5.6
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.05
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.11
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.56
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	25.4	91.8
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Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	440	250	390
Iron (dissolved)	mg/l	0.004	ISO 17025	0.1	0.14	0.23
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	0.2
Mn (II)	mg/l	0.02	NONE	1.8	2.46	1.24
Mn (IV)	mg/l	0.02	NONE	1.48	0.26	1.31

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.64	2.91	5.27
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.78	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	5	1.9	1.4
Lead (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	0.3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6.9	1.9	3.2
Selenium (dissolved)	µg/l	0.6	ISO 17025	10	1.6	2.9
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.2	2.7	5.9

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	9.3	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	2.7	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	1.5	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	4	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS 1D AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 _{HS 1D AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 _{HS 1D AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 _{EH 1D AL #1 #2 MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 _{EH 1D AL #1 #2 MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 _{EH 1D AL #1 #2 MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 _{EH 1D AL #1 #2 MS}	µg/l	10	NONE	< 10	< 10	< 10



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Analytical Report Number: 22-68744
Project / Site name: North Hyde

Lab Sample Number				2335358	2335359	2335360
Sample Reference				BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			
TPH-CWG - Aliphatic (C5 - C35) <small>HS+EH_ID_AL_#1_#2_MS</small>	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	9.3	< 1.0
TPH-CWG - Aromatic >C7 - C8 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	2.7	< 1.0
TPH-CWG - Aromatic >C8 - C10 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	8.5	< 1.0
TPH-CWG - Aromatic >C10 - C12 <small>EH_ID_AR_#1_#2_MS</small>	µg/l	10	NONE	< 10	< 10	30
TPH-CWG - Aromatic >C12 - C16 <small>EH_ID_AR_#1_#2_MS</small>	µg/l	10	NONE	< 10	790	150
TPH-CWG - Aromatic >C16 - C21 <small>EH_ID_AR_#1_#2_MS</small>	µg/l	10	NONE	< 10	770	170
TPH-CWG - Aromatic >C21 - C35 <small>EH_ID_AR_#1_#2_MS</small>	µg/l	10	NONE	< 10	90	130
TPH-CWG - Aromatic (C5 - C35) <small>HS+EH_ID_AR_#1_#2_MS</small>	µg/l	10	NONE	< 10	1700	480
Gases						
Methane	mg/L	0.1	NONE	< 0.1	3.9	7.5

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number : 22-68744

Project / Site name: North Hyde

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B.	L086-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-House method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08.	L078-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Analytical Report Number : 22-68744

Project / Site name: North Hyde

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Alkalinity in Water (by titration)	Determination of Alkalinity by titration (colorimetry).	In house method based on MEWAM & USEPA Method 310.2.	L025-PL	W	NONE
Gases C1-C4	Determination of volatile hydrocarbons by Refinery Gas Analyzer	In-house methods		W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025

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.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Analytical Report Number : 22-68744
Project / Site name: North Hyde

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-68744

Project / Site name: North Hyde

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	W	2335358	ab	BTEX and MTBE in water (Monoaromatics)	L073B-PL	b
BH101	None Supplied	W	2335358	ab	Gases C1-C4	None Supplied	b
BH102	None Supplied	W	2335359	ab	BTEX and MTBE in water (Monoaromatics)	L073B-PL	b
BH102	None Supplied	W	2335359	ab	Gases C1-C4	None Supplied	b
BH103	None Supplied	W	2335360	a	None Supplied	None Supplied	None Supplied

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a Colliers
Company.

**Appendix 5 – Extent
of Survey and
Limitations**

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Standard Limitations

Inspection and Concealed Parts: Our report will cover all parts of the site made available to us during our visual inspection of the property, which is normally and safely accessible without the use of ladders, and therefore exclude all ceiling, wall and floor voids unless stated within the report. Where inspection of roof areas by use of access hoists or a drone is required this will be agreed with you prior to inspection. The structure and fabric will not be opened up for further investigation. Those parts of the building and engineering services that are concealed, inaccessible or covered will not be inspected and confirmation that such parts are free from defects cannot be provided. Where we feel further investigation is merited, reference will be made in our report. Our services survey is based on a visual inspection and comment on the condition and the quality of the installation relating to normal good standards. We will specifically exclude tests relating to the performance of any heating, air conditioning or ventilation systems, pipe pressure tests, electrical or drainage tests. The omission of such tests might give risks to the fact that certain problems could exist which are not reflected in our report. No inspection or comment is made on the below ground drainage installations or service conduits unless instructed otherwise.

Occupied Buildings: Where buildings are occupied at the time of our inspection access to some areas may be restricted or denied although these areas will be noted in our report. Regardless of occupation, we will not lift fitted carpets, nor disturb any part of the fabric or fittings which are fixed or may cause damage.

Budget Costs: Where budget costs are included in our report, these costs are for guidance purposes only and will not be calculated from measured quantities but will be based on knowledge and experience of similar repair or replacement situations. Costs are inclusive of contractor's preliminaries but exclusive of all contingencies, professional fees and VAT. They will be based on current prices and no allowances will be made for inflation. Access costs for high level works will be included. There will be no allowances for loss or damage as a result of force majeure, terrorism, discovery or removal of any deleterious materials or out of hours working.

Specialist Sub-Consultants / Sub-Contractors: Where specialist consultants or contractors are engaged on your behalf. We may make reference to their findings in our report, but this should not be considered as a substitute for reading their report in its entirety, nor can we take responsibility for their conclusion.

Compliance with Legislation: In respect of planning permissions and building regulations consents we will review relevant documentation made available to us and liaise with your lawyers in this regard. If documentation is missing we will record this as a risk in our report, as should your lawyer. Our inspection will involve a review of the state of compliance with Statutory Requirements such as Workplace Regulations, Fire Regulations, Equality Act and other relevant matters. We will provide opinion and advise on these matters in our report. Please note that compliance with these Regulations often requires a more detailed specialist study and / or the preparation of a risk assessment. Such studies and risk assessments are beyond the scope of our report. Where appropriate we will make recommendations for further specialist surveys.

Weather conditions: Our inspection may be restricted by the prevailing weather conditions at the time of our inspection.

Communicable Disease – we shall not be liable in respect of any Claim, circumstance, loss or Defence Cost that arise as a result of, or is connected in any way, directly or indirectly with;

- a) A *Communicable Disease* or the fear or threat (whether actual or perceived) of a *Communicable Disease* regardless of any other cause or event contributing concurrently or in any other sequence thereto;
- b) any action taken to control, prevent, isolate, quarantine, suppress, mitigate or in any way relating to any actual or suspected outbreak of any *Communicable Disease* or the fear or threat (whether actual or perceived) of a *Communicable Disease*;
- c) instructions, orders, requests, restrictions or limitations given by any national or local government, regulatory or statutory body, health authority or organisation relating to any *Communicable Disease*.

A *Communicable Disease* means any disease which can be transmitted by means of any substance, medium or agent from any organism to another organism where:

- i. the substance, medium or agent includes, but is not limited to, a virus, bacterium, parasite or other organism or any variation thereof, whether deemed living or not, and
- ii. the method of transmission, whether direct or indirect, includes but is not limited to, airborne transmission, bodily fluid transmission, transmission from or to any surface or object, solid, liquid or gas or between organisms, and
- iii. the disease, substance or agent can cause or threaten damage to human health or human welfare or can cause or threaten damage to, deterioration of, loss of value of, marketability of or loss of use of property.

Deleterious and Hazardous Materials

Generally: Our report and survey excludes any investigation into the unsuitable use of deleterious or hazardous materials except in so far as such matters may come to our knowledge in the normal course of inspecting the property and state of repair. We will advise you if we consider there is a significant possibility that deleterious or hazardous materials exist at the property, although we will not undertake or commission specific inspections, laboratory testing or reports unless this possibility has been raised by us as a concern and further instructions received which in any event will be confined to the following: admixtures / aggregates in concrete, asbestos, brick slips, calcium silicate brickwork, high alumina cement, lead, urea formaldehyde foam, woodwool cement slab (used as permanent shuttering), aluminium composite panels, thin stone panels.

Many factors including location, use, design and quantity determine whether a material is deleterious or not and, therefore, the inclusion in the material in the above list does not, of itself, imply that it is deleterious.

Where composite cladding panels may be identified in our report we confirm that no intrusive testing will be undertaken to determine the type of insulation, classification of the insulating core or whether this is approved by the Loss Prevention Certification Board (LPCB) unless instructed otherwise.

Concrete: Where instructed to undertake a concrete investigation, our specialist report will be based on a visual examination of the concrete structure in sample test locations only. Whilst such test locations are chosen to be representative of the structure as a whole, we are not able to confirm that the structure is free from structural defects other than deleterious effect of HAC, chlorides and reinforcement corrosion durability.

Asbestos: Where instructed to undertake a specialist asbestos survey, we cannot guarantee that all asbestos containing materials will be identified, despite the best endeavours of our asbestos sub-consultant. Where instructed, every effort will be made to remove representative samples however it is possible that indiscriminate uses of asbestos may be present between sample locations of otherwise visually similar materials. An asbestos management survey is non-destructive and includes an inspection within accessible ceiling voids, above loose laid removable tiles, inside openable risers and cupboards, within accessible risers and behind removable casings.

Similarly access within lift shafts, live electrical equipment and mechanical plant may be restricted. A Refurbishment and Demolition asbestos survey is destructive and includes an inspection within accessible ceiling voids, above loose laid removable tiles, inside openable risers and cupboards, within accessible risers and behind removable casings. Representative areas of each element of building fabric will be intrusively opened up to inspect for the presence of ACM's behind built-in ducts, voids or similar enclosed or concealed areas within the building fabric. No intrusive work will be undertaken within the structural framework, concrete floors and masonry walls.

Mechanical and Electrical Surveys

Generally: Our survey and report is compiled under the brief to visually inspect and comment on the condition and the quality of the installation relating to normal good standards in the building services industry as dictated by CIBSE and IEE's current recommendations and standards without testing or dismantling of the plant. Where appropriate, we have provided an overview of the lift installations, which was carried out by the attending building services consultant.

Budget Costs: Any costs indicated within this report are based on our best assessment of the situation and the work involved at current prices and should not be taken as firm costs for the items of work detailed. To provide more accurate costs an investigation will be required in greater detail for individual items of the plant and systems, and may involve the employment of specialists where appropriate.

This overview provides a description of the lift services and general condition other than inspection of the lift shafts and associated equipment.

There are occasions when the building services will be inspected by a building surveyor rather than a mechanical and electrical consultant and we will advise within the fee quotation. In this case, if you require a survey by a mechanical and electrical consultant, you should confirm this prior to our inspection.

Concealed Parts: We have not inspected parts of the Engineering Services which are encased, covered up, or otherwise made inaccessible in a normal course of construction, alteration, or fitting out. We will not carry out any internal inspection of the plant/systems.

Design Analysis: No definitive calculations have been undertaken to determine the capacity or performance of the plant items, nor have performance tests been carried out on any of the systems or plant items. Design analysis of the systems has been undertaken using generally accepted design criteria both past and present, primarily to establish the principles of design. We have specifically excluded tests relating to the performance or efficiency of any heating, air conditioning, or ventilation systems, pipe pressure tests, electrical or drainage tests. The omission of such tests might give rise to the fact that certain problems could exist which are not reflected in this report. We would point out that during the course of our building services survey we did not carry out an inspection of the below ground services.

Deleterious & Hazardous Materials: Our report and survey excludes any investigation into structural engineering design, compliance with legislation relating to buildings, or the unsuitable use of high alumina cement or calcium chloride, calcium silicate brickwork, alkali-silicate reaction in concrete, cavity wall tie failure, radon gas seepage, woodwool slab permanent shuttering, asbestos or PCB's or other materials considered as deleterious in construction, except insofar as such matters may come to knowledge in the normal course of inspecting the materials and state of repair.

White Goods & Data: This report does not include an inspection of the white goods, catering and vending equipment, telecommunication, data or wireless systems installed within the property. We are unable to comment, advise or identify items that are reliant on day/date dependent embedded chips.

Pre Acquisition Survey

Compliance with Legislation: Our inspection will involve a general review of the state of compliance with Statutory Requirements such as the Building Regulations, Workplace Regulations, Fire Regulations, Equality Act and other relevant matters applicable within the relevant country. Please note that compliance with these Regulations often requires a more detailed specialist study and/ or the preparation of a risk assessment. Such studies and risk assessments are beyond the scope of our report.

Rights of Way / Support / Light

Where necessary we will comment on apparent rights of way / support or light which may be visible or suspected albeit our comments will be outline in nature and without any detailed investigations.

Environmental

Desk Based Risk Assessment: The risk assessment is dictated by the finite data on which it is based and is relevant only for the purpose of which the report is commissioned. If additional information or data becomes available which may affect the opinions expressed in our report, we reserve the right to review such information and, if warranted, to modify the risk assessment accordingly. We reserve the right to charge an additional fee for un-anticipated second opinion reviewing of previous reports.

The survey excludes intrusive opening up of the building fabric. Accordingly, an inspection is not undertaken behind built-in ducts, voids or similar enclosed or concealed areas within the structure and fabric.

Compliance with Legislation: The environmental risk assessment will be undertaken with due regard to Contaminated Land Guidance documents (available and relevant at the time of issuing our report) issued by (but not limited to) the Environmental Protection Act Part IIA 1990, Department for Environment, Food and Rural Affairs (DEFRA) and its predecessors, the Environment Agency (and its devolved equivalents), British Standards Institute (BSI), the Royal Institution of Chartered Surveyors (RICS) and the American Society for Testing and Materials (ASTM) Standard E 1527-00. No liability can be accepted for the effects of any future changes to such guidelines and legislation. In the event that guidance / legislation changes it may be necessary for Paragon to update or modify reports.

Content of Report: Our Phase I Environmental Audit will be based on a visual inspection of the site, a review of available historical and environmental setting records, consultations with site representatives, pertinent information provided from the client and regulatory consultations. No samples will be taken as part of this study.

Generic Risk Assessment: The risk assessment is dictated by the finite data on which it is based and is relevant only for the purpose of which the report is commissioned. If additional information or data becomes available which may affect the opinions expressed in our report, we reserve the right to review such information and, if warranted, to modify the risk assessment accordingly. We reserve the right to charge an additional fee for un-anticipated second opinion reviewing of previous reports.

The survey excludes intrusive opening up of the building fabric. Accordingly, an inspection is not undertaken behind built-in ducts, voids or similar enclosed or concealed areas within the structure and fabric. Where necessary we will comment on apparent rights of way / support or light which may be visible or suspected albeit our comments will be outline in nature and without any detailed investigations.

Phase 2 Site Investigation

Content of report: The content and findings of the report will be based on data obtained by employing site assessment methods and techniques, considered appropriate to the site as far as can be interpreted from desk based materials and a visual walkover of the site. Such techniques and methods are subject to limitations and constraints set out in the report. The findings and opinions are relevant at the time of writing, and should not be relied upon at a substantially later date as site conditions can change. For example, seasonal groundwater levels, natural degradation of contaminants etc. No liability is accepted for areas not covered by the investigation.

Risk Assessment: The opinions and findings conveyed via the report will be based on information obtained from a variety of sources as detailed by the report. The information should not be treated as exhaustive but is, in good faith, considered as representative as possible of the site conditions when considering constraints set out by the report. The risk assessment will be completed in line with current industry practices but is not a guarantee that the site is free of hazardous conditions. The risk assessment is completed in line with the relevant land use agreed for the site and the time of completing the works. Changes to site conditions or land use may require a reassessment.

Unforeseen Contamination: Where Paragon is responsible for directing the number and location of exploratory holes, it shall exercise all the reasonable skill, care and diligence to be expected of a properly qualified and competent member of the Consultant's profession experienced in performing such services, taking into account site conditions, and available knowledge, as well as access,

budgetary and scheduling constraints. Subject to having complied with the foregoing: (1) no liability can be accepted for the conditions that have not been revealed by the exploratory hole locations, or those which occur between each location and (2) whilst every effort will be made to interpolate the conditions between exploratory locations, such information is only indicative and liability cannot be accepted for its accuracy. By their nature, it is generally the case that exploratory holes provide a relatively small and localised snapshot of the ground conditions relative to the size of the site.

Buried Services: Whilst reasonable efforts will be taken to avoid buried services, we accept no liability for damage to services which have not been accurately identified in advance of site works.

Flooding: Our commentary is only based on the publicly available mapping available via the EA, NRW or SEPA at the time of writing and we cannot accept any liability where the information is updated following the issue of our report.

Dilapidations

Listed below are the limitations specifically applying to our dilapidations work and must be read in conjunction with our other Standard Limitations set out above.

Generally: We will assume unless otherwise requested that we are engaged as an advisor to prepare or comment on a schedule or claim which is distinct from an instruction to act as an expert witness. However, in discharging the advisory role it is always necessary for us to take account of considerations relating to expert witnesses as set out in the current Practice Statement and Guidance Note for Surveyors Acting as Expert Witnesses by the Royal Institution of Chartered Surveyors, a copy of which can be provided on request. This states that the primary function, and duty, of an expert witness is to assist the court on matters within their expertise.

Ongoing Advice: Our dilapidations advice aims to provide you with an informed opinion as to the anticipated level of liability/claim. Changes in case law, statute and the passage of time may affect the accuracy of our advice; it is therefore important that our advice is reviewed at regular intervals and, in particular, prior to the expiry of the lease.

Documentation Provided: Our assessments can only be as accurate as the information provided to us; it is therefore important that the most complete set of documentation possible is provided in order for the best advice to be given. We cannot take any responsibility for distorted findings resulting from deficient, incorrect or incomplete information.

Estimated Settlement: When an estimate of settlement is provided at any time prior to concluding the claim, this is for guidance only and should never be taken as a definitive evaluation of the likely damages which may fall due.

Final Settlement: Settlements can be limited by S.18(1) of the Landlord & Tenant Act 1927 and the common law principles to the diminution in the value of the Landlord's reversion, regardless of the cost of works and other heads of claim. We will advise you if we consider that a formal valuation (commonly known as a Section 18 valuation) is necessary.

A claim based on the cost of the works may also be capped or even extinguished if it can be shown that the premises are to be altered or demolished after the expiry of the lease. Landlords should advise us if this is the case. Again, we will advise you if we consider that a

Section 18 valuation is necessary. Where no formal release is provided by a Landlord we reserve the right to charge on a time expended basis.

Solicitors: In some cases it may be necessary to liaise with a solicitor on matters of strict legal interpretation. In the event of litigation, our communications with surveyors and other experts, including solicitors, may not be privileged.

Heads of Claim

Loss of Rent, Rates, Service Charge, etc.: For the purposes of the calculation of a loss of rent (and where applicable, service charge) claim we will provide an assessment of the period that it is likely to take to procure and complete works identified in the Schedule of Dilapidations. However, the applicability of such a claim will depend on market conditions prevailing at the end of the term and require initial input from your appointed letting agents shortly before lease expiry. Unless specifically agreed or stated within the lease, we will not include finance charges, loss of rates and other similar items in our assessments/claims.

Fees: We will include an allowance for legal fees only for the service of Schedules of Dilapidations in our assessments and claims. Surveyors' fees for the preparation and service of schedules will be included but other professionals' fees (such as building services or structural engineers) will not be included unless otherwise stated. All professional fees included will be estimates.

VAT: VAT may form part of a claim and is subject to the VAT status of the property and parties to the lease. The total claim (of which VAT may form part) is a damages payment that Customs and Excise do not deem a taxable supply. Invoices are not usually issued by landlords to tenants for this reason.

Contamination: We will include in our assessment any obvious contamination issues but we will not undertake any tests or investigation of current or previous uses of the site or adjoining land. We will advise you where we consider a need for specialist advice.

Energy Performance Certificates

The appointment of Paragon Building Consultancy Limited is subject to the Standard Limitations set out above. Listed below are some specific limitations relating to the provision of Energy Performance Certificates (EPCs).

Generally: This work is usually undertaken in three stages being:

1. Site inspection and research;
2. Data inputting and Calculating the Certificate; and
3. Lodging the certificate and reporting to the client.

We will initially determine the level of complexity of the building from the information provided by the client. Should it be determined during the site inspection that the complexity of the building and/or its services makes the standard assessment methodology inappropriate, this will be drawn to the attention of the client and a revised proposal will be submitted for sub-consulting the assessment to enable Dynamic Simulation Modelling (DSM) to be carried out.

Fees: Our fee quote is based on the assumption that the building can be inspected in one visit with unrestricted access to all areas. If we find that access is restricted to some parts of the building and that a return visit is required we will invoice all additional time on a time charge basis.

Where keys are held remotely from the property we will charge an additional fee on a time charge basis to cover our time in collecting and returning the keys. Where an instruction is made on the basis that plans are available the following applies:

- Plans must be to scale.
- Plans must accurately show the current layout of the premises.
- Plans must be provided at the time of appointment or before inspection.

Where plans are not immediately available and we are expected to recover them from other parties an additional charge may be made to cover our time in this regard.

Site Inspection: The nature of a building's construction will not always be obvious from a visual inspection alone. Where sectional details are not available we will use the inference values provided in iSBEM. Where these are poor and possibly have an effect on the banding/rating of the property we may advise the client to consider opening up elements of the property so that more accurate construction details can be obtained. Opening up works will fall outside the initial fee agreement and we reserve the right to invoice our time for this separately.

Lifespan/Carbon Checker: We will generate the EPCs using Lifespan. This system is a software application tool that provides an interface to enable the user to enter data into DCLG's SBEM (Simplified Building Energy Model). SBEM is at the heart of all government approved interface tools and whilst it has been passed for use, and Lifespan is an accredited software tool, there are inherent built in faults with the software that may affect the final rating. Although some tests have been undertaken to establish the accuracy of this software. We accept no responsibility for the software's accuracy.

Reporting and Advice: The EPC generates a Recommendations Report within which advice is given for the building owner to upgrade the building's efficiency performance. The advice is generic and in some cases is not considered to be relevant. Where we consider the advice to be poor, we will tailor the report to more accurately reflect the requirements of the building. The recommendations given in the report are not mandatory, so where a building owner implements improvement works based on the recommendations we would expect them to discuss the proposals in more detail before any expense is incurred.

Documentation Provided: We cannot take responsibility for the accuracy of any information provided by others for the purpose of carrying out the assessments. Similarly we cannot take responsibility where information to be provided is missing or its provision is delayed and that information conflicts with our assessment. Where such documents become available we recommend that copies are forwarded to us immediately in order that any advice provided can be refined.

Bank or Fund Monitoring

The appointment of Paragon Building Consultancy Limited is subject to the Standard Limitations set out above. Listed below are some specific limitations relating to the provision of bank or fund monitoring services.

Our report is based upon discussions with the borrower (being the person to whom our client, a funder, is lending money), as well as reports, records and data provided by the borrower or on their behalf ("Information"). We will use our professional judgement and experience to evaluate and interrogate the Information, however we are not auditing the Information and we cannot guarantee that it is accurate and complete in all respects. It is the borrower's duty to ensure that the Information is accurate and complete, and Paragon shall not be liable for any errors or omissions in the Information, or for losses arising as a result of such errors or omissions.

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