Technical Note

To Emma Peace	**Transmittal No** 2	**Project name** Net Zero Teesside / Northern Endurance Partnership	**Project number** 60675797
Client Net Zero Teesside / Northern Endurance Partnership	**Subject** Groundwater Monitoring Plan for PCC and Tod Point for Deposit for Recovery Permit	**Date** 23 January 2023	**Document ref** EPR-ZP3827SK-GWMP-R01

Groundwater Monitoring Plan

1. Introduction

Groundwater monitoring will be undertaken at the Post-combustion Carbon Capture (PCC) facility during and following the emplacement of soils under a Deposit for Recover (DfR) permit. This technical note has been prepared by AECOM Limited under project number 60675797 and outlines the proposed groundwater monitoring to be undertaken at the PCC Main Site and Tod Point over a 3+year monitoring period during recovery and permit surrender and includes:

- Groundwater monitoring network (Appendix A),
- Monitoring programme (Appendix B),
- Monitoring methodology (Appendix C),
- Laboratory analysis (Appendix D),
- Control Levels (Appendix E), and
- Data management, review and reporting.

It should be noted that no surface water monitoring is proposed at PPC Main Site due to there being no surface water receptors identified down hydraulic gradient of the Site. The ponds identified in the Environmental Statement[1] are either no longer present (dried up) or are surface water dependent i.e. there is no groundwater/surface water interaction.

No surface water monitoring is proposed at Tod Point due to The Fleet watercourse being culverted as it flows past Tod Point and as safe access could not be established along the watercourse to undertake monitoring.

2. Groundwater Monitoring Network

A summary of the proposed groundwater monitoring locations is presented in Appendix A. A total of 11 no. monitoring wells (8 no. at Main Site and 3 no. at Tod Point) are proposed to monitor groundwater levels and groundwater quality within the underlying aquifer, the Tidal Flat Deposits. This monitoring is to protect surface waters in the North Sea (Main Site) and Fleet (Tod Point).

3. Groundwater Monitoring Programme

A summary of the groundwater monitoring programme can be found in Appendix B. Details regarding data collection and laboratory analysis can be found in Sections 4 and 5 respectively.

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[1] AECOM prepared for Net Zero Teesside Power Ltd. and Net Zero North Sea Storage Ltd. 2022. DCO Environmental Statement: Volume 1. Chapter 9 Surface Water, Flood Risk and Water Resources. Document Reference: 6.2.

4. Monitoring Methodology

4.1 Health and Safety

All work must be undertaken in accordance with the requirements of the project Health, Safety and Environment Plan (HSEP).

4.2 Groundwater Level Monitoring

Groundwater levels of the appropriate monitoring wells will be measured using an interface probe. Once the probe reaches the groundwater, the depth can be read from the tape to 3 decimal places at the datum. The top of the well pipe will be used as the datum, or ground level if the borehole is flush with the ground.

Depth to the base of the well will also be recorded.

4.3 Sampling Procedures

The AECOM groundwater sampling methodology can be found in Appendix C. Any other parties completing the monitoring would follow this methodology. This will be subject to the following project-specific conditions:

- Purging using low flow methods will be undertaken at all well locations prior to groundwater sampling where there is sufficient groundwater present prior to obtaining water samples. Appropriate pump types will be used at different well locations to account for the depth of the well and the head of water within the well. Dedicated tubing will be used for each individual well.
- Groundwater levels will be measured prior to purging, during and post purging and following sampling. All measurements will be recorded.
- Purged water will be collected and stored onsite within the existing intermediate bulk containers for subsequent off-site disposal on completion of the sampling work as per the previous Long Term Monitoring (LTM) programme.
- Monitoring of water quality parameters will be undertaken during purging at five-minute intervals using a flow through cell for pH, electrical conductivity (µS/cm), oxidation-redox potential (mV), temperature (°C), and dissolved oxygen (mg/l) with a record of the field parameters obtained.

Purging to be continued until either:

1. stabilisation of the following criteria:
   - pH: ± 0.1
   - Electrical Conductivity (EC): ± 3%
   - Oxidation Reduction Potential (Redox/ORP): ± 10 mV
   - Dissolved Oxygen (DO): ± 10%
   - Temperature: 0.2ºC

or;

2. purging of one well volume if non-stabilised conditions, or;
3. purging has continued up to a maximum of 2 hours has passed in non-stabilised conditions and one well volume has not been reached.

Once the well has been purged, sampling will be conducted as soon as practicable following purging, and at a lower flow rate than used in purging. Prior to collecting the sample, the flow-through cell will be disconnected, and the sample collected directly from the purge tubing.

A fresh pair of nitrile gloves should be used at each borehole to prevent cross-contamination.

Samples will be collected with minimal turbulence and aeration into appropriately prepared bottles or vials supplied by the laboratory and should be free of air bubbles. Bottles containing samples for analysis of volatile compounds will be filled to the top including a meniscus before the cap is put on, in order to avoid the presence of air bubbles in the sample bottle.

Samples that need to be filtered on site (e.g. samples for analysis of metals, sulphide or cyanide) will be filtered using a filtration unit fitted with a dedicated sample-specific high capacity 0.45 micron filter and transferred to a plastic sample bottle, as supplied by the laboratory with appropriate preservative.

Sample bottles will be labelled using a unique identifier and stored in insulated cool boxes containing ice packs. A chain-of-custody form will be completed and kept with the samples, recording the sample type, sampling time, date and required analysis. This form will also be used to record the handover of the samples. All samples will be transferred by same-day or overnight courier to the laboratory (within 24 hours of sampling if volatile chemicals are being tested for) in the sealed insulated cool boxes.

4.4 Quality Assurance/Quality Control

Quality Assurance (QA) and Quality Control (QC) protocols will be implemented to demonstrate confidence in the data collected during the monitoring programme, with consideration of deviating samples resulting from long holding times, appropriate blank and duplicate sampling and analysis.

It is proposed to obtain:

- 1 no. duplicate sample per 20 wells per monitoring round, and
- 1 no. trip blank sample for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) per round.

Data collection is to be comparable at all stages of monitoring to allow for meaningful analysis prior to, during and following the emplacement of soils.

Field equipment will be checked to confirm it is in good working order before arriving at site and that it is calibrated as applicable (with reference to the relevant manual) prior to use. Calibration records will be saved. Where purging and sampling equipment is not dedicated or single-use, it will be decontaminated between sampling locations, before use.

4.5 Borehole Inspection and Maintenance

Regular inspection and maintenance of monitoring boreholes will be conducted throughout the monitoring programme and any damage will be reported to the Project to arrange maintenance. On arrival at each well its condition will be noted, specifically factors that may compromise or affect the quality of the groundwater sample to be collected (missing or damaged cover or cap, missing or damaged seal, surface spills or flooding). Well blockage, or evidence of silt build up in the base of the well will also be noted. The wells will be protected with concrete rings and three heras fence panels.

5. Laboratory Analysis

The chemical analysis suite and their limit of detection required for analysis can be found in Appendix D. The chemical analysis is to be undertaken at a UKAS accredited laboratory. To allow analysis results to be comparable with results from previous groundwater quality monitoring undertaken at the site, it is proposed to use the same laboratory, DETS or a similar, appropriately accredited laboratory.

6. Control Levels

The Control Levels have been assigned on a monitoring-well-specific basis based on long-term monitoring data. The control levels were calculated using the mean plus two standard deviations and can be found in Appendix E.

7. Data Management, Review and Reporting

Following its collection, field and laboratory data should be saved in a consistent format and subject to Quality Assurance/Quality Control and data validation.

The review of groundwater data is to include:

- QA/QC and validation i.e. comparison of the results compared to the analytical suite; checking the units reported are correct; are the LoD requirements met, have the holding times been exceeded etc.
- Screening of groundwater data against Control Levels.
- Identifying any issues, changes or revisions required to the monitoring programme.

The monitoring data should be reported to the Environment Agency on a basis specified by the Environmental Permit. An interpretive report will be produced annually and will include as a minimum: groundwater level data, groundwater quality data and trends, screening against control levels and summary of QA/QC checks. If required, it will also contain: identification of data gaps, changes to network e.g. well decommissioning/ monitoring frequency/ methodology or analytical suite; revision of control levels and mitigation and/or remedial measures.

All field monitoring records, equipment calibration certificates, and laboratory certificates of analysis must be kept providing an audit trail from defining the sampling programme through to reporting of results.

8. Decommissioning of Redundant Wells

Redundant boreholes, including those wells listed in the plan but no longer monitored, will be decommissioned in accordance with the Environment Agency Guidelines ‘Good practice for decommissioning redundant boreholes and wells’[2].

The redundant boreholes and wells will be decommissioned to prevent the borehole acting as a pathway for contamination of groundwater by infilling with appropriate low permeability material suitable for the ground and groundwater conditions. The top of the boreholes/ wells will be sealed to prevent entry of potentially contaminated surface run-off or other liquids.

Details of decommissioning will be recorded as per Environment Agency Guidelines[2] and reported in the annual monitoring report.

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[2] Environment Agency. October 2012. Good practice for decommissioning redundant boreholes and wells. (online) available at: https://www.stuartwells.co.uk/downloads/pdf/EAGuidelines.pdf

Appendix A: Groundwater Monitoring Network

Groundwater Monitoring Network

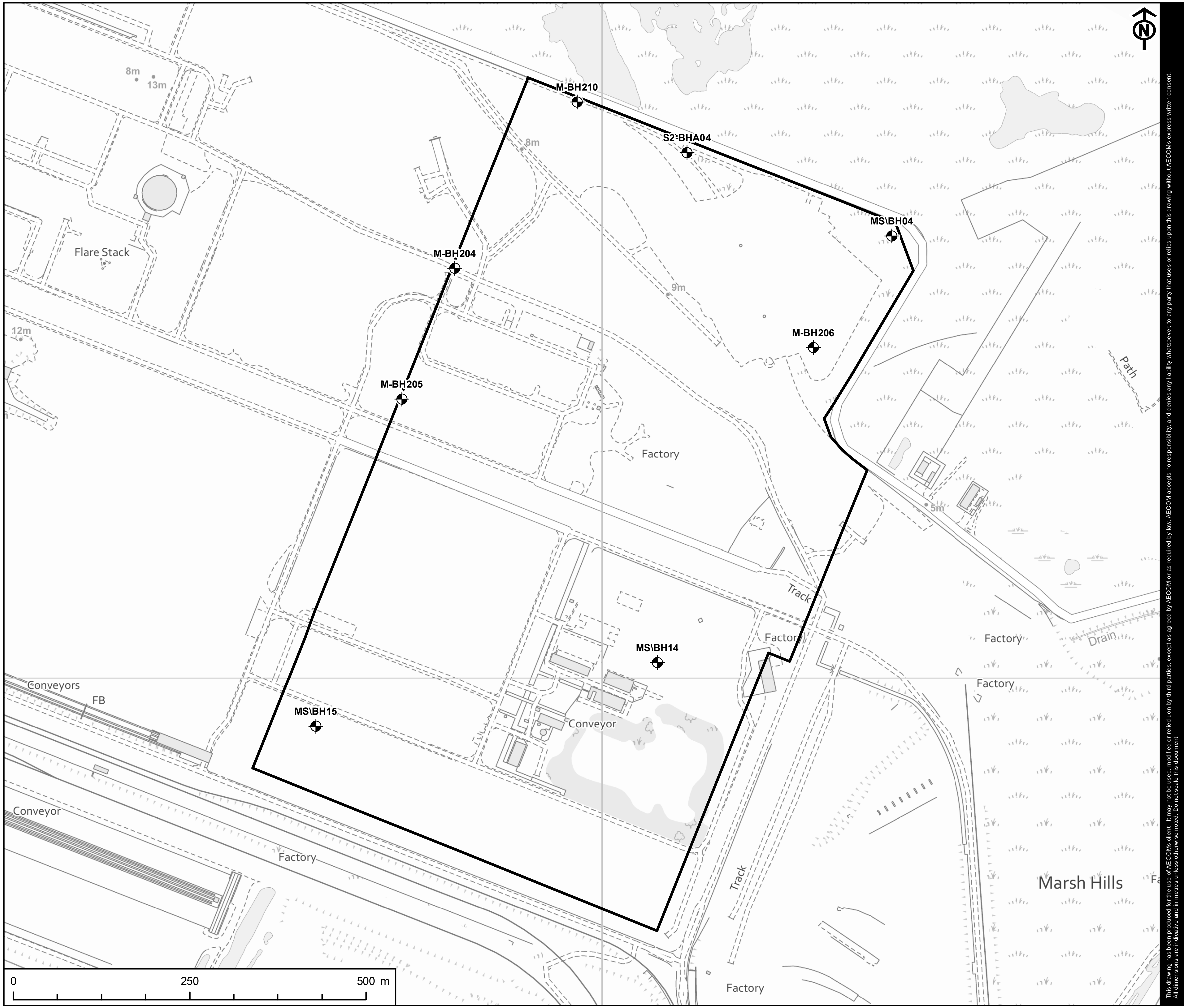
A summary of the proposed groundwater monitoring locations is presented in Table 1, with Drawings 1 and 2 depicting the sites of the new boreholes. A total of 11 no. monitoring wells (8 no. at Main Site and 3 no. at Tod Point) are proposed to monitor groundwater levels and groundwater quality within the underlying receptor, the Tidal Flat Deposits.

Table 1 Groundwater Monitoring Locations

Borehole ID	Location		Response Zone (m bgl)	Aquifer
	Easting	Northing		
Main Site				
MS\BH04S	457410.78	525626.54	4.29 to 7.29	Tidal Flat Deposits
MS\BH14	457078.83	525022.23	5.109 to 8.109	Tidal Flat Deposits
MS\BH15D	456595.24	524931.82	9.053 to 12.053	Tidal Flat Deposits
M-BH204	456791.42	525580.739	7.70 to 10.70	Tidal Flat Deposits
M-BH205	456717.144	525395.053	6.70 to 9.70	Tidal Flat Deposits
M-BH206S	457299.816	525468.288	7.70 to 10.70	Tidal Flat Deposits
M-BH210	456965.422	525815.866	7.70 to 10.70	Tidal Flat Deposits
S2-BHA04D	457120.7	525744.55	0.77 to 4.17	Tidal Flat Deposits
Tod Point				
M-BH207D	456982.094	523855.397	7.50 to 9.50	Tidal Flat Deposits
M-BH208D	457075.983	523919.676	9.30 to 10.50	Tidal Flat Deposits
M-BH212	457114.509	523888.49	7.50 to 8.50	Tidal Flat Deposits

m bgl – metres below ground level (Main Site: depths based on post-remediation ground level at of 7.3maOD)

Project Management Initials: SD Designer: LC Checked: AT Approved: SD



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AECOM

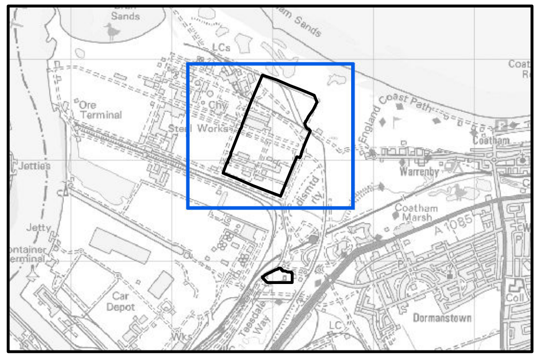
PROJECT
NET ZERO TEESSIDE PROJECT

Net Zero Teesside

APPLICANTS
NZT POWER LTD. AND NZNS STORAGE LTD.

KEY
▭ Installation Boundary
Proposed PCC Well
⊕ Borehole

NOTE:
All wells are screened in Tidal Flat Deposits.



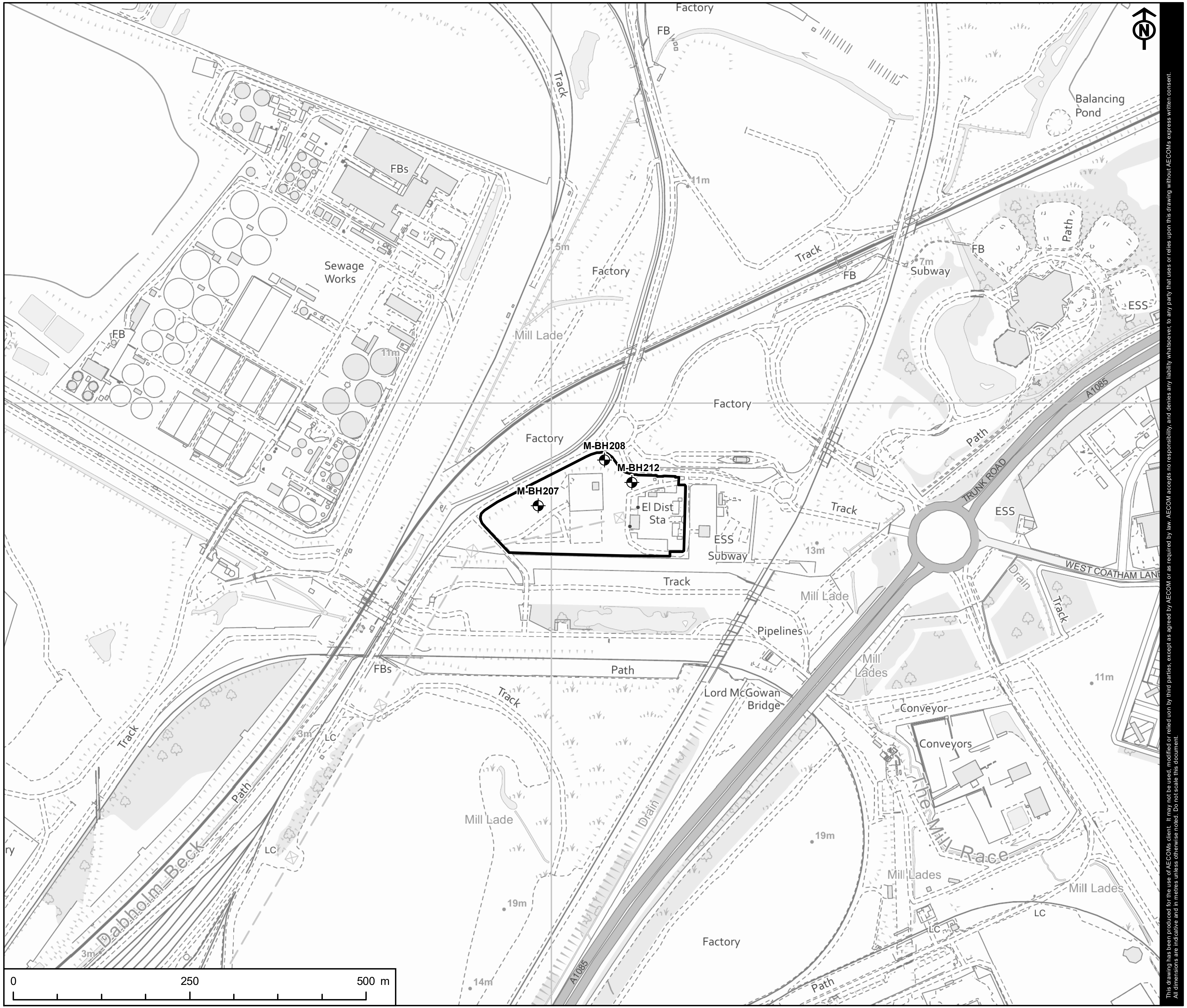
TITLE
PROPOSED SAMPLING LOCATIONS - NZT MAIN SITE

REFERENCE
NZT_GI_241203_P11_v3

SHEET NUMBER
1 of 2

DATE
03/12/24

Project Management Initials: SD Designer: LC Checked: AT Approved: SD



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AECOM

PROJECT

NET ZERO TEESSIDE PROJECT

Net Zero Teesside

APPLICANTS

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KEY

▭ Installation Boundary

Proposed PCC Well

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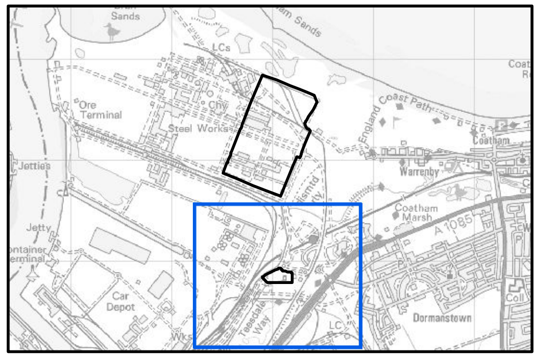
NOTE:

All wells are screened in Tidal Flat Deposits.



TITLE

PROPOSED SAMPLING LOCATIONS -
TOD POINT

REFERENCE

NZT_GI_241203_P11_v3

SHEET NUMBER	DATE
2 of 2	03/12/24

Appendix B: Groundwater Monitoring Programme

Groundwater Monitoring Programme

A summary of the groundwater monitoring programme can be found in Table 1.

Table 1 Groundwater Monitoring Summary

Monitoring Point	Frequency	Determinands
Main Site		
MS\BH04S	Quarterly during recovery and permit surrender. Estimate 3+ years.	In-field parameters: Depth to groundwater, depth to base of well, pH, Temperature, EC, DO, ORP Laboratory analysis: Suite as outlined in Appendix D.
MS\BH14		
MS\BH15D		
M-BH204		
M-BH205		
M-BH206S		
M-BH210		
S2-BHA04D		
Tod Point		
M-BH207D	Quarterly during recovery and permit surrender. Estimate 3+ years.	In-field parameters: Depth to groundwater, depth to base of well, pH, Temperature, EC, DO, ORP Laboratory analysis: Suite as outlined in Appendix D.
M-BH208D		
M-BH212		

EC – electrical conductivity, DO – dissolved oxygen, ORP – oxidation-reduction potential (Redox)

Appendix C: Groundwater Sampling Methodology

Groundwater Sampling Methodology

This document is not a health and safety risk assessment

APPLICABILITY

This document describes the standard field procedures used by AECOM Limited for sampling groundwater.

SAFETY

All work must be undertaken in accordance with the requirements of the project Health, Safety and Environment Plan (HSEP).

OBJECTIVES

The key objectives of groundwater sampling are:

- To obtain samples of groundwater that are representative of in-situ groundwater conditions.
- To minimise changes in groundwater chemistry during sample collection and handling.

STANDARD PROCEDURES

Pre-sampling

Obtain and review available information relating to the construction of the well (in particular its depth and the depth to the top of the screened interval), as well as data from previous gauging or sampling events. This will help guide equipment selection (e.g. length of dip meter tape) and provide an indication of what results might be expected.

To the extent practical, sampling should be planned so that the wells are sampled in order of increasing contaminant concentrations (if prior knowledge is available) in order to reduce the potential for cross-contamination.

Make sure all field equipment is in good working order before arriving at site and that it is calibrated as applicable (refer to equipment manual) prior to use. Where purging and sampling equipment is not dedicated or single-use, it must be decontaminated before use.

On arrival at a well, note its condition particularly any factors that may compromise or affect the quality of the groundwater sample to be collected (e.g. missing cap, cracked seal, surface spill). If wellhead gas monitoring is to be carried out, do this before groundwater gauging and sampling. To take headspace readings, insert the sampling tip of the PID (photo-ionisation detector) or FID (flame ionisation detector) or other instrument into the wellhead or onto the gas tap (if present) and record the maximum reading. Take care when removing airtight well caps in case there is sudden release of air or other vapours from inside the well casing.

Take care to prevent contact of purging and sampling equipment with the ground or with other potential sources of sample contamination.

Gauging of fluid levels

Measure the depth to water using an electronic water level indicator (‘dip meter’) or other suitable device. Fluid depths in any wells in which Non-Aqueous Phase Liquid (NAPL) has previously been detected or is suspected should be gauged using an electronic interface probe.

Once the dip meter or interface probe reaches the groundwater, the depth can be read from the tape to 3 decimal places at the datum. The top of the well pipe will be used as the datum, or ground level if the borehole is flush with the ground.

Depth to the base of the well will also be recorded.

Purging

Low flow purging

Only pumps that are able to minimize disturbance of the water in the borehole column should be used for low flow purging (e.g. peristaltic pumps or pneumatic bladder pumps). Inertial pumps, bailers and other grab samplers should not be used. The same pump should subsequently be used for sampling without removal to reduce the chance of mixing in the borehole.

The pump intake depth should normally be set by lowering it slowly into the well to a position midway within the saturated part of the screened interval. The precise depth is not critical because the sample that is obtained will be a flow-weighted average from the full saturated screen length of the well, irrespective of the intake depth. It is important to avoid unnecessary turbulence/mixing, which could mobilise sediment particles from the well screen or from the bottom of the well.

Wellhead parameters such as electrical conductivity, pH, temperature, turbidity and dissolved oxygen should be monitored during purging (e.g. at 5 minute intervals) using a flow-through cell. Attach a short piece of tubing to the outlet of the flow-through cell so that it empties into a bucket. Make sure the flow-through cell is stable and will not easily tip over while purging. Purging should be continued until (i) at least one well volume of water has been removed and (ii) the parameter values are approximately stable (see below). Document calibration of the water quality meter.

The groundwater level should be monitored during purging to check that it is stable. If the groundwater level continues to fall during purging, the purge rate should be reduced. If this is not possible the well

is not suitable for low flow purging and the sample that is obtained should be considered a ‘grab’ sample, or the well left to recover before sampling.

‘Traditional’ purging

Purge the borehole by pumping or bailing using dedicated or decontaminated equipment. Acceptable pumps for purging include pneumatic pumps, inertial, electric submersible, peristaltic, diaphragm and centrifugal pumps.

During purging, measure groundwater electrical conductivity, pH, temperature and turbidity (and, if appropriate, dissolved oxygen and redox potential) using a flow-through cell to assess changes in water quality with time and to check the degree to which they have stabilised prior to collection of the groundwater sample.

Continue purging until (i) at least 3 bore volumes of water have been removed, taking into account the water in the filter pack as well as water inside the well screen and casing, and (ii) wellhead parameters are approximately stable (see below).

Measure drawdown during purging. Where drawdown does not stabilise, dewater the well and, where the well-screen was initially fully saturated, allow water level to recover above the screened interval before sampling; otherwise allow water level to recover to 50% of static level before sampling.

‘No purge’ sampling

No purging is required.

Field parameter stabilisation

Purging under the volume purging method or the low flow method should continue until the differences between successive sets of field parameters, taken at intervals of at least 5 minutes or 0.5 well volumes, are within the following criteria:

- pH: ± 0.1
- EC: ± 3%
- Redox: ± 10 mV
- DO: ± 10%
- Temperature: 0.2ºC
- Turbidity: ± 10%

Groundwater sampling

If the well has been purged, sampling should be conducted as soon as practicable following purging, and at a lower flow rate than used in purging. Prior to collecting the sample, the flow-through cell should be disconnected, and the sample collected directly from the purge tubing.

If the sample is being collected using a ‘no purge’ sampling method, the manufacturer’s recommended methodology should be used for deploying the equipment and collecting the sample.

A fresh pair of nitrile gloves should be used at each borehole to prevent cross-contamination.

Samples should be collected with minimal turbulence and aeration into appropriately prepared bottles or vials supplied by the laboratory and should be free of air bubbles. Bottles containing samples for analysis of volatile compounds should be filled to the top including a meniscus before the cap is put on, in order to avoid the presence of air bubbles in the sample bottle.

Samples that need to be filtered on site (e.g. samples for analysis of metals, sulphide or cyanide) should be filtered using a filtration unit fitted with a dedicated sample-specific high capacity 0.45 micron filter and transferred to a plastic sample bottle, as supplied by the laboratory with appropriate preservative. On-site filtration is essential when the sample bottles contain preservatives, otherwise the preservatives may dissolve sediment from the sample and produce unrepresentative results.

Sample bottles should be labelled using a unique identifier and stored in insulated cool boxes containing bags of ice (water ice is much more effective than frozen blue ice packs). The ice should be present prior to sample collection and should be double-bagged to reduce the chance of water leakage into the cool box. A chain-of-custody form must be kept with the samples, recording the sample type, sampling time, date and required analysis. This form should also be used to record the handover of the samples. All samples should be transferred by same-day or overnight courier to the laboratory (generally within 24 hours of sampling if volatile chemicals are being tested for) in the sealed insulated cool boxes.

QA/QC Samples

QA/QC samples must be kept with the primary samples while on site and during transport to the laboratory. Various types and numbers of QA/QC samples may be required depending on the project scope and objectives. These include:

- Field duplicate and triplicate samples. These should be collected in the same manner and at the same time as the primary samples.
- Field blank and/or equipment blank samples. The aim of field blanks is to assess potential impact from field equipment that comes into contact with samples. Equipment blank samples aim to assess potential impact from non-dedicated equipment (e.g. dipmeter, interface probe, purging/ sampling pump) that comes into contact with samples. Water for field or equipment planks should be supplied by the laboratory if practicable; otherwise, potable water can be used but in that case a source blank should also be tested to check for the presence of background chemicals such as trihalomethanes.
- Trip blank samples. Where required (e.g. when volatile contaminants are being tested for), trip blanks will be supplied by the laboratory. Transport them to site in the cool box, keep them with the samples and then transport them back to the laboratory with the samples.

After Sampling

Replace well caps and locks and leave the area around the well in a tidy condition. Dispose of all wastes in an environmentally responsible manner. The following information to be recorded:

- Identification of sampling personnel;
- Identification of wells measured/sampled;
- Identification of equipment used (with serial numbers where applicable);
- Date and time of measurement, and sample collection if different;
- Weather conditions;
- Results of static water level measurements, including the thickness of NAPL, where present, and the depth to the base of the well;

- Deficiencies in the physical condition of wells and any pertinent observations of surrounding land-use (e.g. spills, chemical storage, vegetation die-back);
- Dip levels before and during purging;
- Purging/sampling methods and volumes;
- Confirmation of which samples were filtered on site;
- Visual and olfactory observations of water quality;
- Results of field water quality measurements; and
- Analyses to be performed.

Equipment Decontamination

Where purging and sampling equipment is not dedicated or single-use, it must be decontaminated between sampling locations.

Disposal of Purge Water

All purge water should be collected in suitable containers and disposed of appropriately and responsibly. Depending on the site facilities and on the location and likely quality of the water, appropriate disposal methods may include:

- Disposal to site effluent drains (with permission of site operator and if suitable treatment or consented discharge arrangements exist).
- Temporary storage in drums or other watertight containers for subsequent collection and on-site or off-site disposal at appropriate locations.

Appendix D: Laboratory Analysis

Laboratory Analysis

The following chemical analysis is to be undertaken at a UKAS accredited laboratory. To allow analysis results to be comparable with results from previous groundwater quality monitoring undertaken a site, it is proposed to use the same laboratory, DETS, or a similar, appropriately accredited laboratory. The following analytical suite is proposed.

The determinands and their limit of detection required for analysis are outlined in Table 1.

Table 1. Limit of detection and accreditation

Determinands	Limit of detection required	Accreditation by proposed laboratory
Inorganics		
Cyanide, Total	0.1 µg/l	UKAS
Ammoniacal Nitrogen as N	0.015 mg/l	UKAS
Ammoniacal Nitrogen as NH3	0.0183 mg/l	UKAS
Metals		
Aluminium	10 µg/l	UKAS
Arsenic	0.16 µg/l	UKAS
Cadmium	0.03 µg/l	UKAS
Copper	0.4 µg/l	UKAS
Lead	0.09 µg/l	UKAS
Mercury	0.01 µg/l	UKAS
Vanadium	0.6 µg/l	UKAS
Zinc	1.3 µg/l	UKAS
PAHs		
Naphthalene	0.05 µg/l	UKAS
Acenaphthylene	0.01 µg/l	UKAS
Anthracene	0.01 µg/l	UKAS
Indeno(1,2,3-cd)pyrene	0.01 µg/l	UKAS
Fluoranthene	0.01 µg/l	UKAS
Benzo(a)pyrene	0.01 µg/l	UKAS
Benzo(g,h,i)perylene	0.01 µg/l	UKAS
Benzo(b)fluoranthene	0.01 µg/l	UKAS
Benzo(k)fluoranthene	0.01 µg/l	UKAS

Appendix E: Control Levels

Control Levels

Proposed, provisional Control Levels for the five downgradient monitoring wells (four at Main Site and one at Tod Point) can be found in Table 1. The Control Levels for Main Site are based on available long term monitoring data for the wells located within the area remediated. Please note that long term monitoring data are currently unavailable for Tod Point.

For Main Site, monitoring will be ongoing in the ca. 6-month period between remediation finishing in October 2024 and construction starting, and through the early construction works, before waste recovery commences. The final Control Levels would be set based on the updated monitoring data prior to waste recovery starting. Control Levels are calculated using the mean plus two standard deviations.

For Tod Point, monitoring will be ongoing in the period between wells being installed in Q4 2024, and construction starting. The final Control Levels would be set based on the updated monitoring data prior to construction and/or waste recovery starting.

Table 1. Provisional Control Levels

Determinands	**Main Site**	**Tod Point**
	M-BH210, MS\BH04S, **S2 BHA04D, M-BH206S**	**M-BH207**
Inorganics		
Cyanide (µg/L)	634	TBD
Ammoniacal Nitrogen as N (µg/L)	9,478	TBD
Ammoniacal Nitrogen as NH_3 (mg/L)	14.5	TBD
Metals		
Aluminium (µg/L)	1,554	TBD
Arsenic (µg/L)	21	TBD
Cadmium (µg/L)	0.28	TBD
Copper (µg/L)	6.2	TBD
Lead (µg/L)	26.9	TBD
Mercury (µg/L)	0.41	TBD
Vanadium (µg/L)	55.6	TBD
Zinc (µg/L)	88	TBD
PAHs		
Naphthalene (µg/L)	4.10	TBD
Acenaphthylene (µg/L)	0.74	TBD
Anthracene (µg/L)	0.74	TBD
Indeno(1,2,3-c,d)pyrene (µg/L)	0.85	TBD
Fluoranthene (µg/L)	0.80	TBD

Determinands	Main Site M-BH210, MS\BH04S, S2 BHA04D, M-BH206S	Tod Point M-BH207
Benzo(a)pyrene (µg/L)	0.85	TBD
Benzo(g,h,i)perylene (µg/L)	0.75	TBD
Benzo(b)fluoranthene (µg/L)	0.79	TBD
Benzo(k)fluoranthene (µg/L)	0.75	TBD

TBD = to be determined

The Control Levels will be used to assess the monitoring data as follows:

- The concentrations recorded for each determinand in the laboratory analysis results for the samples collected from the wells listed in Table 1 will be compared to the Control Levels based on a three point moving average across three successive quarterly monitoring events.
- If the three point moving average concentration of an individual determinand exceeds the Control Level, that well will be re-sampled and tested for that specific determinand on a monthly basis for three months.

If the Contaminant of Concern (CoC) continues to exceed Control Levels following the additional monitoring outlined above, a Contingency Action Plan (CAP) will be developed and implemented in agreement with the Environment Agency and will include:

- Data for duplicate samples, sample holding times and laboratory quality control information will be reviewed to check that field and laboratory procedures are not influencing the results.
- Investigation: review of data, trends and spatial extent to characterise the issue:
  - Consideration of the well location relative to materials emplaced during construction deposit recovery plus also relative to emplaced material under the South Tees Development Corporation Local Enforcement Position (STDC LEP; as detailed in Remediation Verification Report[1]), relative to deeper un-remediated soils and groundwater remaining on-site (as detailed in Remediation Verification Report[Error! Bookmark not defined.] and Baseline Report (in progress)).
  - It will also consider the well location relative to any evidence of contamination of existing Made Ground / groundwater encountered during either the STDC remediation or the construction project.
- Undertaking additional targeted groundwater sampling and laboratory analysis and review of results.
- Conclusion on whether a rising trend is explained by the prior history of remediation, deeper un-remediated ground conditions and long-term groundwater trends relative to the well in question.

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[1] Land West of Warrenby – Teesworks. Remediation Verification Report For South Tees Development Corporation. Doc Ref: 10047374-AUK-XX-XX-RP-ZZ-970-02-LWW Remediation Verification. Rev: 02. November 2024.