

PART B

ATTACHMENTS

PRCP SCHEDULE

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Appendix 3 – Geotechnical Investigation Reports
Appendix 4 – Topsoil Survey Report
Appendix 5 – Contaminated Land Investigation Document

Chum Street Pty Ltd; ML 4553, ML 4559, ML 4714, ML 50077

Appendix 5 – Contaminated Land Investigation Document



Contaminated Land Investigation Document

Queensland Property Group, care of Ardent Group Pty Ltd

Former Claypave Mining Lease

Whitwood Road, Ebbw Vale

BCL220065.01

24 January 2024

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EXECUTIVE SUMMARY

Epic Environmental Pty Ltd (Epic) was engaged by Queensland Property Group (QPG), care of Ardent Group, to facilitate the removal of a section of the former Claypave Mining Lease (ML4559), legally described as Lot 25 on SP220030, from the Department of Environment and Sciences' (DES) Environmental Management Register (EMR). The EMR listing was inherited from the subdivision of Lot 1 on RP192649 (listed for the notifiable activity "Mineral Processing"). This Contaminated Land Investigation Document (CLID) presents the detailed site investigation (DSI) findings, evaluating land suitability for unrestricted use and confirming conformance with DES' criteria as outlined in DES (2015) *Guideline: Listing and removing land on the land registers* (ESR/2016/2044), version 1.03, effective 29 September 2015.

As part of these works, an investigation was completed consisting of:

- A desktop and site history review, supplemented by a site inspection, which identified four areas of potential environmental concern (AECs) which included:
 - Areas where overburden was backfilled into historic opencut mining voids (Area 1)
 - Coal fines stockpile and sediment pond (Area 2)
 - The waste disposal areas listed on the Environmental Authority (EPML00634213) for Claypave operations (Area 3)
 - The infilled tunnel portal and suspected waste disposal location (Area 4)
- Development of a Sampling, Analysis and Quality Plan (SAQP) (Epic, 2023a) based upon the desktop review and site inspection findings primarily targeting the AECs identified
- The completion of a DSI, consisting of:
 - Intrusive soil investigations to characterise the backfilled overburden material (Areas 1 and 4), stockpile areas (Area 2) and waste disposal location (Area 3), which consisted of:
 - 168 test pits to a maximum of 3 m below ground level (mBGL) systematically advanced across the site to laterally characterise soils
 - 20 soil boreholes to a maximum of 35 mBGL to vertically characterise the nature and depth of soils across the site
 - Characterisation of stockpiled soils through the collection of 12 samples
 - Surface gas emissions walkover
 - Two surface soil samples collected from areas of identified illegal fly tipping
 - Six groundwater bores were installed, with subsequent sampling of the groundwater conducted at four locations with sufficient water (three of these locations were the newly installed bores and one was a pre-existing off-site bore)
 - Collection of four sediment samples from the surface watercourses or areas of pooling across the site
 - Collection of two surface water samples co-located with the sediment samples from onsite water bodies
- Laboratory analysis of samples for the identified chemicals of potential concern
- Preparation of the DSI report as a CLID satisfying the requirements of the Environmental Protection Act (1994) section 389

Based upon the findings of the detailed site investigation, Epic was able to determine:

- Based upon the site history review, site inspection and intrusive investigations at the site, no notifiable activities are currently present on the site
- No evidence of waste disposal into the mine voids (Area 4) was identified in the locations investigated or samples analysed
- Soil, gas, groundwater and surface water sampling programs completed at the site have not identified chemicals of potential concern (CoPCs) above the land use criteria for human health (NEPM HIL-A/HSL-A and GIL), and ecological receptors (NEPM EIL/ESL and GIL) which would require further investigation

Based upon the findings of this DSI, it is considered that the site is suitable for unrestricted land use and suitable for removal from the EMR.

1 INTRODUCTION

Epic Environmental Pty Ltd (Epic) was engaged by Queensland Property Group (QPG), care of Ardent Group Pty Ltd (Ardent) for the provision of environmental services to facilitate removal of a section of the former Claypave Mining Lease (ML) (ML4559) on Whitwood Road, Ebbw Vale, land legally described as Lot 25 on SP220030 (the site, **Figure F1**) from the Department of Environment and Sciences' (DES) Environmental Management Register (EMR).

The site occupies a total area of approximately 36.24 ha and is located on Whitwood Road, Ebbw Vale. The site forms part of the former Claypave Mining Lease ML4559 and was previously used for coal mining by the Rylance Colliery, then subsequently used for clay mining for the former Claypave brickworks.

The site is listed on DES's EMR for the notifiable activity of 'mineral processing'. It is understood that the site has been included on the EMR following subdivision from Lot 1 on RP192649 which was listed for the notifiable activity of '*Mineral Processing – chemically or physically extracting or processing metalliferous ores*'.

Anecdotal information from the 1970s (Maunsell excerpt, **Appendix A**) indicated that the site was subject to the disposal of waste materials down a former mine shaft located within the southern portion of the site immediately west of the former mine portal (**Figure F3**) associated with the Rylance No. 5 Extended Colliery.

Following the sale of the site to Claypave, disposal of inert waste (**Section 2.2.2**) on the site was conducted in accordance with the EA EPML00634213.

1.1 Objectives and Purpose

The objective of the detailed site investigation was to determine whether the site is suitable for removal from the EMR in its current state or if remediation is required in accordance with the requirements of Section 389 of the *Environmental Protection Act, 1994* and Queensland DES's *Queensland Auditor Handbook for Contaminated Land Module 6: Content requirements for contaminated land investigation documents, certifications and audit reports* (May 2023).

The purpose of this CLID is to assess whether the condition of the land is suitable for any land use, and if the condition of the land is consistent with the policy criteria for removing land from the land registers as set out in DES's Guideline: Listing and removing land on the land registers (ESR/2016/2044).

1.2 Scope of Works

National Environmental Protection Measure (NEPM) suggests a staged approach to undertaking environmental assessment of a site, with the following stages recommended:

- Preliminary Site Investigation (PSI)
- Detailed Site Investigation (DSI)

A PSI and DSI have been completed and are reported in this investigation report. To achieve the objectives outlined above, Epic undertook a DSI in accordance with relevant legislation and guidelines as detailed in the following sections. These works included:

- Preparation of a Safe Work Method Statement (SWMS) and a Health, Safety and Environment Plan (HSEP)
- Liaison with the Contaminated Land Auditor (CLA) during works to ensure the investigation is completed to the CLA's satisfaction through review of the sampling, analysis and quality plan
- Completion of an intrusive soil investigation; groundwater monitoring event; paired surface water and sediment sampling; and surface gas emissions investigation
- Preparation of this CLID report documenting site investigation works

1.3 Regulatory Compliance

This CLID (investigation report) has been prepared in accordance with the requirements outlined in DES's *Queensland Auditor Handbook for Contaminated Land*, March 2023, the *National Environment Protection (Assessment of Site Contamination) Measure* (2013), the *Environmental Protection (EP) Act, 1994*, as amended

in 2023 and DES's *Guideline: Listing and removing land on the land registers* (ESR/2016/2044). Details of compliance with Section 389 of the EP Act (1994), as amended in 2023, are documented in **Section 1.6**.

1.4 Technical Framework

This CLID has been prepared with reference to and / or in general accordance with:

- Australian and New Zealand Conservation Council and Agriculture Resource Management Council (ANZECC). (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
- Australian and New Zealand Governments. (2018). *Australian and New Zealand Guidelines (ANZG) for Fresh and Marine Water Quality*. Canberra. Retrieved from waterquality.gov.au/anz-guidelines
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- Hazelton, P., & Murphy, B. (2016). *Interpreting Soil Test Results: What do all the Numbers Mean?* (3rd ed.). Clayton South: CSIRO Publishing.
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- Queensland. (2019). *Environmental Protection (Water and Wetland Biodiversity) Policy*.
- Queensland. (2023). *Environmental Protection Act 1994 (EP Act) and Regulations*.
- Queensland Department of Environment and Science. (2023). *Queensland Auditor Handbook for Contaminated Land: Module 6: Content requirements for contaminated land investigation documents, certifications and audit reports (V2.03)*.
- Standards Australia and Standards New Zealand. (1998). *Water Quality – Sampling Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples (AS/NZS 5567.1.1998)*.
- The National Environmental Protection Council. (2013). *The National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013 (NEPM)*.

It is noted that Australian Standard (AS) 4482.1 and 4482.2 was withdrawn on 9 February 2022. Relevant aspects have been replaced by existing guidelines, such as NSW EPA (2022).

1.5 Roles and Responsibilities

Epic was engaged by QPG, care of Ardent Group to perform the Regulatory Function of Suitably Qualified Person (SQP) in accordance with Section 564 of the EP Act (1994) including the preparation of a CLID in accordance with Section 389 of the EP Act (1994) (this report).

During the engagement of the project, Michael Kowalczyk, Senior Environmental Scientist at Epic, was the nominated SQP as indicated in **Table 1**, with the DES Approved Form provided. It is noted for the final submission of the CLID, Michael Kowalczyk was no longer employed by Epic Environmental and Charles Kosecki, Senior Environmental Scientist acted as the nominated SQP for the submission of this final CLID to DES.

Details of compliance with Section 389 of the EP Act (1994) are documented in **Section 1.6**.

The key persons relating to the project have been summarised in **Table 1** below.

Table 1. Key Personnel

Aspect	Details
Suitably Qualified Persons (SQP)	Michael Kowalczyk (Project Manager) Epic Environmental Pty Ltd And Charles Kosecki Epic Environmental Pty Ltd Conduct investigation works in accordance with the SAQP and the <i>Environmental Protection Act 1994, Queensland Auditor Handbook for Contaminated Land</i> .
Contaminated Land Auditor	Mark Stuckey Environmental Earth Sciences Perform Auditor function and issue Auditor Certification in accordance with the <i>Environmental Protection Act 1994, Queensland Auditor Handbook for Contaminated Land</i> .
Site Owner (Current)	Con Bassili Chum Street Pty Ltd 1 Chum Street, New Chum, QLD, 4303

1.6 Report Requirements

A copy of the Contaminated Land Investigation Document Approved Form detailing compliance with Section 389 (1) and (2) of the EP Act and the NEPM is provided during the submission to DES.

2 SITE IDENTIFICATION AND BACKGROUND

2.1 Site Identification and Layout

Site details have been summarised in **Table 2** below while the site location and locality is shown in **Figure F1**.

Table 2. Site Identification and Key Features

Category	Observation
Site Address	21 Whitwood Road, Ebbw Vale, QLD
Central Coordinates	27°60'98.2"S, 152°82'47.1"E
Local Government Authority	Ipswich City Council
Lot Description	Lot 25 on SP220030
Registered Site Owner	Con Bassili Chum Street Pty Ltd 1 Chum Street, New Chum, QLD, 4303
Current Zoning	Conservation (CON)/ Special Opportunity (SA30) (refer to Figure F2), proposed to be rezoned to enable low density residential development.
EMR/CLR Status	Listed on the EMR (EMR Site ID 87676) for Mineral Processing, but not on the contaminated land register (CLR) (copy of search results presented in Appendix C)
Site Area	362,400 m ² / 36.24 ha
Current Use	The site is currently vacant with the exception of a high voltage electrical easement in the eastern portion of the site. The central portion of the site comprises vegetation regrowth over overburden backfill. An ephemeral watercourse runs along the western boundary and along a portion of the south-eastern end of the site.
Previous Use	The site has historically been used for coal mining by the Rylance Colliery, then subsequently for clay mining for the former Claypave brickworks. The site is subject to former Mining Lease ML4559, granted to Claypave Pty Ltd for coal production between 1974 and 2026 (refer Appendix D).
Proposed Use	Low density residential
Planning Applications	The following applications are noted for the site: 10826/2022/RAL – Reconfiguring a Lot – Three (3) Lots into Two (2) Lots and creation of an access easement
Built Structures	The site is currently vacant and unoccupied. Permanent structures included high voltage pylons bisecting the eastern portion of the site within the electrical easement.
Services	A high voltage electrical easement is located in the eastern portion of the site, with three high voltage lines, their associated pylons and an access road (unsealed) running north north-east to south south-west through the site. A water easement, comprising a high-pressure potable water pipeline and a high pressure non-potable water pipeline, runs north north-west to south south-east immediately adjacent (outside) to the south-western portion of the site. A copy of site services plans and dial before you dig (DBYD) information is included in (Appendix E).
Surface and/ or Groundwater Usage	No groundwater or surface water users have been identified within the boundaries of the site. Two surface water pools have been identified on the site, one towards the western boundary edge and the other surface water body was towards the southern end of the site. Both surface water bodies have been excavated into the natural clay to an approximate depth of 1 to 2 m. The southern surface water body is believed to be a flooded clay pit, while the northern pond was likely to collect stormwater from the coal stockpiles. An ephemeral stream is located along the western side of the site and is intersected by the northern surface water body. The stream was not flowing at the time of the inspection or sampling and water is potentially only present during rainfall. Two groundwater monitoring bores were installed by Epic (2018) on the adjoining Lot 41 on SP264644 which were identified as part of the 13 registered bores located within a 1.0 kilometre (km) radius of the site. Notably, registered bore 173589 (~200 m south of the site) reported collapsed mine workings from 31.8 to 33 m below ground level (mBGL). Details on the surrounding registered bores can be found in Section 2.3.9.1 and Appendix F , with locations shown on Figure F3 . Groundwater from this bore was sampled as part of this investigation (PE01).

Category	Observation
Surface Covering & Vegetation	Ground surfaces within the electrical easement comprise grasses and occasional small shrubs with unsealed tracks. The other areas of the site were covered with grasses and eucalypt vegetation. See also Section 2.3.2 . Evidence of illegal dumping was observed adjacent to publicly accessible tracks as discussed in Section 2.6 .
Topography	Ground surface levels at the site slope towards a drainage channel (gully) located along the western border of the site. Elevation ranges from approximately 98 m Australian Height Datum (mAHD) reported in the eastern portion of the site to a low of approximately 50 mAHD reported along the western edge of the site. See also Section 2.3.5 .
Waste Management	The site is currently not active, and no waste materials are being generated or managed onsite, however, during the site inspection, areas of illegal dumping were noted in the southwestern, southern and northern boundaries of the site where site access tracks join to the adjacent residential developments. No fences or gates separate the site from these areas. Site observations are discussed further in Section 2.6 . Historic disposal of inert waste onsite is discussed in Section 2.2.2 , as well as previous waste management practices discussed in the Maunsell Excerpt (Section 2.4.3.1) and Section 2.4.4 . Illegal dumping consisted of general rubbish, white goods (fridge), foam insulation, and a crushed car body. Locations of observed illegally dumped material is identified in Figure F6 .
Historic Site Features	Historic site features included: • The former mine portal • The former mine buildings, including shafts and sheds • Historic open pit excavations • Historic underground mine workings associated with the Rylance Colliery These were identified as part of the site history review and are discussed further in Section 2.4 while the approximate locations are identified in Figure F6 .

2.1.1 Site Surrounds

The predominant land uses in the surrounding area are mining and waste management (landfill), low-density residential, and mixed-use commercial. Land zoning in the areas surrounding the site are presented in **Figure F2** with a summary of surrounding uses presented below:

- **North:** The land immediately north of the site is low density residential/ mixed-use commercial and the Ebbw Vale Memorial Park sports fields, with Brisbane Road (~300 m) beyond, followed by industrial lots including a timber and laminated product fabrication and surface coating manufacturers further north (~700 m). The Bremer River is located approximately 3.5 km north of the site and discharges into the Brisbane River, approximately 4.5 km north-east of the site;
- **East:** The Cunningham Highway lies along the sites' eastern boundary, beyond which lies a mixture of undeveloped vegetated land and current landfilling operations (Cleanaway New Chum Landfill). Land to the east of the site is subject to Mining Lease ML50176, granted to Transpacific Waste Management Pty Ltd for mineral production between 2002 and 2022;
- **South:** To the immediate south lies Lot 41 of SP264644 which was investigated and cleared of contamination in 2018 by Epic (2018), and beyond that, low density residential housing; and
- **West:** To the west lies low density residential housing which makes up the greater Ipswich area, and the Bremer River which lies approximately 5.5 km to the west of the site.

2.2 Regulatory Authorities

2.2.1 EMR/CLR Status

Following a search of the Queensland Government's EMR and CLR the site was identified on the EMR for the notifiable activity of 'Mineral Processing'. It is understood that the site has been included on the EMR following subdivision from Lot 1 on RP192649 which was listed for the notifiable activity of '*Mineral Processing – chemically or physically extracting or processing metalliferous ores*'.

The site was not identified as being listed on the CLR. A copy of search results from the EMR and CLR search are presented in **Appendix C**.

2.2.2 Environmentally Relevant Activities

A review of the Environmental Authority (EA) database (QLD Government, 2023) on 1 April 2023 for sites undertaking Environmentally Relevant Activities (ERA) identified the site to be operating under an EA EPML00634213 issued on 14 December 2018 for ERA 3 – 20(a) – clay pit mining within the mining lease ML4559. The EA detailed onsite waste disposal requirements in Schedule E which is discussed further in **Section 8**, which discusses the findings of the investigation works completed within the clay pit. A copy of EPML00634213 is provided in **Appendix H**.

A search of EAs within 500 m surrounding the site identified the following ERAs:

- Adjoining Lot 27 on SP220033 and Lot 2 on SP207444 (associated with the former Claypave Mining lease) also operating under an EA for:
 - ERA 3 – 20(a) – Clay pit mining
- Lot 271 on SP207443 (associated with the former Claypave Pavers and Brick and mining lease) operating under an EA for:
 - ERA 42: Clay or ceramic products manufacturing
 - (b): Manufacturing clay or ceramic products: >5,000t/yr
 - ERA 60: Waste disposal
 - 2 (a): >50t but <2000t yr
 - ERA 15: Fuel burning; Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour
 - ERA 3 – 20(a) – Clay pit mining
- Lot 274 on SP2077442 (associated with the New Chum Landfill south-east of the site) operating under EAs for:
 - ERA 3 – 20(a) – Clay pit mining
 - ERA 16 – Extraction and screening
 - 2(b): Extracting rock or other material: >100,000 – 1 million t/yr
 - 3(a) – Extraction and screening: Screening rock or other material: 5,000 – 100,000 t/yr
- Lot 268 on SP103913 (also associated with the New Chum Landfill):
 - ERA 54 – Mechanical waste reprocessing:
 - 1 – Operating a facility for receiving and mechanically reprocessing inert, non-putrescible waste or green waste only: >5,000 t/yr
 - 2(c) – Operating a facility for receiving and mechanically reprocessing general waste: >10,000 t/yr
 - ERA 60 – Waste disposal
 - 2(h) – Waste disposal facility (any combination of general waste and no more than 10% limited regulated waste): >200,000 t/yr
 - ERA 62 – Resource recovery and transfer facility operation; 1(b):
 - Operating a facility for receiving and sorting, dismantling, bailing or temporarily storing scrap steel, non-putrescible waste or green waste only

A notice for the completion of an environmental evaluation was issued to Cleanaway Solid Waste Pty Ltd who operate a landfill facility approximately 500m to the west of the site.

Following the sale of the site to Claypave, the following waste management activities onsite were primarily the stockpiling of clay and the disposal of inert waste in accordance with the EA EPML00634213. The onsite disposal of material was restricted by the EA to inert waste from the brickwork's operation (E3-1) which was limited to:

- Clay and shales
- Broken bricks and grog (crushed brick)
- Old refractories
- Kaowool (mineral wool)

The EA limited the disposal of this waste to the area onsite shown in **Figure F6**. The visual inspection of the material and the intrusive works in the area indicated that waste material present was consistent with these restrictions as discussed in **Section 2.6**.

2.2.3 Defence UXO Database

A search of Department of Defence unexploded ordnance (UXO) database was completed for the site, with no areas highlighted as potentially containing unexploded ordnance identified within 500 m of the site.

2.3 Site Environmental Setting

2.3.1 Climate and Meteorology

The climate within the area is sub-tropical with higher rainfall between December and March, resulting in warm wet summers and dry mild winters. Regional meteorological data has been sourced from the Bureau of Meteorology (BOM) (2022 (www.bom.gov.au, accessed 08-09-2023) for the Amberley weather station. The mean maximum and minimum monthly temperatures and mean monthly rainfall are presented in **Table 3**.

Table 3. Average Monthly Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Temp (°C)	31.2	30.5	29.4	27.2	24.1	21.6	21.3	22.9	25.7	27.8	29.7	30.9
Min Temp (°C)	19.6	19.5	17.8	14.0	10.0	7.0	5.4	6.2	9.5	13.3	16.3	18.4
Rainfall (mm)	116.2	125.0	88.0	53.1	54.9	45.7	37.4	27.9	33.2	74.3	79.7	118.6

Notes:

1. RED indicates maximum value in the series.
2. BLUE indicates minimum value in the series.
3. Data sourced from the Amberley weather station (weather station 040004).

2.3.2 Vegetation

The majority of the site is covered by regrowth vegetation on areas previously mined with a combination of native and exotic species located throughout the site. The powerline easement is covered with small shrubs and grasses. Mature eucalypt species were observed along the southern and eastern margins of the site, consistent with the historic aerial photographs indicating minimal disturbance in these areas.

2.3.3 Matters of State Environmental Significance

Review of Matters of State Environmental Significance (MSES) mapping accessed through Queensland Globe in December 2022, indicated the site is subject to multiple MSES as shown in **Figure F5**. Of note is the essential koala habitat and regulated vegetation (category C endangered or 'of concern') vegetation area which intersects the northern boundary of the site and the regulated vegetation (category A or B, endangered or 'of concern') which intersects the eastern border of the site.

2.3.4 Environmentally Sensitive Areas

A request for information relating to environmentally sensitive areas (ES Areas) was submitted to the DES on 10 November 2023. Review of the Environmentally Sensitive Areas – Mining Activities Map indicated that the site contains Category C – River Improvement Areas. No other areas were identified from Category A or Category B. A copy of the ESA search result is provided in **Appendix U**.

2.3.5 Topography

The site has undulating terrain with the natural landscape heavily modified from mining operations. It now generally slopes towards the west with the eastern plateau sloping from 98 mAHD to 50 mAHD. Ground surface levels at the site slope towards a drainage channel (gully) located along the south-western border of the site, from highs of approximately 98 mAHD reported in the eastern portion of the site. The drainage

channel runs in a north-south direction through the site along the western boundary, with a low of approximately 50 mAHD.

Site topography is shown in **Figure F1**.

2.3.6 Earthworks

The site is heavily modified from former mining operations associated with the open cut mining, with estimated extents of the disturbance shown in **Figure F7**. These areas contain a significant amount of fill (>31.5m in depth) which anecdotal evidence claims to be sourced from the historic overburden from mining operations used to backfill excavations.

Open cut operations are evident in all historic aerals from 1971 until the cessation of mining operations (**Section 2.4.2** and shown in **Figure F4**) indicating fill materials are present on site including potential mine spoil. A geotechnical investigation by Butler Partners (2022) across the former mining areas confirmed that material was consistent with expected overburden material and was relatively homogenous to depth, with fill material identified up to depths greater than 31.5 m MBGL at borehole 70.

In addition to the open cut operations, historic underground workings were present within the southwest portion of the site. The depth of these working is unclear as they were never formally surveyed, however GW01 intersected the potential underground workings between 30.5 – 32.5 mBGL (**Section 6.1.1**).

No wastes were reported in any of the geotechnical logs, with the exception of ash reported in TP21, however it is unclear as to what the nature of the ash was (i.e. furnace ash or coal fines). Subsequent intrusive site investigation works did not identify waste material and ash material was not identified (discussed **Section 6.1.1**).

A copy of the geotechnical report and corresponding logs are presented in **Appendix I**.

2.3.7 Hydrology and Drainage

Two surface water bodies have been identified on the site, one toward the western boundary edge with levels that fluctuate between historical aerial photographs indicating its connection to an ephemeral surface water channel, whereas the southern water body toward the southern end of the site appear to stay at a relatively uniform water level through the years, likely from the result of accumulated rainfall in open excavations. The depths of the water bodies are estimated between 1-2 m.

No stormwater management network was identified on the site, with site drainage expected to be consistent with site topography (**Figure F1**) either infiltrating into the soils or flowing via overland flow to the ephemeral channel running along the western boundary of the site. This channel is estimated to flow from the south to north when flowing towards the Bremer River which is approximately 3.5 km north of the site.

A search of the Ipswich City Council Major Flood Information Map 51 (2015) did not identify the site as having been historically flooded and is not located within the 1 in 20 flood planning mapping overlay indicating a low probability of future river flooding events.

2.3.8 Soils and Geology

With reference to Queensland geological mapping (State of Queensland, 2022), the site is mapped as being mainly underlain by the Blackstone Formation (part of the Ipswich Coal Measures), a formation 240 m thick composed of mudstones, fluvial sandstones and seven coal seams (4 – 10 m thick) dating to the late Triassic period and deposited in a lacustrine environment. Economic coal seams of interest present in the area included (descending stratigraphic order) Bluff, Four Foot, Bergin's, Striped Bacon and Rob Roy. The southern end of the site is underlain by the Tivoli Formation (Particularly the Cooneana Sandstone member also part of the Ipswich Coal Measures) comprised of shale, sandstone, economic coal seams, siltstones and some conglomerates.

Overburden material produced during the mining operation within the area is expected to comprise of sedimentary units associated with the Blackstone formation and Tivoli formation which would overly, interbed

and underly the target economic coal seams. This material would likely constitute mudstones (and associated clay), shale, siltstone, and sandstones (and associated sands and gravels).

Drilling was completed by the Queensland Department of Mines (now Department of Resources, DoR) in 1964 in the area surrounding the former colliery. Within the report faults were identified through the No. 5 Colliery which indicated that the underground working was limited by the normal fault running approximately northwest through the site which had a downward displacement of up to approximately 24 m (80 feet) to the west. This fault is believed to have marked the boundary between the open cut operations and previous underground workings (No. 5 extended workings) with underground workings being reported to terminate against this fault. As such, it is expected that the open cut workings would have targeted the upthrown Rob Roy, Striped Bacon or Four Foot seams beneath the uplifted hills. These hills were visible prior cut mining in historical aerial photographs (**Section 2.4.2**). Due to the throw from the faults bisecting the site, which resulted in the separation of the seams targeted by the underground mined and open cut operations, it is not expected that the coal seams are connected. As such, the base of the open cut operation is unlikely to be continuously connected to the underground workings.

From historic geological mapping, it was determined that the Blackstone formation dips to the south (between 2 to 35°) in the eastern areas of the site, and to the north (between 3 to 28°) in the western areas of the site, likely complicated by the Bundamba anticline and local normal faults.

Because of the mixture of mudstone and shale with sandstones and coal seams, the associated natural soils are expected to be hard setting surface horizons over red-yellow mottled clay subsoils. This is confirmed by soil mapping, indicating the site is classified as dominantly hard pedal mottled-red duplex soils at the northern end of site (Butler Partners, 2022). These soils are understood to have been the target of mining activities by the former Claypave operation.

Due to the relative elevation and geology of the site, acid sulfate soils are not expected to be encountered, which is consistent with maps available in Queensland Globe (Queensland Government, 2020).

2.3.9 Hydrogeology

With reference to the 1:2,500,000 map of Groundwater Resources of Queensland, the site is located in an area reporting very low bore yield of <5 L/s with sedimentary strata and considered marginal for human consumption and suitable for most stock and some domestic and irrigation purposes. Groundwater flow is likely to be complicated by the former mining operations, faults and topography. In general, it is expected that groundwater within the coal seams will generally flow to the north, or south in line with the dip direction of the geology (**Section 2.3.8**).

A previous investigation completed by Epic (2021) at the property located south of the site (detailed in **Section 2.4.3**) included the installation of two groundwater bores. The results from the site indicated that the groundwater at the site is anticipated to flow in a northerly direction towards the Bremer River. In general, the groundwater encountered beneath the property to the south was observed to be alkaline to neutral (pH 7.1 – 12.1) and saline (EC 8,688 – 12,248 µS/cm).

Additionally, in-situ permeability testing was completed at the site with results indicating that the uppermost aquifer consisting of a coal seam and underlying shale between 10 and 17 mBGL at the site had a low hydraulic conductivity (0.19-0.41 m/day), typical of weathered rock profiles. Results for the bore installed in underground workings (approximately 32 mBGL) indicated a higher hydraulic conductivity (3.5-7.8 m/day).

2.3.9.1 Registered Bore Search

The Queensland Government Natural Resources and Mines data available on the Queensland Globe provides a map of groundwater bores that are in proximity to the site. A search conducted on 30 September 2023 identified 13 registered bores within a 1.0 km radius of the site, details of which are summarised in **Table 4** and shown in **Figure F2** and **Figure F6**. Of note, the bore report for registered bore 173589 (~200 m south of the site) reported collapsed mine workings from 31.8 to 33 mBGL. This bore was associated with an investigation previously completed by Epic at the adjacent site and is discussed further in **Section 2.4.3**.

From the identified information, it can be assumed that the potential aquifer underlying the site is hosted in the underlying Blackstone Formation mudstones, sandstones and coal seams estimated to be greater than 30 mBGL, while shallower groundwater could be present in the backfilled mine voids and pits.

Table 4. Registered Groundwater Bores (Within 500 m)

RN Bore No.	Install Date	Direction	Distance (m)	Status	Location	Role	Screened Aquifer	Screened Interval (mBGL)	SWL (mBGL)
173589	19/04 /18	South	210	EX	Residential	Sub-Artesian monitoring, water supply	Sandstone	30-33	10.20
173590	19/04 /18	South	420	EX	Residential	Sub-artesian monitoring	Sandstone	11-17	9.00
173770	12/11 /18	North	470	EX	Freedom Fuels	Sub-artesian monitoring	Clay	3-9	-
173771	12/11 /18	North	470	EX	Freedom Fuels	Sub-artesian monitoring	Clay	3-11.7	-
173772	12/11 /18	North	470	EX	Freedom Fuels	Sub-artesian monitoring	Clay	3-9	-
154529	17/05 /13	North	470	EX	Freedom Fuels	Sub-artesian monitoring	Clay	7-12	-
154530	17/05 /13	North	470	EX	Freedom Fuels	Sub-artesian monitoring	Clay	7-12	-
154531	17/05 /13	North	470	EX	Freedom Fuels	Sub-artesian monitoring	Clay	7-12	-
154532	17/05 /13	North	470	EX	Freedom Fuels	Sub-artesian monitoring	Clay	7-12	-
194827		East	487	EX	New Chum	Sub-artesian monitoring	Siltstone	46.5-70.5	-
152447	20/01 /14	East	535	EX	New Chum	Sub-artesian monitoring	Sandstone / siltstone	64-82	-
194825	14/02 /18	East	657	EX	New Chum	Sub-artesian monitoring	Siltstone	65-83	49.84
194829	13/11 /20	East	709	EX	New Chum	Sub-artesian monitoring	-	-	-

2.3.10 Groundwater Dependent Ecosystems

A search of groundwater dependent ecosystems (GDEs), accessed through Queensland Globe, identified a potential exclusion zone impervious rock GDE aquifer underlying a majority of the site. The southern end of the site is underlain by fractured sedimentary rocks with saline flow, likely associated with the sandstones of the nearby groundwater bores. No terrestrial, aquatic or subterranean GDEs were identified in the search.

2.4 Site History

This section provides details from the site history desktop review. No former site personnel, associated with either the Rylance Colliery or Claypave operations were available for interview due to the site being inactive at the time of the investigation.

2.4.1 Historical Title Search

A historical title search was completed 22 December 2022, with results presented in **Appendix G** and a summary provided in **Table 5**. It is understood that prior to 2008, the property was divided into two separate property lots (north and south). As such, it is understood that the site had been used for limited coal mining since 1885 (lease to William Stafford), increasing to the large-scale operations of Rylance Colliery in 1950, ceasing in 1985 with the acquisition of the site by Claypave.

Table 5. Registered Titles Summary

Date Acquired	Years Held	Registered Proprietor(s) and Occupations (where available)	Reference to Title	
			Northern Lot	Southern Lot
17/01/1887	1887 to 1897	Adam Perrett	Volume 275 Folio 84	Volume 640 Folio 18
19/03/1897	1897 to 1911	John Perrett Arthur Albion Perrett (Devisees in Trust re the Estate of Adam Perrett)	Volume 275 Folio 84	Volume 640 Folio 18
21/07/1911	1911 to 1950	Florence May Rylance (Married Woman)	Volume 275 Folio 84	Volume 640 Folio 18
23/05/1950	1950 to 1985	Rylance Collieries & Brickworks Pty Limited	Volume 275 Folio 84	Volume 640 Folio 18 Then Volume 6581 Folio 248 Now Volume 6760 Folio 163
20/06/1985	1985 to 2008	Claypave Pty Ltd	Volume 275 Folio 84 Then Volume 8108 Folio 115 Now 18108115	Volume 6760 Folio 163 Then Volume 8108 Folio 115 Now 18108115
25/03/2008	2008	The State of Queensland – Represented by Department of Natural Resources and Water	18108115 Now Crown Land	
17/04/2008	2008 to 2021	Claypave Pty Ltd	40056144 Then 50716279 Now 50791028	
28/04/2021	2021 to date	Chum Street Pty Ltd (Trustee)	50791028	

Notes:

- **Leases issued:**
 - 20/09/1885 a lease to William Stafford, Joseph Stafford, John Stafford & James Stafford, of mines beds veins and seams of coal was issued for 14 years.
- **Easements:**
 - 14/03/1969 (D 683926 now 601362579) to Southern Electric Authority of Queensland over Easement A on RP 119493. Surrendered 13/01/2006/
 - 04/07/1974 (E793828 now 601208699) to Council of the City of Ipswich over Easement A on RP 138484.
 - 09/02/1984 (H 198411 now 601362580) to Queensland Electricity over Easement B on RP 184748. Surrendered 13/01/2006
 - 22/11/2002 (706141261) to Queensland Electricity Transmission Corporation Limited over Easement M on SP 152146
 - 23/04/2008 (711600780) to Queensland Electricity Transmission Corporation Limited over Easement C on SP 207445
 - 23/04/2008 (711600784) to Queensland Electricity Transmission Corporation Limited over Easement D on SP 207445

2.4.2 Historical Aerial Photographs

A summary of observations made from historical aerial photography is provided in **Table 6** and reviewed photographs have been provided as **Figure F4** to this report. The approximate maximum extents of the mining disturbance extracted from these historical aerial photographs are presented in **Figure F7**.

Table 6. Historical Aerial Photograph Observations

Aerial Photo Year	On Site Description	Surrounding site description
June 1948 (SYV430, Frame 5083)	The site comprises undeveloped bushland. An unsealed track is visible through the southern	The surrounding areas comprise undeveloped bushland and some low density residential to the

Aerial Photo Year	On Site Description	Surrounding site description
	end of the site and some cleared areas to the eastern end.	north with some kind of industrial development visible in the north-east.
July 1955 (QAP538, Frame 6)	Site remains largely similar to 1948, although some land has been cleared and development has begun toward the south-western end of the site – possibly early mine operations.	Some works are visible to the east of the site likely associated with the commencement of the Rylance No. 5 Extended Colliery.
May 1959 (QAP890, Frame 4)	More structures and clearing visible to the south-western end of the site, believed to be the underground mining and part of High St now appears to be well established near the site.	Further structures have been erected to the north-east of the site.
November 1964 (QAP1639, Frame 8)	The site remains similar to the 1959 aerial.	Works to the north-east have expanded with further clearing and built structures now visible.
May 1971 (AQP2231, Frame 46)	Extensive open cut mining works are now visible on site. Stockpiles of dark material (likely coal) are also visible. The area for the electrical easement also appears to have been cleared through the site.	Extensive open cut mining works extend to the north-east.
March 1972 (QAP2583, Frame 6171)	Mining works have visibly expanded and brightly coloured pools/ponds are visible around the site.	Surrounding areas seem relatively unchanged.
August 1978 (QAP3605, Frame 3356)	Most vegetation has been cleared off the site and mining works have expanded but also changed. The open cuts visible in 1972 have been filled – major earthworks are assumed to have been undertaken.	Further vegetation clearing and mine work expansion has occurred around the site.
February 1987 (QAP4448, Frame 127)	Vegetation is noticeable on site again and all open pits appear to have been filled – indicating most of the coal mining has ceased. Unsealed tracks are clearly visible across the site. Potential salt scalding visible across the site.	The Cunningham Highway is now visible to the south-east. Similarly to the site, surrounding mining works appear to have been filled and changed.
June 1990 (QAP4856, Frame 52)	The site appears to be mostly covered with vegetation again and the south-eastern end has been significantly raised indicating material was filled or imported.	Major and extensive mining works are visible to the other side of the Cunningham Highway at New Chum.
July 1997 (QAP5555, Frame 24)	The site appears similarly to the 1990 image but with some possible mining activity occurring in the southern end.	Surrounding areas seem relatively unchanged.
December 2004 (QAP6163, Frame 2)	Works in the south have expanded and a large pond is visible.	Land to the south has been cleared assumed to be for residential development.
April 2008 (QAP6273, Frame 160)	The site remains similar to the 2004 image.	Land to the south still cleared but residential development is yet to be erected.
October 2012 (Nearmap)	The majority of the site remains similar to the 2008 image. Soil stockpiles in the northern end of the site are observed to have been moved around onsite.	Low density residential housing is observed to the south of the site where previously the land was cleared in the 2008 image.
November 2015 (Nearmap)	No discernible changes to the site were observed since the 2012 image.	Further low-density residential housing is observed to the south of the site.
July 2018 (Nearmap)	No discernible changes to the site were observed since the 2015 image.	Further low-density residential housing is observed to the south of the site.
October 2022 (Nearmap)	No discernible changes to the site were observed from the 2018 image.	Additional low density residential housing was observed to have been developed to the south of the site.

2.4.3 Previous Investigations

Ardent have provided Epic with historic reports and relevant plans associated with the site. The relevant reports received have been summarised in **Table 8 to Table 10** and **Section 2.4.3.1**.

Table 7. LeVert Desktop Assessment (2011)

Report Aspect	Details
Date	November, 2011
Area investigated	Included areas onsite and offsite in the adjacent lot (lot 27 on SP220033)
Author	LeVert Environmental Pty Ltd
Report Issued To	Claypave Pty Ltd
Document Type	Stage 1 Desktop Environmental Assessment & Site History Review
Stated Objective	- To identify potential past and current practices that may have had the potential to cause soil contamination; and - Provide a report detailing the investigation
Scope of Works	- Review of available site plans, topographical maps, records and related documents - Review geological and hydrogeological maps - An evaluation of historical aerial photographs to assist in assessing historical land uses and conditions on and adjacent to the sites - A historical title search was conducted to identify previous owners that may have had the potential to cause ground contamination - Discussion with current owners and persons associated with the site to research current and previous site uses - A site visit and general characterisation of the site to identify potentially polluting processes - A visual evaluation of surrounding land uses was made, to identify neighbouring activities which may have affected or present a potential risk to the environmental quality of the site - A review of natural surface site drainage in relation to the receiving environment and - Preparation of a report
Results	LeVert concluded that with respect to soil contamination at the site described as Lot 25 on SP220030, excluding the area of suspected waste disposal was suitable for residential development. They assumed the area of coal fines would not be developed but incorporated into parkland as part of the natural drainage for the site. They acknowledged potential issues for future development with the presence of former underground mining tunnels and shafts at the site however they considered this a geotechnical problem rather than a contamination issue.
Recommendations	LeVert recommended that: - Newly subdivided lots from Lot 25 on SP220030 not affected by the area of possible waste disposal are not listed on the EMR - As a precautionary measure no residential development is to be undertaken on lots affected by the area of possible waste disposal until it is fully investigated and if required remediated and validated as suitable for residential development; and - The area of possible waste disposal is securely fenced and not interfered with during development of the remaining site until such time that it will be investigated and if required remediated and validated as suitable for residential development

Table 8. Butler Partners Geotechnical Report (2022)

Report Aspect	Details
Date	May, 2020
Area investigated	Included areas onsite and offsite in the adjacent lot (lot 27 on SP220033)
Author	Butler Partners
Report Issued To	Gorman Property Group
Document Type	Geotechnical Investigation
Stated Objective	Assess the current condition of the site
Scope of Works	Geotechnical investigation involving an intrusive investigation including: 61 test pits 9 boreholes
Results	Fill was observed across the entire site at varying depths. With the following distribution identified: - Fill within the site was predominately sandy clayey gravels with relatively consistent vertical and lateral consistency - Underlying natural soils were identified as silty clays and weathered mudstones. - Test pits: - Fill with ash reported at 0.4-1.4 mBGL in test pit 21 (central area of the site) with the southern and northern areas of the site containing fill profiles <1 mBGL - Boreholes: - The deepest fill identified (>31.5mBGL) at borehole 70 located in the centre of the site. - Interbedded layers of coal observed at 15.2-19.9 mBGL in borehole 68 (western area of the site). - Fill with coal reported at 18.3 – 22.1 mBGL in borehole 69 (central area of the site). - Coal lenses reported at 7.4-7.9 mBGL and fill with coal at 21.2-23.1 mBGL in borehole 70 (central area of the site).
Data Gaps	It is unclear as to the nature of the ash in TP21. Based upon the information provided in surrounding logs, it is considered likely that the reported ash material is coal fines or is limited in extent. Additionally, the investigation did not cover the entire site and no chemical data was collected.

Table 9. Taylor Mining Services Report (2023) – Appendix I

Report Aspect	Details
Date	February, 2023
Area investigated	Included areas onsite
Author	Taylor Mining Services Pty Ltd
Report Issued To	QLD Property Group
Document Type	Mining report for Lot 25 on SP220030
Stated Objective	Review historical mining activities undertaken at the site and show pegged survey location of the Mine Tunnel and Air Shaft to determine the current surface levels compared to the 1960s and 1970s
Scope of Works	Mining report: - Topography, mining, waste disposal, comments - Show pegged survey location of the mine tunnel and air shaft to determine current surface levels compared to the 60s and 70s mine plans
Results	The shallowest depth to the mine workings appears to be in the vicinity of the air shaft area at approximately 24m below the surface. Previously thought that mine wastes ("lime scales", acids, alkalis and dilute heavy metal solutions) were trucked to the site from a Brisbane operation that at times needed to dispose of some solvent wastes, reportedly poured or pumped down a borehole into the mine tunnel or air shaft. Based upon the review, it was concluded that the disposal site more likely thought to be a borehole into the mine tunnel between the 70s and 80s. The mine tunnel is believed to be covered with approximately 5.5 m of fill and the air shaft with approximately 1.8 m of fill.
Data Gaps	It is unclear as to the exact location of the borehole reported to be used for the disposal of wastes. Additionally, the source and nature of the wastes are unable to be confirmed.

Table 10. DSI Report for Lot 41 on SP264644 (2018)

Report Aspect	Details
Date	June, 2018
Area investigated	Included areas offsite immediately south of the site. This investigation was completed on former lot 41 on SP264644, which has since been subdivided.
Author	Luke Amies (Epic Environmental Pty Ltd)
Report Issued To	Gorman Property Group
Document Type	Detailed Site Investigation (DSI)
Stated Objective	Assess the current condition of the site and document the findings in accordance with Section 389 of the EP Act (1994) to facilitate a review by the appointed Contaminated Land Auditor (CLA) to allow of the removal of the site from the EMR.
Scope of Works	The scope of works completed included: • Desktop historical review • Intrusive soil sampling at twelve locations and installation and sampling of two groundwater bores installed to a depth of 33 mBGL (MW01) and 17 mBGL (MW02) • Asbestos clearance inspection of cleared areas adjacent to the pre-existing residential development
Results	• Publicly accessible areas of the area were subject to fly tipping, with dumped material not identified as a source of contamination • Asbestos was identified in surface fill material imported to the site as part of civil works on the project. Asbestos was removed and areas validated • MW01 encountered collapsed coal workings at 31 mBGL., with coal workings reported to be dipping in a southerly and easterly direction • Hydraulic conductivities of 0.19 to 0.41 m/day were reported in the underlying shallow coal and shales (MW02) while the coal workings were determined to be highly permeable (3.50 to 7.81 m/day) • Water samples from the underground workings reporting elevated concentrations of heavy metals, however concentrations of hexavalent chromium, volatile organic compounds and cyanide were all below the limit of reporting with no indicators identified of the disposal of waste. • The site was determined to be suitable for unrestricted use and was removed from the EMR
Data Gaps	• This investigation was completed for the property located to the south of the site, with no boreholes or groundwater bores installed within the site boundaries • It was unclear as the extent of flooding in the underground workings and the connectivity between levels of workings • It is unclear the interaction of surface water bodies and groundwater (if any) and connectivity exists

2.4.3.1 Maunsell Excerpt

A single page excerpt from a Maunsell report reveals some information on the nature of the waste tipped down the disused mine shaft. The excerpt refers to an operation called the 'Dinmore lime scales dump' and mentions a disused mine shaft which was used for the disposal of acid, alkali and dilute heavy metal solutions. It is believed that the report was written at some point prior to 1988 at which time the operation did not appear to be causing problems, although it was noted very little information was available to make this conclusion. A copy of the Maunsell report excerpt is included in **Appendix A**. The approximate location of the former mine shaft believed to be related to the disposal of the material is presented in **Figure F6** and **Figure F7**.

It was recommended that a number of bores be drilled around the operations to determine in detail the local geology, and to monitor the groundwater in the vicinity of the mine shaft. It was stated that if the suggested investigations indicated that the mine can be operated satisfactorily as a disposal site, then there was no reason that it should not continue to operate along its present lines.

A number of treatment and facility upgrades were suggested in this excerpt, but construction plans at the time of writing did not include the suggested improvements. Pre-treatment options for hexa-valent chromium,

cyanide and organo-metallic compounds were also discussed as well as the addition of excess alkaline material to be added to the mine shaft to ensure precipitation and partial immobilisation of metals. The recommended treatment systems likely reflected the nature of the material disposed of into the underground workings.

2.4.4 Historic Waste Management

Waste management at the site has varied between the historic Rylance Colliery operations and the Claypave activities. During the operation of the Rylance Colliery and brickworks, the following was obtained from the site history review (**Section 2.4**):

- Anecdotal information detailed in the Maunsell excerpt (**Section 2.4.3.1**) indicated that:
 - Dumping of industrial waste and by-products has possibly occurred down a borehole/shaft possibly located immediately west of the former mine portal
 - Wastes reported to have been disposed of in this manner included acids, alkalis and dilute heavy metal solutions (hexavalent chromium, cyanide and organo-metallic compounds), with other sources also reporting the disposal of solvents
- The historical aerial photograph review (**Section 2.4.2**) only identified permanent structures adjacent to the southern mine portal to the former underground workings, with waste likely disposed of at the eastern area of the mine, located offsite where mine structures were identified in the vicinity of the current Claypave brickworks structures
- It is unknown where overburden material was stockpiled during the mining operation, with no significant stockpiles identified as part of the historical aerial review (**Section 2.4.2**)

Based upon anecdotal information and evidence from the historical aerial photograph review detailed in **Section 2.4.2**, it is understood that overburden material from the combined underground and open cut operations were used to backfill the open cut and mine portals between 1975 and 1985. Details of these earthworks are provided in **Section 2.3.6** and are visible in the historical aerials of the site (**Figure F4**).

2.5 Sensitive Receptors

2.5.1 Ecological Receptors

Potential ecological receptors are predominantly:

- Onsite flora and fauna in unsealed portions of the site via direct contact or root uptake of contaminated soils
- Groundwater beneath the site and the southern gaining freshwater ecosystems following infiltration of contaminants into the water table
- Ecosystems associated with Bremer River and the drainage basin, with overland flow of contaminated surface water, contaminated surface water entering the local stormwater network to the north of the site
- Offsite terrestrial ecosystems following deposition of contaminated dust during site redevelopment works
- Although there are surface water bodies located on the site, these are ephemeral in nature, highly disturbed and are unlikely to represent an ecological receptor. During heavy rainfall, overland flow to the north would likely discharge into the Bremer River approximately 3.5 km north of the site.

2.5.1.1 Environmental Values

Environmental values (EVs) as listed within the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* (EPP Water) for the 'Bremer River' (Lower Bremer River Fresh Waters Section 2), have been considered with respect to the site. A brief discussion of the relevance of each environmental value to the site is provided in **Table 11**.

Table 11. Environmental Values

Value	Icon	Description and Identified Receptors	Receptor Linkage
Aquatic Ecosystems		The site is located within the catchment of the lower Bremer River (approximately 3.5 km north of the site), with groundwater anticipated to flow in a northerly direction towards the Bremer River. It is considered that any impacts on the aquatic ecosystems within the Bremer and Brisbane River (4.5 km north-east of the site) from the discharge of groundwater would be minimal. Due to the ephemeral nature of the surface water drainage channel and distance to the Bremer River, it is not considered that waters at the site would impact on aquatic ecosystems in associated with the Bremer River.	Moderate – Due to the ephemeral nature of the site, surface water bodies on the site are unlikely to contain or support aquatic ecosystems. However high levels of rainfall may result in the movement of water to the Bremer River in the north from the site.
Irrigation		No surface water or groundwater users have been identified downgradient of the site. Due to the ephemeral nature of the surface water drainage channel, it is not considered that waters on site would be utilised for any of the listed value purposes.	Low – The distance to the Bremer River and the lack of identified users, and the low yielding groundwater aquifers present beneath the site would likely preclude its use. Although there appear to be permanent water bodies present on the site there is a potential use of these waters for irrigation purposes. No livestock were identified onsite.
Farm Supply/ Use			
Stock Water			
Secondary recreation			
Visual recreation			
Human Consumption			
Industrial use		The site is not currently occupied and the nearby Claypave brickworks with which it was associated was permanently closed in 2020 so industrial values are considered to have a low relevance to the site.	Low
Cultural and spiritual values		The site is not located near any known sites of cultural and spiritual significance, so these values are considered to have a low relevance to the site	Low

The water quality objectives (WQOs) for Lower Bremer River Fresh Waters Section 2 (high flow) for the management of moderately disturbed aquatic ecosystems specified within the EPP for the Bremer River are:

- Turbidity <5 NTU
- Suspended solids <10 mg/L
- Chlorophyll a <2 µg/L

- Total nitrogen <700 µg/L
- Oxidised N 45 µg/L
- Ammonia N <11 µg/L
- Total phosphorus <90 µg/L
- Filterable reactive phosphorus (FRP) <20 µg/L
- Dissolved oxygen 85-110% saturation
- pH 6.5-8.0
- Conductivity <600 µS/cm

This site is mapped as moderately disturbed. The EPP stated that where groundwaters interact with surface waters, groundwater quality should not comprise identified EVs and WQOs for the receiving water body.

2.5.2 Human Receptors

Potential human receptors identified at the site and surrounding area include:

- Potential future residential occupiers of the site who may potentially be exposed to contaminants of concern through direct contact and/or inhalation of dust/vapours associated with impacted soils and groundwater at the site (if present)
- Construction and maintenance workers who may potentially be exposed to contaminants of concern through direct contact and/or inhalation of dust/vapours associated with impacted soils and groundwater (if present) during site re-development
- Offsite commercial/industrial and residential land users who may potentially be exposed to contaminants of concern through windblown dust during site development, or inhalation of vapours associated with offsite migration of contaminated groundwater (if present)

It is considered unlikely that water hosted within the flooded mine workings would represent an aquifer or reliable groundwater target for the installation of groundwater wells. Additionally the shallow mudstones, shales and fine grained sandstones are unlikely to be high yielding enough to provide a viable groundwater source (**Section 2.3.9.1** and **2.4.3**).

2.6 Site Inspection

Epic SQP Michael Kowalczyk and site representative Joanne Salmon from Ardent (on behalf of QPG) met onsite Friday 10 February 2023 for an inspection where the following observations were noted:

- Refuelling infrastructure was observed located downgradient offsite at the Claypave office where underground storage tanks were also noted, thus indicating refuelling would have unlikely occurred within the site
- No permanent workshops or structures were located on the site, with the Claypave brickworks facility located to the west offsite containing the primary site infrastructure
- No utility infrastructure was identified within the site boundary during the site inspection outside of the high voltage overhead powerlines
- A small potential coal fines stockpile was observed in the coal fines area adjacent to the sediment pond which was observed to be stockpiled coal fines and rejects (**Plate 2**). A concrete block with "coal fines" painted on it was observed adjacent to this stockpile (**Plate 3**).
- Anecdotal evidence provided by Ardent during the site inspection indicates that fill material across the site is inert overburden from the coal mining which was shifted from the south and north to provide the brickworks access to the underlying clays. This was supported by the following site observations:
 - Small stockpiles of light grey (SP01 [~70 m³] and SP03 [~50 m³]) and red clay (SP02 [~35 m³] and SP04 [~35 m³]) was present in the northern area of the site. The volumes of these stockpiles were estimated during the site inspection, with the site representative from Ardent indicating it was raw material for the former brickwork operations (**Plate 1**)
 - An inspection of the sediment pond adjacent to the former coal fines stockpile area did not indicate foreign material within or on the bank of the pond. Erosion around the sediment pond

- indicated that the area is underlain by coal and sandstone gravels (**Plate 2, Plate 3 and Plate 4**).
- Erosion or excavation of filled areas revealed the filling on the site was relatively consistent with the type of overburden fill material observed onsite. No waste or foreign material was observable within the fill profiles which consisted of clay, sand and cobbles to boulders of sandstone and mudstone (**Plate 5 and Plate 6**)
 - A visual inspection of the surface conditions at the EA waste disposal area indicated that material disposed of in this area included clay, bricks and grog (crushed brick) consistent with the EA conditions (**Plate 7 and Plate 8**)
 - No odours, staining or other waste (asbestos, putrescible waste, homewares, construction and demolition outside of the EA conditions) was observable during the site inspection within the soil inspected, soil profiles or stockpiles
 - The site is readily accessible to the public with a direct track from the neighbouring residential areas to the north and southwest. During the inspection some fly tipping was observed immediately adjacent to site access trails. No material was observed greater than 50 m from the site trails.
 - Illegally dumped materials observed included: general rubbish, white goods (fridge), foam insulation, and a crushed car body (**Plate 9**). Some dumped materials had some limited evidence of being burned
 - Illegally dumped materials that were observed during the inspection did not represent a potential to impact the surrounding or underlying soils. No liquid or hazardous waste was observed during the inspection (profile of material visible in **Plate 10**).
 - Observed point for site access are shown in **Figure F6**
 - Buildings associated with the mining operations were not observed during the site inspection with the observable ground conditions being slightly undulating. Survey pegs were present indicating the estimated location of the tunnel portal (**Plate 11**) which were installed as part of the review completed by Taylor Mining (**Section 2.4.3**) The approximate location of the mine portal is shown in **Figure F6**
 - The water body in the southern area of the site was confirmed to be a clay mining pit by the site representative, with no fill material observed in the southern areas. Water within the pond was odourless and did not contain any notable sheens (**Plate 12**). Some illegally dumped material was noted on the banks of the pit consisting of a fridge and galvanised posts. The location of the water bodies are shown in **Figure F6**
 - The vegetation in the southern area of the site was charred, possibly due to historic fire onsite. The site representative indicated that no fire services had been called to the site since the acquisition by the current owners (since 2021).

During the site investigation, site inspections or supervision of works were periodically completed by the SQP (Michael Kowalczyk). These included:

- 10 February 2023: the preliminary site inspection to identify potential areas of environmental concern. Inspection was completed with a representative of the site owner from Ardent
- 23, 27 and 28 May 2023: to inspect the progress of soil investigation
- 3, 4, 10, 11, 17 and 18 June 2023: to inspect the progress of soil bores
- 1, 9 and 10 July 2023: to inspect the progress of groundwater bore installation
- 1 and 2 August 2023: to inspect the progress of the groundwater sampling program

A site inspection with a representative of the CLA was completed on 5 July 2023.

3 PRELIMINARY CONCEPTUAL SITE MODEL

3.1 Potential Contamination Sources

A preliminary conceptual site model (CSM) has been developed to inform this investigation. A CSM is formed by considering the physical characteristics of the site, potential contamination sources (and chemicals of potential concern (CoPCs)), potential receptors and the pathways to the receptors. The CSM, as required by the NEPM (2013), is an iterative process requiring updates throughout the investigation as more information becomes available. Using the information obtained during the desktop review and site inspection, Epic has developed a preliminary CSM for the areas of concern to identify key, realistic and plausible risks posed to human and ecological receptors on and offsite, as summarised in **Table 12**.

Through the review of the site, four areas of environmental concern (AEC) have been identified onsite as shown on **Figure F7**. These areas are:

- Area 1: Areas of opencut mining operations, backfilled with uncharacterised overburden material, further divided into area of mining identified in the historical image review (**Section 2.4.2** and **Figure F4**)
 - Area 1a: North-eastern pit (Historical aerial photograph 1971), with fill material identified up to 8.1 mBGL (Butler Partners, 2022)
 - Area 1b: Northern pit (Historical aerial photograph 1971), with fill material identified up to 10.8 mBGL (Butler Partners, 2022)
 - Area 1c: Central pit (Historical aerial photograph 1971), with fill material identified up depths greater than 31.5 mBGL (Butler Partners, 2022)
 - Area 1d: Southern pit (historical photograph 1972), with fill material up to 22.2 mBGL (Butler Partners, 2022)
 - Area 1e: Western pit (historical photograph 1978), with fill material up to 20.8 mBGL (Butler Partners, 2022)
- Area 2: Coal fines stockpile area and sediment pond (identified during the site inspection) where coal fines and rejects were reported to be stored
- Area 3: EA waste disposal location for inert brickworks waste (**Section 2.2.2**)
- Area 4: Infilled tunnel portal, borehole, airshaft and associated underground workings reportedly used for waste disposal (**Section 2.4.3.1**)

Additionally, underground coal working and potentially buried coal material may be subject to methane generation, oxidising to carbon monoxide or carbon dioxide in addition to spontaneous combustion of exposed coal seams.

Based upon the separation of the site from the surrounding industrial land uses to the east of the site, it is considered unlikely that surface connectivity is present. Additionally, groundwater flow direction is expected to be towards the north, minimising the potential for groundwater migration from the adjacent sites.

Finally, publicly accessible areas adjacent to site access tracks have been used for illegal dumping indicating that it is plausible for material to be fly tipped along these tracks.

Table 12. Preliminary Conceptual Site Model (CSM) – Epic, 2023

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	Evaluation	Rationale
Onsite							
1 a – e	Overburden fill / uncontrolled filling	Heavy Metals (As, B, Ba, Be, Cd, Cr, Co, Cu, Mn, Ni, Pb, Se, V, Zn, Hg), Total recoverable hydrocarbons (TRH), benzene, toluene, xylene, naphthalene (BTEXN), asbestos, pesticides, polychlorinated biphenyl (PCB), polycyclic aromatic hydrocarbons (PAH), volatile and semi-volatile organic compounds (VOC and SVOC) and per-polyfluoroalkyl substances (PFAS)	Surface soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours/fibres	Human – Construction workers and future site users	Potential source exists	Significant amounts of filling have occurred across the site. Geotechnical investigations and anecdotal information indicate that this is primarily overburden material.
	Buried mine wastes / spills	TRH, heavy metals, Cyanide, PAH, SVOCs/VOCs, Phenols and PFAS	Buried surface soils and leaching to groundwater	Plant uptake and ingestion Groundwater discharge of impacted groundwaters	Ecological – onsite flora and fauna Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)		

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	Evaluation	Rationale
	Stockpiles (Clay material)	Heavy Metals	Soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours/fibres	Human – Construction workers and future site users	Potential source exists	Stockpiles were identified on site associated with former brickworks operations. Inspection of the material indicates that it is clay material excavated from the mine located onsite. Confirmation testing will be completed to confirm the status of stockpiled material.
2	Mine spoil (coal fines / rejects)	Heavy Metals, TRH, BTEXN, Pesticides, PCB, PAH, VOC, SVOC PFAS and hazardous gases	Soil and groundwater	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users	Potential source exists	Further assessment required. It is unclear as to whether fire services have been required to extinguish fires (if any) in the area or what material has been historically placed within the area. Testing has not been completed to rule out potential impacts.
				Plant uptake Ingestion	Ecological – onsite flora and fauna		
				Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)		
				Plant uptake Ingestion	Ecological – onsite flora and fauna		
3	Disposed waste material	Heavy Metals, TRH, BTEXN, asbestos, pesticides, PCB. PAH, TRH, VOC, SVOC and PFAS	Soil and groundwater	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users	Potential source exists	Visual inspection of surface of the disposal area indicated that no material outside of the permissible inert waste has been dumped at the site, however additional information is required to confirm if buried waste is present (if any)
				Plant uptake Ingestion	Ecological – onsite flora and fauna		

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	Evaluation	Rationale
4	Mine site features (tunnels and air shaft)	Unknown solvent type wastes (Hexavalent chromium, cyanide and organo-metallic compounds), ACM, VOC and SVOC, PFAS and hazardous gases	Sub-surface soil Groundwater	Direct contact with contaminated soil or groundwater Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users	Potential source identified	The historical review has indicated that the disposal of wastes have historically occurred down a shaft adjacent to the former tunnel portal. Additional information is required to determine the condition of groundwater and soils in the area.
				Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)		
				Plant uptake Ingestion	Ecological – onsite flora and fauna		
	Mine spoil	Metals, cyanide, PAH, Phenols, OCPs, OPPs	Sub-surface soil Groundwater	Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)	Potential source exists	Further assessment required. Testing has not been completed to rule out potential impacts.
	Refuelling Infrastructure	PAH, TRH, ACM, metals	Sub-surface soil Groundwater	Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)	Source not identified	No further assessment required. Refuelling infrastructure noted offsite at the Claypave brickworks facility west of the site and it is considered unlikely infrastructure would be present onsite. Soil boreholes targeting the deepest portions for the backfilled pits and test pits will be used to confirm whether impacts have occurred.
				Direct contact with contaminated soil or groundwater Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users		
	Mine buildings	ACM, Metals	Surface soil	Direct contact with contaminated soil	Human – Construction workers and future site users	Source not identified	No further assessment required.

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	Evaluation	Rationale
				Ingestion or inhalation of dust associated with impacted soils or vapours			No building infrastructure associated with mining activities was noted onsite in historical aerials or during the site inspection. The site inspection of the area surrounding the former tunnel portal in the southern area of the site did not identify any surface impacts.
Whole Site	Illegal fly tipping	Heavy Metals, TRH, BTEXN, asbestos, pesticides, PCB. PAH, TRH, VOC, SVOC and PFAS	Surface soil	Direct contact with contaminated soil	Human – Construction workers and future site users	Source not identified	Confirmation required.
				Ingestion or inhalation of dust associated with impacted soils or vapours			The site is currently not active and no waste materials are being generated or managed onsite, however, during the site inspection, areas of illegal dumping were noted in the southwestern, southern and northern boundaries of the site where site access tracks join to the adjacent residential developments. No fences or gates separate the site from these areas, Confirmation of accessible areas of the site is required.
Offsite							

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	Evaluation	Rationale
Offsite	Former brickworks and adjacent industrial facilities (including USTs)	Metals, PAH, TRH, ACM	Sub-surface soil Groundwater	Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)	Potential source exists	Further assessment required.
			Surface soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users		Heavy industrial development and the density of sub-artesian monitoring bores east of the site in addition with ERAs of adjacent site indicate a potential source of impacts. The fractured nature of the geology, significant earthworks and the Bundamba anticline is likely to result in a complex groundwater flow regime. Testing has not been completed to rule out potential impacts

3.2 Data Gaps

Data gaps in the current knowledge of the site exist in relation to the site condition and potential contamination. Areas of uncertainty remaining include:

- The nature, contamination status or the source of the overburden material used to backfill the mine voids
- The connectivity of groundwater (if any) between the former mine pit and underground workings
- The location of faults within the site and the impact on contaminant migration (if any)
- The depth to, and contamination status of mine workings beneath the northern portion of the site
- Whether mine workings are flooded
- Whether gas generation (if any) represents a potential hazard to current or future site users
- Whether the reported disposal of wastes, and/or adjacent land uses have impacted on soils or groundwater beneath the site

3.3 Sensitive Human Health and Environmental Receptors and Exposure Pathways

The following sensitive human health and environmental receptors have been identified for the site:

- Current and future users (including maintenance workers) of the site could be exposed to contamination via direct contact or ingestion of contaminated soil and inhalation of dust or vapour generated from contaminated soil
- Current and future users of the site could be exposed to groundwater contamination via direct or indirect consumption from abstracted groundwater, however it is considered unlikely that viable groundwater resources are present within the geologies immediately underlying the site (**Section 2.3.9**)
- Human receptors who could be exposed to contaminated surface waters, impacted by soil or groundwater contamination at the site
- Environmental receptors including terrestrial and aquatic biota, groundwater beneath the site and groundwater and surface water/sediment discharging within the catchment of the Bremer River

4 DATA QUALITY OBJECTIVES

The DQOs process is a planning tool developed to ensure that any data collected is of sufficient quality and quantity to support defensible decision making. It is a process used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site and provides a systematic approach for defining the criteria that a data collection design should satisfy.

It is recognised that the most efficient way to accomplish these goals is to establish criteria for defensible decision making before the data collection begins, and then develop a data collection design based on these criteria. Using the DQOs process to plan the data collection assists in improving the effectiveness, efficiency and defensibility of a decision in a resource and cost-effective manner.

DQOs were developed in accordance with US EPA 2000¹ and 2006² to detail the type of data that is needed to satisfy the overall project objectives to inform the principal study questions identified for the site including:

- Identify data gaps the currently exist in the understanding of the contamination status of the site
- Delineate any impacts associated with the historic use of the site
- Facilitate subsequent development of a site RAP to facilitate remedial and validation works (if required) and the removal of the site from the EMR

A summary of the DQO outputs are presented in **Appendix K** sourced from the investigation SAQP (Epic 2022) attached within **Appendix M**.

¹ US EPA (2000), Data Quality Objectives, Process for Hazardous Waste Site Investigations, EPA QA/G-4HW, (Ref. EPA/600/R-00/007).

² US EPA (2006), Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G-4, (Ref. EPA/240/B-06/001).

5 DETAILED SITE INVESTIGATION

5.1 Scope of Works

Epic prepared a Sampling and Analysis Quality Plan (SAQP) (dated 18 April 2023), which identified several data gaps in understanding the contamination status of the site. The SAQP detailed a scope of works to be completed to address these data gaps and inform the removal of the site from the EMR.

The SAQP was reviewed, and comments provided by the CLA prior to the commencement of the detailed investigation. A copy of the SAQP is attached within **Appendix M**.

The scope of works completed during the detailed investigation is summarised in **Table 13**.

Table 13. Summary of Works Completed

Scope of Works	Work Completed	Dates Completed
Site Inspection	Site Inspection	10 February 2023
Soil Investigation	Test pits	26 April 2023 – 18 May 2023
	Soil boreholes	19 May 2023 – 10 July 2023
	Collection of surface soil samples	2 August 2023
	Sediment sampling	1 August 2023 – 2 August 2023 10 August 2023
Groundwater Investigation	Installation of six groundwater monitoring wells	15 June 2023 – 10 July 2023
	Development of monitoring wells	11 July 2023 – 13 July 2023
	Groundwater sampling event	1 August 2023 – 2 August 2023
Surface Water Investigation	Surface water sampling	1 August 2023 – 2 August 2023 10 August 2023
Gas Assessment	Gas screening of excavation voids	26 April 2023 – 18 May 2023
	Surface emission gas walkover	1 August 2023

5.2 Sampling Locations and Rationale

Soil assessment was required to be completed to address the data gaps identified in **Section 3**. The site was investigated in four areas of environmental concern which were identified during the historical review and the balance of the site located outside of these. These areas are:

- Area 1: Areas of opencut mining operations, backfilled with overburden material, further divided into area of mining identified in the historical image review (**Section 2.4.2** and **Figure F4**)
 - Area 1a: North-eastern pit
 - Area 1b: Northern pit
 - Area 1c: Central pit
 - Area 1d: Southern pit
 - Area 1e: Western pit
- Area 2: Coal fines stockpile area and sediment pond (identified during the site inspection) where coal fines and rejects were reported to be stored
- Area 3: EA waste disposal location for inert brickworks waste (**Section 2.2.2**)
- Area 4: Infilled tunnel portal, borehole, airshaft and associated underground workings reportedly used for waste disposal (**Section 2.4.3.1**)

The sampling locations and the rationale is presented in **Table 14**.

Due to the low-risk nature of the over-burden material identified onsite from the geotechnical investigation (i.e. relatively consistent and free of wastes or foreign materials), confirmed during the site inspection and anecdotal evidence, a reduced sampling rate was adopted. Sample locations are shown in **Figure F7**. Test pits were used to investigate the lateral extent of the material to a total depth of 3 mBGL, refusal or 0.5m into natural. It was not expected that an excavator would be suitable to reach investigation depths greater than this. As such, due to the significant filling depth of backfilled overburden material onsite, boreholes were used to investigate the vertical extent of filling.

Table 14. Sampling Locations and Rationale

Area	~ Area (ha)	Soil				Sediment	Water		Rationale
		Test pit	Borehole	Stockpiles	Surface		Groundwater Bore	Surface Water	
1a	4.44	23	2	12	0	0	0	0	- Based upon geotechnical investigations (Butler Partners, 2022) and anecdotal information provided to Epic, it is understood that the fill material used to backfill excavations was overburden material sourced from historic mining operations. Geotechnical logs did not report waste or foreign material in any borehole or test pit. As such a sampling density has been selected which is suitable to identify a hotspot diameter of 50 m in each area considered sufficient to identify material historically spread across the area. - Soil locations were systematically distributed in each area to prevent sampling bias - Boreholes were used to determine the vertical distribution and material consistency to depth - Test pits were used to determine the lateral extents and enable the detail logging of material to a maximum depth of 3 mBGL - One groundwater bore (GW06) was installed in a coal seam to provide characterisation of water (if any) that may be in connection with mine workings - One groundwater bore was installed within a mine void (GW01) adjacent to area 4 to assess impact to groundwater within the former mine workings from historic waste disposal (if any) - One groundwater monitoring bore (GW05) was installed in area 1c to determine groundwater conditions within the deepest portion of the fill profile, informed by geotechnical investigations (Butler Partners, 2022) - Three samples from each clay stockpile (stockpile SP01 to SP04) were collected using an excavator, to enable characterisation of up to 75m³ of material
1b	5.50	23	2	0	0	0	0	0	
1c	3.70	19	1	0	0	0	1	0	
1d	4.88	21	4	0	0	0	1	0	
1e	4.00	22	3	0	0	0	1	0	
2	0.95	11	1	0	0	1	0	1	- Area was sampled at half the density outlined NSW EPA sampling guidelines (2022) with a total of 11 locations arranged across the area based upon the low risk profile of material observed during the site inspection. - As such a sampling density has been selected which is suitable to identify a hotspot diameter of 50 m in each area considered sufficient to identify material historically spread across the area. - One sediment sample and one surface water sample (SW03) were collected from the sediment basin located within the area
3	0.95	11	1	0	2	0	0	0	Area was sampled at half the density outlined NSW EPA sampling guidelines (2022) with a total of 11 locations arranged across the area based upon the low risk profile of waste allowed to be disposed

Area	~ Area (ha)	Soil				Sediment	Water		Rationale
		Test pit	Borehole	Stockpiles	Surface		Groundwater Bore	Surface Water	
									in the area in addition to site observations. One borehole was advanced to investigate the fill material to depth Two surface soil samples (SS01 – 02) were collected from soils beneath areas of observed dumping locations
4	1.48	20	4	0	0	1	1	0	- Area was sampled to NSW EPA sampling guidelines (2022) with a total of 25 location using a sampling pattern arranged across the area associated with the former tunnel portal. - Boreholes (BH05, BH08 and BH09) were advanced to target the underground workings and backfill material used within the portal. - One groundwater monitoring bore (GW03) was installed within a coal seam to determine connectivity to the underground mine workings and the extent of impacts from historic waste disposal (if any) - One sediment sample (SW02) was collected from the dry creek line running adjacent to the former tunnel portal
Balance of site	10.10	18	2	0	0	2	3	1	- Based upon the geotechnical investigation completed on the site (Butler Partners, 2022), areas outside of the identified areas of concern are predominately natural from surface or reworked fill material <0.5m in thickness. As such a reduced sampling rate was adopted to confirm the low risk conditions. Locations were systematically spaced across the area. - Two groundwater monitoring bores (GW04 and GW02) were installed to determine background groundwater conditions within coal seams/regional geology beneath the site - One surface water sample was collected from the excavated void resulting from historic brickwork mining operations (SW01) - Two sediment samples were collected, one from the former mining void (co-located with SW01) and one from the dry creek line near the northern boundary of the site (SW04) - A groundwater sample was collected from a pre-existing groundwater bore (PE01) located outside of the site boundary. The bore log of the pre-existing bore indicates it was installed within a mine void and was sampled as part of this investigation to confirm impact (if any) caused by historic waste disposal
Total Locations		168	20	12	2	4	7	2	

5.3 Soil Sampling Methodology

Soil and sediment sampling was undertaken at the site from 26 April to 10 August 2023. The soil sampling methodology is detailed in **Table 15** below.

Table 15. Soil Sampling Methodology

Action	Description
Service Location	A DBYD search and review of site-specific services (where available) was undertaken, with service clearance undertaken using electromagnetic frequency detection methods prior to the commencement of fieldworks by a licenced service locator.
Sediment Sampling	- Sediment samples were collected from four surface water locations - Locations SW01 and SW03 had water at the time of sampling, while SW02 and SW04 were dry at the time of sample. - Sediment samples were collected using disposable nitrile gloves, replaced between the collection of each sample. The soil samples were transferred immediately into laboratory supplied sampling jars/bags and sealed as soon as practicable after collection.
Intrusive soil sampling	- Test pit soil samples were collected using a 14t excavator. Soil samples were collected directly from the excavator bucket at the intervals discussed below to a maximum depth of 3 mBGL, refusal, or 0.5 m into natural (whichever occurs first). - Stockpile samples were collected directly from shallow test pits advanced directly into the stockpile using the same excavator. - Boreholes were advanced using a sonic drill rig to a maximum depth of 38.5 mBGL, with target depths varying based on location rationale - Soil samples were collected using disposable nitrile gloves, replaced between the collection of each sample. The soil samples were transferred immediately into laboratory supplied sampling jars/bags and sealed as soon as practicable after collection.
Soil logging	Logging of investigation locations was conducted in general accordance with the Unified Soil Classification System and AS 1726-1993. The soil profile was logged with the following information recorded in the field: soil/rock type, colour, grain size, sorting, inclusions, moisture conditions, staining and observation of any anthropogenic material (i.e. odours, waste materials). Descriptions were recorded using Plog onto Epic's standard field log sheets for uniformity in descriptions, presentation and to aid in future interpretations.
Soil sampling intervals	Samples were generally collected from each location from the surface between 0.0-0.2 m, subsurface approximately 0.5 m and 1.0 m, then every metre thereafter, and/or where a change in lithology or visual signs of contamination were evident.
Gas Screening	A GA5000 landfill gas analyser was used discretionally to screen excavation voids following the excavation of material. This information was recorded separately to test pit logs. A calibrated photo-ionisation detector (PID) was used discretionally during the intrusive investigation to quantify any odour observed during logging, with no results reported above background.
Field QA/QC	Field intra- and inter-laboratory duplicates of the soil samples were prepared in the field by collecting blind and split samples from the same depth (rate of 1:10 for PFAS and 1:20 for all other analytes across the full program). Samples were not mixed or homogenised during collection or splitting. Further details on the field QA/QC program including trip blanks, trip spikes and rinsate blanks are discussed in Appendix S .
Sample labelling, storage and transport	All samples were clearly labelled with unique identification numbers consisting of the date, sample location and samplers' initials. Samples were kept in an ice filled Eskey prior to dispatch and during transport to the NATA registered laboratory, under chain-of-custody procedures. By prior arrangement with the laboratory, samples were extracted and analysed as soon as practicable after receipt.
Decontamination	Reusable equipment (where utilised) was decontaminated by hand between each soil sampling location and event. Decontamination included scrubbing with a solution of Liquinox where necessary or rinsing in deionised water.

5.4 Groundwater Investigation Methodology

Groundwater wells were installed between 15 June to 10 July 2023, with sampling undertaken on 1-2 August 2023. The groundwater sampling methodology utilised is detailed in **Table 16**.

Table 16. Groundwater Investigation Methodology

Action	Description
Monitoring Well Installation	Groundwater bores were installed by a licenced water bore driller, responsible for bore registration, using sonic drilling methods to target coal mining voids, maximum depth of filling, economic coal seam (un-mined) or background regional geology to a maximum depth of 38.5 mBGL. Where water was not encountered, the shallowest coal seam or base of the fill profile was targeted for installation.
Monitoring Well Development	Groundwater wells were developed a minimum of one day following installation using a foot valve. Bores were purged until dry or field parameters stabilised for three consecutive readings. Two groundwater bores (GW04 and GW06) required additional development via air-lifting methods due to significant sediment content within the bores following installation. Purge water was disposed of to the ground adjacent to groundwater bore locations.
GPS Coordinates and Height Datum	GPS coordinates (GDA2020 / MGA Zone 56) and height datum (mAHD) for the ground level and top of casing was collected using a pair differential GPS base station and Emlid RS+ rover. These measurements were used to determine groundwater flow direction and are presented in Appendix V .
Monitoring Well Gauging	Measurement of the standing water level in each groundwater monitoring well was undertaken using an electronic interface probe prior to sampling. The standing water level and depth to base of well was recorded. All measurements were taken from the top edge of the highest point of the casing collar to the water surface within the monitoring bore. The height of the casing above the ground level was also recorded.
Monitoring Well Sampling	Prior to sampling, monitoring wells were purged using a submersible pump. Purging was undertaken with frequent measurements of the water quality until parameters stabilised or the well was purged dry. Purge water was disposed of to the ground adjacent to groundwater bore locations. Sampling of the monitoring wells was completed using an electric submersible pump and dedicated tubing following stabilisation or recharge back into the bore. Samples were collected directly from the tubing into laboratory prepared vials and bottles. All bottles were sealed immediately, labelled and placed on ice.
Field Parameters	Field parameters were recorded in-field during purging, using a calibrated water quality meter. Parameters recorded include temperature, dissolved oxygen, Redox potential, electrical conductivity and pH.
In-situ Permeability Testing	To provide an indication of hydraulic conductivity within the shallow aquifer at the site in situ permeability testing was conducted on selected wells. A rising head test (RHT) and falling head test (FHT) was completed using a 12v submersible pump, water purged from the well and an automatic well level logger. A logger was set up to collect water level measurements every second, then lowered into the well minimum of 0.2m from the base of the well or 0.2 m below the SWL. Two methods of conducting a FHT were used, the first method was carried out by setting the 12v submersible pump to maximum pump rate and recording the draw down of the SWL. The other method of FHT was carried out by pouring purged water from the well back down into the well (20L at a time) and the SWL recorded. The RHT was carried out by setting the 12v submersible pump to maximum pump rate and once the SWL stabilised or well purged dry the pump was switched off, then the SWL recovery was recorded. A water level meter was used to monitor the rebound of the SWL. Once the SWL had returned within 95% of the original level the test is complete. Following completion, the Logger was retrieved, and data downloaded. Decontamination of the 12v submersible pump was completed between sampling locations, this was completed by scrubbing thoroughly in a solution of Liquinox and potable water before rinsing with PFAS-free water. The 12v submersible pump was then double rinsed with de-ionised water. Data was processed using AQTESOLV software (refer Section 6.2.4 and Appendix R).
Sample Labelling, Storage and Transport	All samples were clearly labelled with unique identification numbers consisting of the date, sample location and samplers' initials. All samples were kept in an ice filled esky prior to dispatch and during transport to the NATA registered laboratory, under chain-of-custody procedures.

Action	Description
Decontamination	A new pair of disposable gloves was worn for the collection of each sample. Any reusable equipment used during well monitoring, gauging or sampling (e.g.: oil/water interface probe) was decontaminated by scrubbing thoroughly with a plastic brush and rinsing with clean water as necessary. Items were triple-rinsed in distilled or de-ionised water following decontamination.

5.5 Surface Water Investigation Methodology

Surface water samples were collected on the 1 – 2 August 2023. Surface water sampling methodology is outlined in **Table 17**.

Table 17. Surface Water Investigation Methodology

Action	Description
Surface Water Sampling Locations	Surface water samples were collected from two onsite water bodies as per the sampling rationale. Surface water samples were unable to be sampled from two of the sample locations proposed in the SAQP, as the creek running along the western boundary of the site was dry at the time of sampling.
Field Parameters	Field parameters were recorded in-field during purging, using a calibrated water quality meter. Parameters recorded include temperature, dissolved oxygen, Redox potential, electrical conductivity and pH. Estimates of flow rate was completed prior to sampling including an observation of any odours or sheens observed (if any).
Sample Collection	Surface water samples were collected using an extendable sampling pole directly into laboratory supplied sample bottles. Sediment samples collected from the same locations were collected after the collection of surface water samples. Surface water locations SW02 and SW04 were dry at the time of sampling.
Sample Labelling, Storage and Transport	All samples were clearly labelled with unique identification numbers consisting of the date, sample location and samplers' initials. All samples were kept in an ice filled esky prior to dispatch and during transport to the NATA registered laboratory, under chain-of-custody procedures.

5.6 Gas Investigation Methodology

To screen for potential methane emissions across the site, a gas walkover was completed at the ground surface using a Huberg Lazer gas monitor. The walkover focussed on areas of mine wastes, filling and the tunnel portal where safely accessible. Methane concentrations were measured approximately 50mm from the ground surface and the path of the walkover readings recorded using the monitor's internal GPS.

A calibrated GA5000 gas meter was used discretionally to screen open excavation voids during test pitting through the attachment of a LDPE tube which was lowered into the base of the excavation. The GA5000 was allowed to stabilise, and the result recorded for methane (CH₄), carbon dioxide (CO₂), oxygen (O₂) carbon monoxide (CO) and hydrogen sulfide (H₂S). The PID was available during the soil sampling program to characterise any odours observed during logging.

5.7 Laboratory Analysis

The analytical program (and corresponding QA/QC program) for the detailed investigation is provided in **Table 18** and **Table 19**. It is noted that three groundwater bores did not have sufficient groundwater to sample or were dry.

An additional three samples were collected from each of the overburden material and characteristic unimpacted lithologies to allow for the development of site specific EILs (total Fe, OC, CEC and pH). In addition to the analytical program outlined below, where elevated concentrations were detected in primary samples, selected samples were re-batched for silica-gel clean-up.

Table 18. Soil Analytical Program

Area	Number of Locations (boreholes/pits)	Number of Samples Analysed													
		Metals (As, B, Ba, Be, Cd, Cr, Co, Cu, Mn, Ni, Pb, Se, V, Zn, Hg)	Cyanide	TRH	TRH After Silica Gel Cleanup	BTEXN	PAH	Phenols	PFAS	PCB	Organochloride (OC) and Organophosphate (OP) Pesticides	SVOC / VOC	Asbestos Identification (presence/absence)	Cation Exchange Capacity, Organic Carbon and Total Fe	Chromium Reducible Sulfur
1a	23	27	0	29	4	29	25	25	15	25	10	10	3	0	0
1b	25	27	0	27	4	27	24	24	14	21	7	10	3	0	0
1c	21	33	0	32	4	32	21	21	10	21	10	10	1	0	0
1d	25	40	3	41	8	41	24	26	15	25	10	10	8	0	1
1e	25	35	0	35	14	35	25	25	15	25	10	10	11	0	0
2	12	12	0	12	5	12	12	12	12	12	6	6	6	0	11
3	13	14	0	17	1	17	13	13	12	11	3	3	5	0	0
4	24	52	50	50	0	50	31	31	25	25	10	23	10	0	0
Balance of site	20	24	3	21	4	21	11	11	11	13	10	9	0	0	0
Stockpiles	4	10	0	12	0	12	0	0	0	0	0	0	0	0	0
Sediment	3	2	0	2	0	2	2	2	2	2	2	0	2	0	0
Aquifer Matrix	5	2	3	3	0	3	0	0	3	0	0	0	0	4	7
Primary Samples Total		278	59	281	44	281	188	190	134	180	78	91	49	4	19
Duplicate		18	3	16	0	16	10	10	13	12	4	3	0	0	0
Triplicate		18	3	16	0	16	10	10	13	12	4	3	0	0	0
Rinse Blank ²		0	0	3	0	3	0	0	3	0	0	0	0	0	0
Trip Blank ¹		0	0	3	0	3	0	0	0	0	0	0	0	0	0

Notes:

1. Trip blanks were only analysed for BTEXN and F1
2. Rinsate were only collected when reusable equipment was used for sampling. Soil samples were typically collected directly from the excavator bucket or disposable sonic rig core bags.

Table 19. Groundwater and Surface Water Analytical Program

Analyte	Groundwater	Surface Water	QA/QC Program					Total
			Dup	Trip	TB	RB	FB	
TRH/BTEXN	4	2	1	1	0	1	1	10
Heavy Metals (Al, As, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Zn, Hg)	4	2	1	1	0	0	0	10
Cyanide (total)	4	2	1	1	0	0	0	8
Cyanide (free)	4	2	1	1	0	0	0	8
Cyanide (Weak acid digest)	4	2	1	1	0	0	0	8
VOC/SVOC ³	4	2	1	1	0	0	0	8
Total Organic Carbon	4	2	1	1	0	0	0	8
Total Dissolved Solids (TDS)	4	2	1	1	0	0	0	8
PFAS ⁴	4	2	1	1	1	1	1	11
Ionic Balance ⁵	4	2	1	1	0	0	0	8

Notes:

1. Dup: interlaboratory duplicate, Trip: intra-laboratory duplicate, TB: trip blank, RB: Rinse Blank
2. Trip blank was analysed for TRH C₆-C₁₀ and BTEXN only
3. SVOC/VOC: Semi volatile organic compounds/volatile organic compounds
4. Suite of 28-30 compounds to ultra-trace levels (lowest limit of reporting available)
5. Ionic Balance included: calcium, potassium, sodium, magnesium, bicarbonate, sulfate and chloride

Nutrients was proposed to be included as part of the general water chemistry suite to enable comparison of and between aquifers and surface water bodies. Assessment included analysis of cations and anions which has been assessed and discussed in **Section 8**. The omission of nutrient data is not considered impact on the findings of the investigation based on a review of available groundwater and surface water results.

5.8 Assessment Criteria

To facilitate an assessment of the site's suitability for EMR removal, the soil assessment criteria was based on a sensitive land use for low density residential occupation. A summary of the relevant criteria is presented in **Table 20**. The site-specific EIL criteria was calculated based upon site-specific conditions discussed in **Section 0**.

Where exceedances of the above assessment criteria were noted, statistical analysis may be applied (where appropriate) to determine the significance of the exceedance. In accordance with the NEPM, the following should be considered as minimum as part of statistical evaluation:

- The 95% upper confidence limit (UCL) should be less than the relevant investigation or screening level; and
- The standard deviation of the results should be less than 50% of the relevant investigation or screening level, and
- No single value should exceed 250% of the relevant investigation or screening level.

Table 20. Adopted Soil and Groundwater Tier 1 Assessment Criteria

Media	CoPC	Potential Receptor	Guideline Source
Soil	Heavy Metals, PAH, Phenols, Cyanide	Human Health	NEPM (2013) Low Density Residential exposure setting Investigation Levels (HIL-A)
	TRH & BTEXN		Soil Health Screening Levels (HSL) for Vapour Intrusion, residential land use (HSL-A and HSL-B), relevant soil type and Management Limit (ML) for residential, parkland & open space) –fine soil type.
	Semi- and Volatile Organic Compounds (SVOC/VOC)		USEPA (2023) Regional Screening Levels (RSLs): Summary Table – Residential Soil. This was utilised as a tier 1 screening assessment where Australian guidance was not available
	PFAS		NEMP (2020) Low Density Residential exposure setting Investigation Levels (HIL-A)
	Heavy metals, TRH, BTEXN, OCP, PAH	Ecological	NEPM (2013) Ecological Investigation and Screening Levels for Urban Residential & Open Space (EILs & ESLs).
	PFAS		NEMP (2020) Ecological direct and indirect exposure scenario
	B(a)P		CRC Care (2017) Urban residential and public open space
Water	TRH & BTEXN	Human Health	NEPM (2013) Groundwater Health Screening Levels (HSL) for vapour intrusion for residential land use (HSL-A & HSL-B), for clay soil type.
	All analytes	Human Health	NEPM (2013) Groundwater Investigation Level (GIL) for drinking and recreational water uses (10 x drinking water)
			NEMP (2020) Drinking water and recreational water quality guidelines values
		Ecological	ANZECC (2000) Short term irrigation guidelines
			ANZG. (2018). Australian and New Zealand Guidelines for Fresh Water Quality
			NEPM (2013) Groundwater Investigation Level (GIL) for Freshwater systems.
			NEMP (2020) Freshwater 99% Species Protection
			ANZG (2023) Draft toxicant default guideline values for aquatic ecosystem protection: Perfluorooctane sulfonate (PFOS) in freshwater 99%
	All Analytes	Bremer River (Human/Ecological)	Environmental protection (Water and Wetland Biodiversity) Policy 2019, Bremer River and Groundwaters water quality objectives
Ground Gas	Methane, carbon dioxide, carbon monoxide	Human Health and ecological	NSW EPA (2020) Assessment and Management of Hazardous Ground Gases – Contaminated Land Guidelines - Appendix 2 Workplace exposure (Safe Work Australia WESAC 2018) for Short-term exposure limits: Methane (5% LEL (1.25%v/v), Carbon dioxide (30,000 ppm), carbon monoxide (30ppm), hydrogen sulphide (15 ppm)

ASS is not anticipated on the site, as discussed in **Section 2.3.8**. To assess the potential spontaneous combustion risk of coal material a sulfur content (measured as SCr, equivalent sulfur (%S)) of <2% has been adopted as a screening criteria.

5.8.1 Site-Specific Ecological Investigation Levels

Ecological risk assessment with respect to metals is complicated by the occurrence of many metals naturally in the environment. Site specific EILs were derived for overburden and natural soils for copper, nickel and zinc in accordance with the method described in Section 2.5.10 of NEPM (2013). The EIL derivation methodology considers the physicochemical properties of soil and contaminants, and the capacity of the local ecosystem to accommodate increases in contaminant levels (i.e. the added contaminant limit (ACL)) above ambient background levels (ABC).

The ASC NEPM Toolbox EIL Calculation Spreadsheet was used for the calculation of EILs for natural soils. The output of the calculation presents the site-specific EIL (ABC + ACL) determined for each analyte. The ABC was determined using Hamon (2004). The EIL for the site fill and natural materials are presented in **Appendix L** and was calculated using the following parameters calculated from the average of laboratory analysis of samples as summarised in **Table 21**.

Table 21. Site-specific EIL Inputs

Material	Sample ID	Rationale	Clay Content ¹	Total Iron	Cation Exchange Capacity	Total Organic Carbon	pH	Electrical Conductivity
			%	%	meq%	%		µS/cm
Overburden	EIL-3, EIL-4, EIL-5, EIL-6	Material collected from backfilled areas across the Areas 1c and 1e.	10	1.4	6.5	2.6	5.3	144
Natural	EIL-1, EIL-2	Samples collected from clay material exposed in the clay pit in the southern area of the site	40	1.9	10.3	0.9	4.8	610

Notes:

1 – clay content was estimated using soil texturing consistent with the method described in McDonald and Isbell (2021).

6 INVESTIGATION RESULTS

6.1 Soil Assessment

6.1.1 Stratigraphic Conditions

The following sections provide a summary of the stratigraphic conditions encountered in each area.

6.1.1.1 Stockpiles

Four stockpiles were sampled within Area 1a, with the following lithologies recorded:

- SP01 (~70 m³) – white to light grey, residual soil siltstone
- SP02 (~50 m³) – light brown sandy gravelly clay
- SP03 (~35 m³) – dark grey to brown gravelly clayey sand
- SP04 (~35 m³) – light brown clayey gravelly sand

No foreign materials, wastes, staining or odours were observed in any stockpiled material sampled. The stockpile volumes were estimated in the field during the site inspection.

6.1.1.2 Lithological Profile

The overburden backfill material across the site (Areas 1a to 1e, Area 2, Area 3 and Area 4) was relatively consistent in composition containing boulders, cobbles, gravel, sand and clay. The visible clasts were made up of coal, siltstone, mudstone and sandstone consistent with natural geology observed within the site. The maximum depth of filling within the site was identified at BH15, to a depth of 32 mBGL. No putrescible waste, ash, odours or staining was observed in overburden material. No PID results reported readings above background.

The coal fines stockpile of investigation Area 2 was confirmed to contain fill comprising gravels, clay and sand with coal, sandstone and siltstone fragments throughout. Traces of waste including plastic and bricks was reported at test pit location TP077. The maximum depth of fill within the Area 2 area was 5.8 mBGL as observed at BH12.

The waste profile within the EA waste dump area was confirmed to comprise only bricks. The vertical extent of filling within the area is estimated to be up to 7 m deep, as indicated by the advancement of BH03.

Fill depth are shown on the conceptual geological cross-sections presented in

Figure F9 .

6.1.2 Soil Laboratory Data

Soil laboratory data is presented in **Table T1** to **Table T6**, with a summary of the results provided in the sections below.

6.1.2.1 Heavy Metals

Of the samples analysed, no samples reported exceedances of human health assessment criteria for heavy metals concentrations. Four samples reported results above the site-specific EILs for zinc in overburden fill material (190 mg/kg) as summarised in **Table 22**. These results were then assessed against the NEPM (2013) statistical tests (**Table 23**) which confirmed the dataset indicates that the material complies with the EIL for Urban Residential and Public Open Space for fill and natural. Copies of the statistics for the dataset are presented in **Appendix W**.

Chromium reducible sulfur (CRS) was analysed on 19 samples from the coal fines stockpile area which the range of 0.006 – 0.224% sulfur and an average of 0.023%.

Table 22. Heavy Metals Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
1a	Zinc	TP043_0.2 (200 mg/kg)	Site-Specific EILs for Urban Residential & Public Open Space (210/230 mg/kg).
1b		TP011_0.5 (200 mg/kg)	
1d		- BH15_3.0 (340 mg/kg) - BH15_4.0 (210 mg/kg)	

Table 23. Statistical Summary Zinc

Type	Statistical Summary		Criteria (Section 0)	Satisfies NEPM Criteria (Section 0)
Fill	Values (including QAQC)	240	-	-
	Minimum	5 mg/kg	-	-
	Maximum	340 mg/kg	575 mg/kg (250 % the EIL)	Yes
	Median	72.5 mg/kg	EIL = 230 mg/kg	Yes
	Mean	73.06 mg/kg	EIL = 230 mg/kg	Yes
	Standard Deviation	41.54 mg/kg	115 mg/kg (50% of the EIL)	Yes
	95% Upper Confidence Level (Student-t UCL)	77.49 mg/kg	EIL = 230 mg/kg	Yes
Natural	Values (including QAQC)	85	-	-
	Minimum	4 mg/kg	-	-
	Maximum	230 mg/kg	525 mg/kg (250 % the EIL)	Yes
	Median	39 mg/kg	EIL = 210 mg/kg	Yes
	Mean	48.38 mg/kg	EIL = 210 mg/kg	Yes
	Standard Deviation	39.05 mg/kg	105 mg/kg (50% of the EIL)	Yes
	95% Upper Confidence Level (Student-t UCL)	56.05 mg/kg	EIL = 210 mg/kg	Yes

6.1.2.2 Cyanide

All samples analysed reported concentrations of cyanide less than the adopted assessment criteria or below the laboratory LOR.

6.1.2.3 TRH and BTEXN

Exceedances of the adopted assessment criteria for TRH have been summarised in **Table 24**. Samples that initially exceeded the NEPM ESLs for Urban Residential (fine soil) and/or the NEPM HSL-A/B for Vapour Intrusion (clay) were subsequently re-tested following a silica-gel cleanup. Only exceedances of the criteria following re-analysis after silica-gel cleanup have been included in the exceedance summary, with the exception of QA/QC samples which reported exceedances as these were not included for silica-gel cleanup analysis. These results were then assessed against the NEPM (2013) statistical tests (**Table 25**) which confirmed the dataset indicates that the material complies with the ESL for Urban Residential, fine soil. Copies of the statistics for the dataset are presented in **Appendix W**.

All samples analysed reported concentrations of BTEXN below the assessment criteria or laboratory LOR.

Table 24. TRH/BTEXN Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
1d	TRH C ₁₀ -C ₁₆	- TP093_2.0 (QC206) (310 mg/kg) - BH07_1.0 (QC115) (130 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (120 mg/kg).
	TRH C ₁₀ -C ₁₆ (F2 minus Naphthalene)	TP093_2.0 (QC206) (310 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (120 mg/kg).

Investigation Area	Analyte	Exceedances	Criteria
1e			NEPM 2013 HSL for Vapour Intrusion, Clay (280 mg/kg)
		• BH07_1.0 (QC115) (130 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (120 mg/kg).
	TRH C ₁₆ -C ₃₄	• TP093_2.0 (QC206) (1,400 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (1,300 mg/kg).
	TRH C ₁₀ -C ₁₆	• TP073_1.0 (QC101) (300 mg/kg) • BH13_0.5 (QC118) (140 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (120 mg/kg).
1e	TRH C ₁₀ -C ₁₆ (F2 minus Naphthalene)	• TP073_1.0 (QC101) (300 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (120 mg/kg). NEPM 2013 HSL for Vapour Intrusion, Clay (280 mg/kg)
		• BH13_0.5 (QC118) (140 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (120 mg/kg).
	TRH C ₁₆ -C ₃₄	• TP073_1.0 (QC101) (1,670 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (1,300 mg/kg).
1e	TRH >C ₁₀ -C ₁₆ (after silica-gel cleanup)	• TP073_1.0 (190 mg/kg)	NEPM 2013 ESLs for Urban Residential, Fine Soil (120 mg/kg).
2		• TP076_0.1 (180 mg/kg)	
Balance of Site		• TP001_0.5 (130 mg/kg)	

Table 25. Statistical Summary TRH >C₁₀-C₁₆

Statistical Summary		Criteria (Section 0)	Satisfies NEPM Criteria (Section 0)
Values (excluding QAQC)	281	-	-
Minimum	<50 mg/kg	-	-
Maximum	190 mg/kg	300 mg/kg (250 % the ESL)	Yes
Median	50 mg/kg	ESL = 120 mg/kg	Yes
Mean	58.25 mg/kg	ESL = 120 mg/kg	Yes
Standard Deviation	28.42 mg/kg	60 mg/kg (50% of the ESL)	Yes
95% Upper Confidence Level (Student-t UCL)	60.88 mg/kg	ESL = 120 mg/kg	Yes

Notes:

Statistical Tests completed in accordance with **Section 0**. Results following silica gel cleanup were used where available and as silica gel was only completed on primary samples, QAQC samples were excluded from the assessment.

6.1.2.4 PAH and Phenols

One sample (TP070_1.0 (QC202)) reported concentrations of benzo(a)pyrene in exceedance of the NEPM 2013 ESLs for urban residential land uses in fine soil at 1.0 mg/kg. However, this sample reported concentrations below the CRC Care high reliability derived ecological guideline value for benzo(a)pyrene. The primary and blind duplicate samples from the same location reported concentrations below the LOR. All other samples analysed reported concentrations of PAH and phenols less than the adopted assessment criteria or below the laboratory LOR. It is noted that detectable concentrations of PAH were identified, however they were reported below the relevant criteria.

6.1.2.5 Organochlorine and Organophosphorus Pesticides

All samples analysed reported concentrations of organochlorine and organophosphorus pesticides below the adopted assessment criteria or below the laboratory LOR.

6.1.2.6 SVOC/VOC

All samples analysed for VOCs and SVOCs reported concentrations either below the laboratory LOR or relevant site criteria. Detectable concentrations of dibenzofuran were identified at GW01_0.5 and TP122_0.5.

6.1.2.7 Polychlorinated Biphenyls

All samples analysed for PCBs reported concentrations below the laboratory LOR.

6.1.2.8 PFAS

All samples analysed reported concentrations of PFAS below the adopted assessment criteria or below the laboratory LOR.

6.1.2.9 Asbestos

Asbestos was not detected above the laboratory LOR in any of the samples analysed.

6.2 Groundwater Assessment

6.2.1 Field Parameters

Groundwater water quality parameters were recorded in field during purging of groundwater bores. Groundwater was observed to be neutral to basic (pH 6.60 [GW01] – 9.76 [PE01]) and brackish to saline (Electrical Conductivity 1,740 $\mu\text{S}/\text{cm}$ [GW01] – 6,333 $\mu\text{S}/\text{cm}$ [PE01]). Field parameters were recorded on Epic's standard groundwater field sheets (**Appendix P**) and are summarised in **Table 26**. It is noted that potential vandalization of PE01 may have impacted the integrity of the groundwater bore.

Table 26. Groundwater Field Parameters

Well ID	pH	EC	ORP	DO	Temperature	Colour	Odour
	-	$\mu\text{S}/\text{cm}$	mV	ppm	$^{\circ}\text{C}$	-	-
GW01	6.60	1,740	23.0	0.00	23.1	Clear	Sulfuric
GW02	6.95	4,105	-28.4	0.06	23.1	Cloudy brown	Swampy
GW03	7.08	4,334	-67.0	0.00	22.6	Cloudy	Sulfuric
GW04	Bore Dry						
GW05	Bore Dry						
GW06	Bore Dry						
PE01	9.76	6,333	-195.1	0.00	22.6	Cloudy	Sulfuric

It is noted in the groundwater field sheets provided in **Appendix P**, that a SWL was reported in GW06 at 30.03 m btoc. It is understood that during development, drilling muds were removed and the reported water in the well is potentially remaining water from the development and not actual groundwater. Epic purged 5 L prior to the well being dry and no further groundwater was able to be extracted from GW06. No sampling was undertaken and the field parameters have not been recorded in **Table 26** due to insufficient groundwater in GW06.

6.2.2 Groundwater Gauging Data

Groundwater Standing Water Levels (SWLs) were recorded for each well prior to purging and sampling. A summary of groundwater gauging data is provided in **Table 27**. No groundwater was identified in the backfilled overburden material. Groundwater flow direction was not able to be determined due to groundwater being greater than 32 mBGL. Potential tampering was observed on PE01 which was missing a lock, was uncapped and was noted to have potential burn marks on casing. PE01 was also initially blocked with roots and grasses which was cleared during development.

Table 27. Groundwater Gauging Data

Well ID	Screened Lithology	Date Measured	Top of Casing Elevation (mAHD)	Depth to Water (mBTC)	Total Depth of Well (mBTC)	SWL (mAHD)
GW01	Mine void and siltstone	1 August 2023	58.781	12.81	33.74	45.971
GW02	Shale and sandstone	2 August 2023	68.993	19.81	36.85	49.183
GW03	Bituminous	1 August 2023	60.694	10.02	30.64	50.674
GW04	Coal, siltstone	12 July 2023	53.753	DRY	27.81	DRY
GW05	Overburden backfill	1 August 2023	80.627	DRY	26.3	DRY
GW06	Bituminous Coal, siltstone	1 August 2023	81.124	30.03	33.04	51.094
PE01 ¹	Mine void and shale	1 August 2023	59.171	9.94	32.82	49.231

Notes:

1- PE01 was located offsite and was installed as MW01 from a historic investigation detailed in **Section 2.4.3**

6.2.3 Groundwater Laboratory Data

Groundwater laboratory data is presented in **Table T7**.

6.2.3.1 Physio-Chemical Properties

Exceedances of the adopted assessment criteria for physio-chemical analytes are summarised in **Table 28**.

Table 28. Physio-Chemical Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
Area 1e	Field Electrical Conductivity	• GW01 (1,740 µS/cm)	EPP 2019 Bremer River Drinking Water EV WQOs (450 µS/cm)
	Field Dissolved Oxygen	• GW01 (0.0%)	EPP 2019 Bremer River Drinking Water EV WQOs (85%)
	Total Dissolved Solids	• GW01 (1,220 mg/L) • GW01 (QC100) (1,200 mg/L) • GW01 (QC200) (1,200 mg/L)	EPP 2019 Bremer River Drinking Water EV WQOs (600 mg/L)
	Sodium	• GW01 (QC200) (310 mg/L)	EPP 2019 Bremer River Drinking Water EV WQOs (180 mg/L)
	Hardness as CaCO ₃	• GW01 (QC200) (470 mg/L)	EPP 2019 Bremer River Drinking Water EV WQOs (200 mg/L)
	Field Electrical Conductivity	• GW03 (4,334 µS/cm)	EPP 2019 Bremer River Drinking Water EV WQOs (450 µS/cm)
	Field Dissolved Oxygen	• GW03 (0.0%)	EPP 2019 Bremer River Drinking Water EV WQOs (85%)
	Total Dissolved Solids	• GW03 (2,980 mg/L)	EPP 2019 Bremer River Drinking Water EV WQOs (600 mg/L)
Balance of Site	Field pH	• PE01 (9.76)	EPP 2019 Bremer River Drinking Water EV WQOs (6.5-8.5)
	Field Electrical Conductivity	• GW02 (4,105 µS/cm) • PE01 (6,333 µS/cm)	EPP 2019 Bremer River Drinking Water EV WQOs (450 µS/cm)
	Field Dissolved Oxygen	• GW02 (0.73%) • PE01 (0.0%)	EPP 2019 Bremer River Drinking Water EV WQOs (85%)

	Total Dissolved Solids	- GW02 (2,830 mg/L) - PE01 (4,270 mg/L)	EPP 2019 Bremer River Drinking Water EV WQOs (600 mg/L)
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6.2.3.2 Heavy Metals

Exceedances of the adopted assessment criteria for heavy metals are summarised in **Table 29**.

Table 29. Heavy Metals Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
Area 1e	Dissolved Iron	- GW01 (0.93 mg/L) - GW01 (QC200) (0.98 mg/L)	EPP 2019 Bremer River Drinking Water EVs WQOs (0.03 mg/L)
	Dissolved Manganese	- GW01 (0.672 mg/L) - GW01 (QC100) (0.733 mg/L) - GW01 (QC200) (0.73 mg/L)	EPP 2019 Bremer River Drinking Water EVs WQOs (0.01 mg/L) NEPM 2013 GILs for Drinking Water (0.5 mg/L)
Area 4	Dissolved Iron	GW03 (1.30 mg/L)	EPP 2019 Bremer River Drinking Water EVs WQOs (0.03 mg/L)
	Dissolved Manganese	GW03 (0.138 mg/L)	EPP 2019 Bremer River Drinking Water EVs WQOs (0.01 mg/L)
Balance of Site	Dissolved Arsenic	PE01 (26 µg/L)	EPP 2019 Bremer River Drinking Water EVs WQOs (10 µg/L) NEPM 2013 GILs for Drinking Water (10 µg/L)
	Dissolved Iron	- GW02 (1.04 mg/L) - PE01 (0.17 mg/L)	EPP 2019 Bremer River Drinking Water EVs WQOs (0.03 mg/L)
	Dissolved Manganese	GW02 (0.450 mg/L)	EPP 2019 Bremer River Drinking Water EVs WQOs (0.01 mg/L)
	Dissolved Nickel	GW02 (12 µg/L)	NEPM 2013 GILs for Fresh Waters (11 µg/L)

6.2.3.3 Cyanide

Exceedances of the adopted assessment criteria for cyanide are summarised in **Table 30**, all samples analysed reported concentrations of free cyanide below the laboratory LOR and assessment criteria.

Table 30. Cyanide Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
Area 1e	Cyanide (total)	GW01 (QC200) (0.015 mg/L)	NEPM 2013 GILs for freshwater
Balance of Site		PE01 (0.184 mg/L)	NEPM 2013 GILs for freshwater (0.007 mg/L) NEPM 2013 GILs for drinking water (0.08 mg/L) ADWG 2018 Health Criteria x10 (0.8 mg/L)

6.2.3.4 TRH and BTEXN

There were no exceedances of the adopted assessment criteria for TRH or BTEXN. Elevated concentrations of TRH were reported for PE01. Silica gel cleanup was completed on the sample with concentrations reported below the adopted laboratory LOR following cleanup analysis.

6.2.3.5 PAH and Phenols

All samples analysed reported concentrations of PAH and Phenols below the laboratory LOR.

6.2.3.6 Organochlorine and Organophosphorus Pesticides

All samples analysed reported concentrations of OC/OP pesticides below the laboratory LOR.

6.2.3.7 SVOC/VOC

All samples analysed reported concentrations of SVOC/VOC below the laboratory LOR. It was noted that the LOR for vinyl chloride in water samples was above the relevant site assessment criteria. However, vinyl chloride was not determined to be a contaminant of concern and was included as a part of a general SVOC/VOC suite provided by the laboratory.

6.2.3.8 PFAS

One sample reported concentrations of PFAS above the adopted assessment criteria. The remainder of samples analysed reported concentrations below the adopted assessment criteria or below the laboratory LOR. PFAS exceedances are summarised in **Table 31**.

Table 31. PFAS Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
Balance of Site	PFOS	PE01 (0.0774 µg/L)	PFAS NEMP 2020 Drinking Water (0.07 µg/L)
			PFAS NEMP 2020 Freshwater 99%
	Sum of PFHxS and PFOS	PE01 (0.0922 µg/L)	Draft ANZG (2023) Freshwater 99%
			PFAS NEMP 2020 Drinking Water (0.07 µg/L)

6.2.4 Groundwater In situ Permeability Testing

In situ permeability testing (slug testing) was completed on groundwater wells GW01, GW02 and GW03 to provide an estimation of the sites groundwater drawdown and recharge properties. A summary of the slug test outputs from Aqtesolv® are presented in **Table 32**, raw outputs are provided within **Appendix R**.

An average hydraulic conductivity (K) has been calculated from the Bouwer-Rice solution based upon the saturated screened interval position across the confined water table. Generally, the K value as m/day of the lithology within each tested monitoring well is consistent with expected values. However, there were some anomalies in the data collected and analysed, with a summary as follows:

- FHT01 at GW03 calculations returned a k value outside of the expected values and the data points for this test were questionable. Therefore, FHT01 at GW03 has been excluded from the analysis in this report. The data collected and calculations are provided in **Appendix R** to show the inconsistency between data when compared to other slug test conducted on the same well.
- RHT01 at GW02 exhibited a strange recovery pattern and it is assumed that an error occurred in the field with the logger deployment, resulting in two straight line recovery patterns. Therefore, the first line of the test was analysed for this report (refer to **Appendix R**)

Table 32. Summary of In situ Permeability Testing

Well ID	Screened Lithology	Well Depth	Screen length	SWL	Test Type	K Value - Bouwer-Rice	Average K Value - Bouwer-Rice
-	-	mbgl	m	mbtoc	RTH / FHT	m/day	
GW01	Mine void and siltstone	32.3	4.5	12.81	FHT	1.802	2.078
					FHT	2.177	
					FHT	2.255	
GW02	Shale and sandstone	35.5	6	19.81	RHT	0.001258	0.001258
GW03	Bituminous Coal, siltstone and shale	29	6	10.02	FHT*	0.07561*	0.2664
					FHT	0.2739	
					FHT	0.2601	
					FHT	0.2467	
					RHT	0.2849	

Notes:

- 1 -SWL – standing water level
- 2 - mbgl – meters below ground level
- 3 - mbtoc – meters below top of casing
- 4 - m – meters
- 5 - FHT – falling head test
- 6 - RHT – rising head test
- x – excluded from data set

It is noted that GW01 was relatively consistent with the offsite groundwater bores discussed in **Section 2.4.3**. To utilise available data to establish an estimate of groundwater velocity, two wells including GW01 and GW03 were selected for hydraulic gradient estimations. The following SWL in mAHD were calculated:

- GW01: SWL 45.97 mAHD
- GW03: SWL 50.67 mAHD

The review of SWL above, determined that GW01 was downgradient of GW03, with estimated distance of 191 m between the two groundwater bores and ΔH of 4.70 m in groundwater levels.

The borelogs (**Appendix N**) show that GW01 and GW03 are screened within siltstone / shale / mine void, with the following effective porosity values derived from Morris and Johnson 1967:

- Siltstone: 0.21 – 0.41
- Shale: 0.01 – 0.1
- Sandstone: 0.14 – 0.49

Given GW01 is installed through a mine void, it is assumed the surrounding material would be siltstone (based on Borelogs in **Appendix N**). Therefore, to be conservative the effective porosity of 0.41 has been applied to calculate groundwater velocity. A groundwater gradient of 0.025 was calculated between GW03 and GW01. Further to this, an average K value between GW01 and GW03 has been calculate at 1.1722 m/day. This K value of 1.1722 has been used for the purpose of calculating an estimate of groundwater velocity between these two groundwater bores.

To establish an estimation of groundwater velocity, the equation $V = KI/n$, is utilised, where v = groundwater velocity, K = hydraulic conductivity, I = horizontal hydraulic gradient, n = the effective porosity. Therefore, the following was input:

$$V = (1.1722 \times 0.025) / 0.41$$

$$V = 0.0715$$

Based on the above, subject effective porosity and other influences, groundwater velocity is expected to be around 0.0715 m/day.

6.3 Sediment Laboratory Data

Sediment laboratory results are tabulated in **Table T8**.

6.3.1 Heavy Metals

All samples analysed reported concentrations of heavy metals below the adopted assessment criteria or below the laboratory LOR.

6.3.2 TRH and BTEXN

One sample (SW02) initially reported concentrations of TRH >C₁₀-C₁₆ above the adopted assessment criteria (160 mg/kg). Silica gel cleanup analysis was undertaken and results following cleanup were reported below the laboratory limit of reporting. No other samples reported concentrations of TRH or BTEXN above the adopted assessment criteria.

6.3.3 PAH and Phenols

All samples analysed reported concentrations of PAH and Phenols below the adopted assessment criteria or below the laboratory LOR.

6.3.4 Organochlorine and Organophosphorus Pesticides

All samples analysed reported concentrations of PAH and Phenols below the laboratory LOR.

6.3.5 PFAS

All samples analysed reported concentrations of PFAS below the adopted assessment criteria or below the laboratory LOR.

6.4 Surface Water Laboratory Data

Surface water laboratory results are tabulated in **Table T9**.

6.4.1 Field Parameters

Surface water quality parameters were recorded in field during sampling of surface waters. Field parameters were recorded on Epic's standard surface water field sheets (**Appendix P**) and are summarised in **Table 26**.

Table 33. Groundwater Field Parameters

Well ID	pH	EC	ORP	DO	Temperature	Clarity	Colou	Odour	Flow
	-	µS/cm	mV	ppm	°C	-	-	-	-
SW01	7.29	123.1	41.9	5.6	16.4	Cloudy	Brown	None	No Flow
SW03	7.19	754	-0.3	0.2	13.7	Cloudy	Brown	Brown	No Flow

6.4.2 Physio-Chemical Properties

Exceedances of the adopted assessment criteria for physio-chemical analytes are summarised in **Table 34**.

Table 34. Physio-Chemical Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
Area 2	Field Electrical Conductivity	• SW03 (754 µS/cm)	EPP 2019 Bremer River WQOs Upland Fresh Waters, Moderately Disturbed – High Flow (540 µS/cm)
	Field Dissolved Oxygen	• SW03 (2.42 %)	EPP 2019 Bremer River WQOs Upland Fresh Waters, Moderately Disturbed – High Flow (90-110%)
Balance of Site	Field Dissolved Oxygen	• SW01 (67.78 %)	EPP 2019 Bremer River WQOs Upland Fresh Waters, Moderately Disturbed – High Flow (90-110%)

6.4.3 Heavy Metals

Exceedances of the adopted assessment criteria for heavy metals are summarised in **Table 35**.

Table 35. Heavy Metal Exceedance Summary

Investigation Area	Analyte	Exceedances	Criteria
Area 2	Dissolved Copper	• SW03 (2 µg/L)	NEPM 2013 GILS for Fresh Waters (1.4 mg/L)
Balance of Site	Dissolved Aluminium	• SW01 (0.26 mg/L)	NEPM 2013 GILS for Fresh Waters (0.055 mg/L)

6.4.4 Cyanide

Both samples reported concentrations of cyanide below the laboratory LOR.

6.4.5 TRH and BTEXN

Both samples reported concentrations of TRH and BTEXN below the adopted assessment criteria.

6.4.6 PAH and Phenols

Both samples reported concentrations of PAH and Phenols below the laboratory LOR.

6.4.7 Organochlorine and Organophosphorus Pesticides

Both samples reported concentrations of pesticides below the laboratory LOR.

6.4.8 SVOC/VOC

Both samples reported concentrations of SVOC/VOC below the laboratory LOR.

6.4.9 PFAS

Both samples reported concentrations of PFAS below the laboratory LOR.

6.5 Gas Assessment Results

6.5.1 Excavation Void Screening

Gas screening results were collected at discretion at the base of excavation voids using a calibrated GA5000 during test pitting, with results presented in **Table 36**. None of the results reported concentrations above the adopted assessment criteria outlined in **Section 0**.

Table 36. Gas Screening Results Summary

Test Pit ID	CH ₄	CO ₂	Oxygen (O ₂)	CO	H ₂ S	Balance
	%v/v	%v/v	%v/v	ppm	ppm	%v/v
TP017	0.0	0.1	20.9	0	0	78.8
TP018	0.0	0.2	20.0	1	0	78.6
TP028	0.0	0.1	20.7	0	0	79.4
TP048	0.0	0.1	20.9	1	0	79.2
TP061	0.0	0.1	21.0	0	0	78.7
TP063	0.0	0.1	21.0	0	0	78.9
TP077	0.0	0.1	20.9	0	0	78.9
TP079	0.1	0.1	20.2	0	0	78.6
TP086	0.0	0.1	20.3	0	0	79.6
TP093	0.0	0.1	20.5	0	0	77.9
TP125	0.0	0.1	20.6	0	0	78.9
TP130	0.1	0.1	20.4	0	0	79.1

TP135	0.0	0.1	20.8	1	0	79.1
TP138	0.0	0.1	20.4	0	0	79.5

6.5.2 Gas Walkover

A surface emission walkover was completed across only the accessible areas of the site. The NSW EPA Assessment and Management of Hazardous Ground Gases Guidelines lists the threshold level for further investigation of surface emissions as 500 ppm. In addition to the surface walk over, each bore was sampled through the lowering of the probe approximately 1 m into the open hole or groundwater bore casing. None of the results recorded in the gas walkover exceeded this criterion. A summary of the results is provided in **Table 37**.

Table 37. Gas Results Summary

Number of Monitoring Points	Date Recorded	CH ₄ – Minimum (ppm)	CH ₄ – Maximum (ppm)
<i>Criteria</i>		<i>500 ppm</i>	
6,795	1 August 2023	1.9	51

7 QA/QC DATA VALIDATION

The *National Environment Protection (Assessment of Site Contamination) Measure* (as amended 2013) (ASC NEPM) Schedule B2 Guideline on-site Characterisation specifies that the nature and quality of the data produced in an investigation should be determined by the data quality objectives (DQO). As referenced by the ASC NEPM, the DQO process is detailed in the United States Environmental Protection Agency (US EPA, 2006) *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA QA/G-4: EPA/240/B-06/001), February 2006. The DQOs were specified within the SAQP and updated following the investigation are presented in **Appendix K**.

Epic has undertaken a review of the laboratory analytical results for quality control purposes; the results of the data validation process are presented in **Appendix S** and the laboratory quality control reports are included in **Appendix Q**. In summary, while some non-conformances have been identified, these are considered of minor importance and it is concluded that, based on the data collected, and an assessment of the QA/QC process and DQIs, that overall, the quality of the analytical data produced is reliable for the purpose of this investigation.

8 DISCUSSION

Prior to the acquisition of the site by Chum Street Pty Ltd (**Section 3.5**), Claypave Pty Ltd utilised the site as a mine for clay stockpiling and authorised EA waste storage from 1985 to 2021.

Intrusive testing conducted in the EA waste disposal area (**Figure F6**) confirmed that waste disposed of at this location complied with the EA conditions of the site, limited to inert waste such as clay, shales, broken bricks and grog (crushed brick), old refractories, and Kaowool (mineral wool). Based on these collected samples, there is no adverse impact on the site resulting from Claypave Pty Ltd's former operations. As part of the investigation, samples were taken from the stockpiled material from the former Claypave operations (SP01 to SP04), which did not exceed the relevant site assessment criteria. Further investigation of sediment and surface water within the clay mining pit (SW01) also did not identify any CoPCs above the assessment criteria.

Before Claypave Pty Ltd, the site was operated by Rylance Collieries & Brickwork Pty Ltd from 1885 to 1985. During this period, the site primarily served as a coal mining area using open pit and underground methods. After the closure of coal mining in Ipswich, it was reported that open cut pits were backfilled with overburden material sourced from historic operations. Site investigations confirmed that the stratigraphy aligns with this information, with no evidence of ACM, odours, staining, or subsurface demolition waste encountered at any location.

Testing conducted across and through this backfilled material did not identify CoPC above the adopted assessment criteria. This indicates that the material is suitable for the proposed land use and aligns with the site history review and preliminary conceptual site model. Groundwater investigations also revealed that underground workings are unlikely to be directly hydraulically connected to the backfilled pits. Groundwater was not encountered in groundwater bores installed within (GW05) or immediately adjacent (GW06) to the backfilled pits. Additionally, it is anticipated that the natural aquifer of the site (outside of the underground workings) is greater than 32 mBGL in the northern unmined areas, with no water encountered in GW04, which was installed into a potential coal seam between 25 mBGL and >32 mBGL. Fill material was encountered to a maximum thickness of 32 m (BH14) and with the deepest relative fill profile identified in BH13 (34.1 mAHd) which had a depth of 25.7 mBGL.

Surface water samples collected identified exceedances of the Bremer River WQO for chloride (SW01 and SW03) and dissolved iron (SW01 and SW03), while exceedances of the NEPM GILs (2013) was identified for dissolved copper (SW03) and dissolved aluminium (SW01). No exceedances were identified against human health criteria. The exceedances of the Bremer River WQOs and NEPM (2013) GILs are not considered to pose an unacceptable risk to the Bremer River and associated ecological receptors. Both SW01 and SW03 are ponded water bodies onsite with SW01 unlikely connected to the ephemeral channel based upon the topographic separation. The exceedances identified in SW03 are likely reflective of the natural geology and the presence of coal seams. The distance between SW03 and the receiving environment of the Bremer River indicate that it is likely to be diluted in a heavy rainfall event. No sediment samples collected from SW01 to SW04 exceeded the criteria.

During groundwater sampling in mining voids (PE01 and GW01), elevated levels of iron were found above the ecological assessment criteria for freshwater or WQO for the Bremer River. These results indicate an exceedance of ecological criteria; however, they are likely reflective of natural geologies, including coal, which naturally have elevated levels of heavy metals. The heavy metals identified in mine void waters included cyanide, however analysis of water for free and weak acid digest (WAD) did not identify cyanide in an un-ionised form above the LOR. In addition to heavy metals, the sum of PFOS and PFHxS in PE01 exceeded the assessment criteria for drinking water and PFOS was identified above the 99% NEMP assessment criteria for freshwater. Although this exceeds the limit for drinking water, it is considered that these concentrations could be reflecting tampering of the bore which has remained uncapped prior to this investigation for an unknown amount of time. This is based upon the concentrations identified in GW01 which was also installed hydraulic downgradient within mine void waters which did not identify any PFAS above the LOR. Groundwater levels and screening intervals of PE01 and GW01 are indicated that these bores are likely installed within the same level of mine workings, consistent with the historical review. Furthermore, it is not considered likely that waters hosted in mining voids will be used as a source of groundwater, the mining voids are dipping in a southerly and easterly direction, based upon surrounding groundwater bores (GW02 and GW03), is not expected to be

impacting upon groundwater beneath the site. Additionally, the k-values of surrounding geologies (**Section 6.2.4**) suggest that groundwater would preferentially flow mine workings rather than the siltstone. The relative depths of the coal seams are presented in the cross-sections in

Figure F9.

Exceedances of the physio-chemical properties and heavy metals in groundwater was reported in all four groundwater monitoring wells above the Bremer River Drinking Water EVs WQOs and NEPM 2013 GILs for Drinking Water (**Section 6.2.3.1** and **6.2.3.2**). The exceedances of the Bremer River WQOs and NEPM (2013) GILs for Drinking Water are not considered to pose an unacceptable risk to the Bremer River and unlikely future use of the site's groundwater for human consumption.

No samples reported concentrations in soil or water consistent with the reported waste disposal into the mine voids. Concentrations of chromium, volatile organic compounds and cyanide were reported below the laboratory's LOR and/or below the adopted assessment criteria in both soil and water samples, except for heavy metals likely reflective of the natural geology.

Additionally, chromium reducible sulfur testing of coal fines across the former coal fines stockpile area identified an average of 0.023% S. This low sulfur content (<2%) is not considered to represent a spontaneous combustion risk.

Finally, no connectivity was identified between the underground mine workings or historic opencut operations. Conceptual geological cross-sections were created based upon the findings of the intrusive works at the site, which did not identify an intersection of fill and mine voids (

Figure F9). Additionally, based upon the field observations, topography and geological mapping, normal fault is suspected to separate the underground workings and open cut mining.

The risk to receptors with respect to the groundwater identified in this investigation is considered low based upon the low-yield nature of the underlying geology, unlikely future use of flooded mine waters, depth of groundwater and the lack of connectivity identified. Based upon this low risk, a single round of groundwater sampling was determined to be suitable to determine the site's suitability for removal from the EMR. Additionally, the ephemeral nature of the onsite waterbodies, minimal risk posed by fill material onsite and the distance to the ecological receptor of the Bremer River, a single onsite surface water and sediment sampling is considered suitable for determining the site's suitability for unrestricted use.

With respect to aesthetic considerations of material onsite (NEPM, 2013, Schedule B1), the following was noted:

- No malodorous or discoloured soils were identified
- No large monolithic deposits of low-risk material were identified, with the inert waste observed in the EA disposal location containing a mixture of clays and bricks (**Plate 7**)
- No putrescible refuse was identified in significant quantities

As such, the soils on the site identified as part of this investigation are considered aesthetically suitable for sensitive land use in accordance with the NEMP (2013). The limited fly tipping is to be removed as part of the site development, with soil sampling at these locations not identifying impacts to the soils.

8.1 Revised Conceptual Site Model

Based upon the findings of this investigation the preliminary CSM has been updated and has been summarised in **Table 38**.

Table 38. Revised Conceptual Site Model

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	SPR Linkage Evaluation		Rationale
						Preliminary CSM	Revised CSM	
Onsite								
1 a – e	Overburden fill / uncontrolled filling	Heavy Metals (As, B, Ba, Be, Cd, Cr, Co, Cu, Mn, Ni, Pb, Se, V, Zn, Hg), Total recoverable hydrocarbons (TRH), benzene, toluene, xylene, naphthalene (BTEXN), asbestos, pesticides, polychlorinated biphenyl (PCB), polycyclic aromatic hydrocarbons (PAH), volatile and semi-volatile organic compounds (VOC and SVOC) and per-polyfluoroalkyl substances (PFAS)	Surface soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours/fibres	Human – Construction workers and future site users	Potential source exists	No – Source Not Identified (CoPCs not identified above assessment criteria)	Sampling at the site did not identify CoPCs above the tier 1 assessment screening criteria. As such, it is considered that overburden material does not represent a realistic source.
			Plant uptake and ingestion	Ecological – onsite flora and fauna				
	Buried mine wastes / spills	TRH, heavy metals, Cyanide, PAH, SVOCs/VOCs, Phenols and PFAS	Buried surface soils and leaching to groundwater	Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)	Potential source exists	No – Source Not Identified (CoPCs not identified above assessment criteria)	Sampling at the site did not identify CoPCs above the tier 1 assessment screening criteria. Additionally, no buried waste was encountered at any sample location that could represent a potential source.

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	SPR Linkage Evaluation		Rationale
						Preliminary CSM	Revised CSM	
	Stockpiles (Clay material)	Heavy Metals	Soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours/fibres	Human – Construction workers and future site users	Potential source exists	No – Source Not Identified (CoPCs not identified above assessment criteria)	Samples analysed of clay stockpile material did not report concentrations of heavy metals above the adopted assessment criteria. Following investigation stockpiles are not considered a source of contamination.
2	Mine spoil (coal fines / rejects)	Heavy Metals, TRH, BTEXN, Pesticides, PCB, PAH, VOC, SVOC PFAS and hazardous gases	Soil and groundwater	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users	Potential source exists	No – Source Not Identified (CoPCs not identified above assessment criteria)	Sampling at the site did not identify CoPCs above the tier 1 assessment screening criteria. As such, it is considered that coal fines/reject material does not represent a realistic source. The preliminary gas screening assessment completed across the site did not identify emissions exceeding the assessment criteria.
				Plant uptake Ingestion	Ecological – onsite flora and fauna			
				Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)			
				Plant uptake Ingestion	Ecological – onsite flora and fauna			
3	Disposed waste material	Heavy Metals, TRH, BTEXN, asbestos, pesticides, PCB. PAH, TRH, VOC, SVOC and PFAS	Soil and groundwater	Direct contact with contaminated soil Ingestion or inhalation of dust associated with	Human – Construction workers and future site users	Potential source exists	No – Source Not Identified (CoPCs not identified above	Buried waste was identified to be inert C&D waste in compliance with the site's EA. Soils within the area did not report concentrations of COPC in exceedance of the adopted assessment criteria. Surface samples collected from observed dumping

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	SPR Linkage Evaluation		Rationale
						Preliminary CSM	Revised CSM	
				impacted soils or vapours Plant uptake Ingestion			assessment criteria)	locations reported no COPC above the assessment criteria. As such, no source was identified based upon these locations. Additionally, exposed escarpments indicated that backfill material was consistent with overburden material.
4	Mine site features (tunnels and air shaft)	Unknown solvent type wastes (Hexavalent chromium, cyanide and organo-metallic compounds), ACM, VOC and SVOC, PFAS and hazardous gases	Sub-surface soil Groundwater	Direct contact with contaminated soil or groundwater Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users	Potential source identified	No – Source Not Identified (CoPCs not identified above assessment criteria)	No evidence was identified within soils or groundwater adjacent to the former mine structures. Intrusive investigations within the former mine portal did not identify CoPCs above the relevant assessment criteria.
				Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)			
				Plant uptake Ingestion	Ecological – onsite flora and fauna			
	Mine spoil	Metals, cyanide, PAH, Phenols, OCPs, OPPs	Sub-surface soil Groundwater	Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)	Potential source exists	No – Source Not Identified (CoPCs not identified above assessment criteria)	
	Refuelling Infrastructure	PAH, TRH, ACM, metals	Sub-surface soil Groundwater	Groundwater discharge of	Ecological – terrestrial fauna/flora,	Source not identified	No – Source Not Identified	Refuelling infrastructure noted offsite at the Claypave brickworks facility west of the site and it is considered

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	SPR Linkage Evaluation		Rationale
						Preliminary CSM	Revised CSM	
				impacted groundwaters	aquatic receptors (Bremer River)		(CoPCs not identified above assessment criteria)	unlikely infrastructure would be present onsite. Soil boreholes targeting the deepest potions for the backfilled pits did not identify CoPCs above the relevant assessment criteria.
				Direct contact with contaminated soil or groundwater Ingestion or inhalation of dust associated with impacted soils or vapours	Human—Construction workers and future site users			
	Mine buildings	ACM, Metals	Surface soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users	Source not identified	No – Source Not Identified (CoPCs not identified above assessment criteria)	No building infrastructure associated with mining activities was noted onsite in historical aerials or during the site inspection. The site inspection of the area surrounding the former tunnel portal in the southern area of the site did not identify any surface impacts.
Whole Site	Illegal fly tipping	Heavy Metals, TRH, BTEXN, asbestos, pesticides, PCB. PAH, TRH, VOC, SVOC and PFAS	Surface soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users	Source not identified	No – Source Not Identified (CoPCs not identified above assessment criteria)	During the site inspection, areas of illegal dumping were noted in the southwestern, southern and northern boundaries of the site where site access tracks join to the adjacent residential developments. Surface samples were collected from accessible areas of observed fly-tipping and reported no concentrations of COPC above the adopted assessment criteria.
				Plant uptake and ingestion	Ecological – onsite flora and fauna			
				Offsite				

Area of Concern	Source	CoPC	Likely Media Potentially Affected	Pathway	Receptor	SPR Linkage Evaluation		Rationale
						Preliminary CSM	Revised CSM	
Offsite	Former brickworks and adjacent industrial facilities (including USTs)	Metals, PAH, TRH, ACM	Sub-surface soil Groundwater	Groundwater discharge of impacted groundwaters	Ecological – terrestrial fauna/flora, aquatic receptors (Bremer River)	Potential source exists	No – Source Not Identified (CoPCs not identified above assessment criteria)	No source was identified in the locations investigated. Groundwater investigation did not identify impacts within groundwater outside of PE01. PFAS impacts identified within PE01 were likely associated with tampering, as no PFAS was identified in GW01 which was installed within the same coal workings.
			Surface soil	Direct contact with contaminated soil Ingestion or inhalation of dust associated with impacted soils or vapours	Human – Construction workers and future site users			

9 CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of the investigation, the following conclusions are presented:

- Investigations have confirmed that no notifiable activities are currently undertaken on the site
 - This is based upon the site history review, site inspection and intrusive investigations at the site
- No evidence was identified at the locations investigated or in the samples analysed that identify evidence of waste disposal into the mine voids
- Soil, gas, groundwater and surface water sampling programs completed at the site have not identified CoPCs above the land use criteria for human health (NEPM HIL-A/HSL-A), which would require further investigation or remediation
- It is considered this investigation has appropriately identified potential sources of site contamination on and offsite which have been appropriately assessed in accordance with relevant legislation, including but not limited to, the NEPM (2013), the NEMP (2020) and Queensland Auditor Handbook for Contaminated Land (2023)
- The land is not considered prescribed contaminated land as defined in Section 389(5) of the EP Act 1994

9.1 Site Suitability Statement

The land described as Lot 25 on SP220030 is not prescribed contaminated land and is suitable for unrestricted land use, including Land use A (Residential with garden/accessible soil; childcare centres, preschools, and primary schools with access to soil) and any sensitive land uses listed in Schedule 24 of the Planning Regulation 2017. It has been demonstrated that:

1. the land is not being used for a notifiable activity; and
2. the land is not affected by a hazardous contaminant; and
3. an appropriate assessment of site contamination has been conducted using current best practice and in accordance with the current state and Commonwealth legislation, policies and guidelines, Australian Standards, and the National Environmental Protection (Assessment of Site Contamination) Measure 1999.

As such, Outcome 1 has been met, with a copy of the site suitability statement included in **Appendix T** in compliance with DES's Queensland Auditor Handbook for Contaminated Land (2023).

10 REFERENCES

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11 LIMITATIONS AND DISCLAIMER

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FIGURES

Figure F1. Site Location

Figure F2. Site Location and Land Use

Figure F3. Regional Geology and Historic Mine Workings

Figure F4. Historic Images

Figure F5. Matters of State Environmental Significance

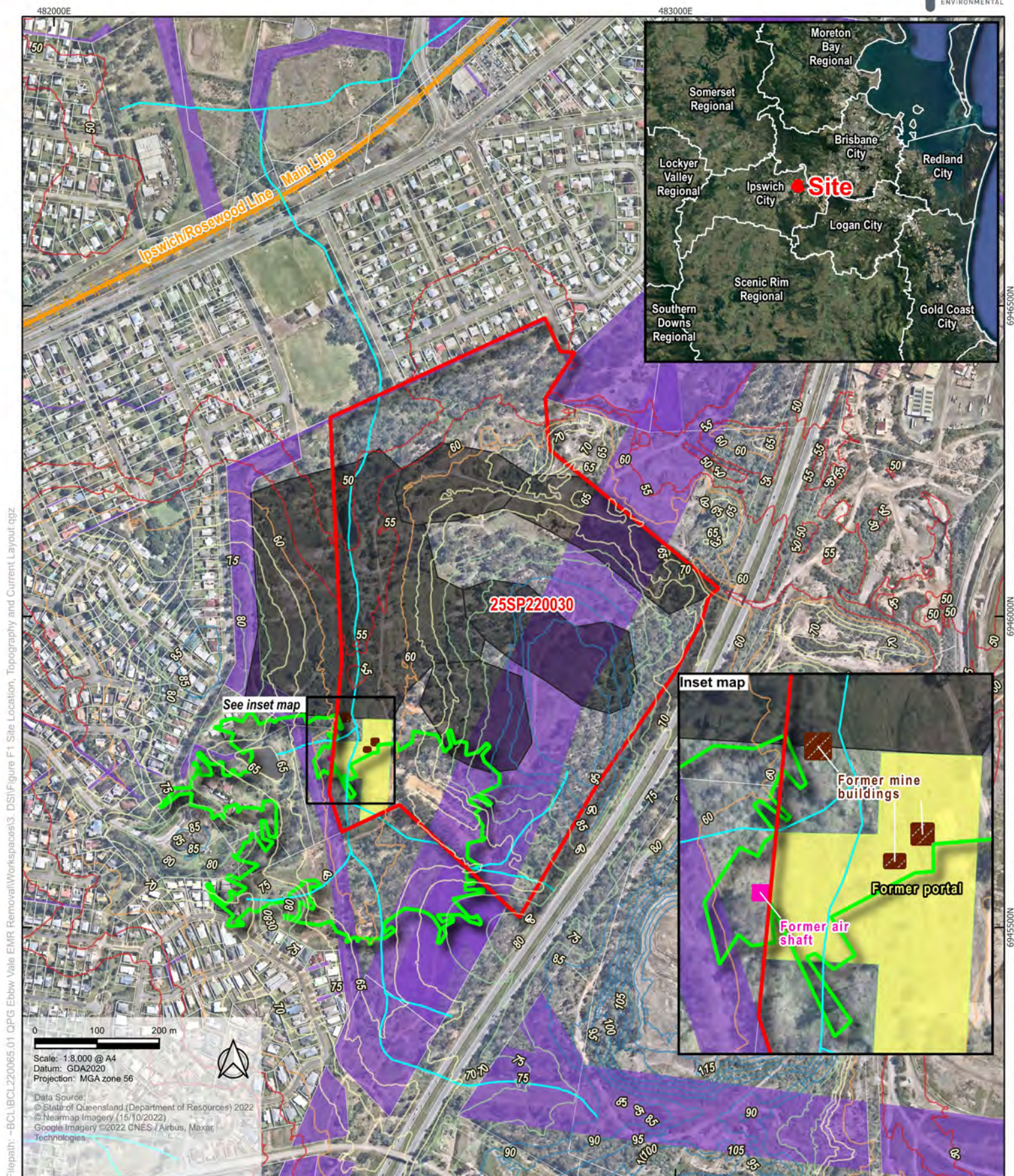
Figure F6. Site Layout and Registered Groundwater Bores

Figure F7. Areas of Potential Environmental Concern and Sampling Locations

Figure F8. Historic Mining Operations (1974) and sample locations

Figure F9. Conceptual Geological Cross-Sections





Legend

- | | | |
|--|---|---|
| Site boundary | Historic mine infrastructure | Elevation contours (mAHD) |
| Lot boundary | Former portal | — 50 - 55 |
| Easement | Former mine disturbance areas (approximate) | — 55 - 60 |
| — Railways | Former air shaft | — 60 - 70 |
| — Watercourses | Former mine buildings | — 70 - 80 |
| | Estimated extent of former underground mine workings | — 80 - 125 |

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Figure F1
Site location



Watercourses (by stream order)

— 1

— 0

Figure F2
Site locality and current zoning

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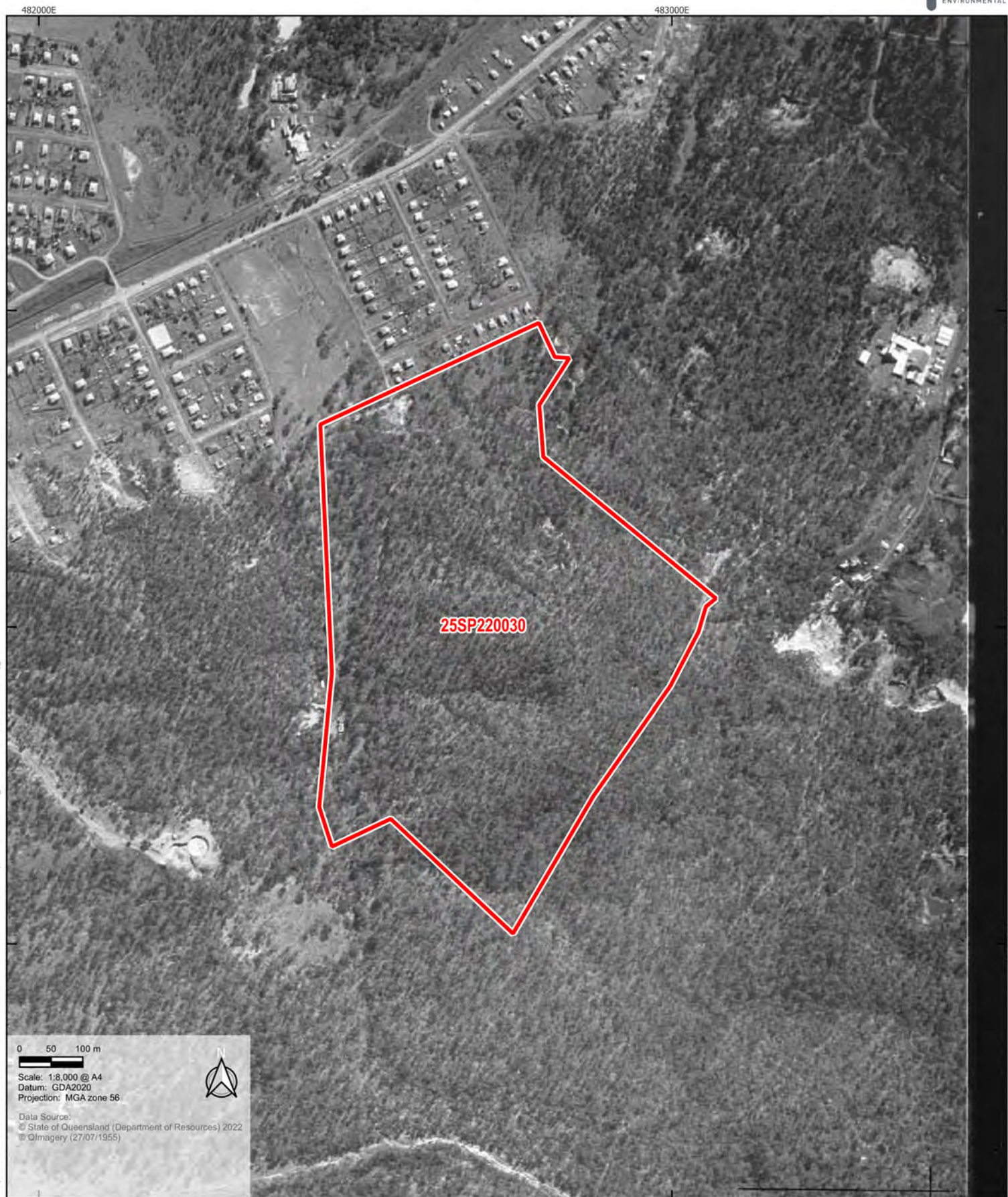
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Site boundary

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Figure F4a
1948 Historic image

Filepath: -BCL\BCL220065.01 QPG Ebbw Vale EMR Removal\Workspaces\3. DSI\Figure F4 Historical Aerials.qgz



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Datum: GDA2020
Projection: MGA zone 56
Data Source:
© State of Queensland (Department of Resources) 2022
© Imagery (27/07/1955)

Legend

Site boundary

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Figure F4b
1955 Historic image

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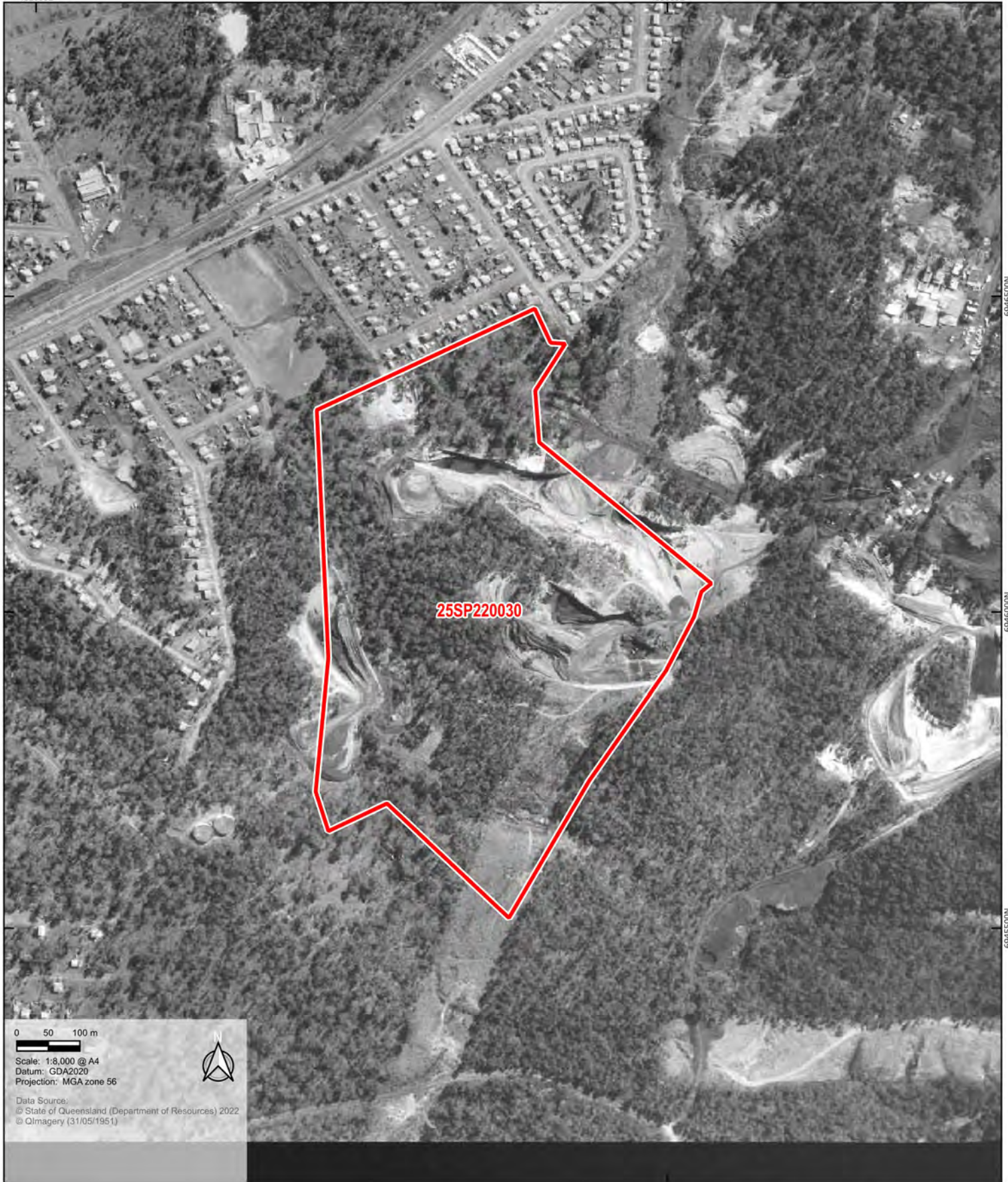
Site boundary

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Figure F4c
1959 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4d
1971 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4e
1972 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4f
1978 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4g
1987 Historic image

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Legend

 Site boundary

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Figure F4h
1990 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4i
1997 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4j
2005 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4k
2008 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4I
2012 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4m
2015 Historic image

482000E

483000E



Legend

Site boundary

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Figure F4n
2018 Historic image

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483000E

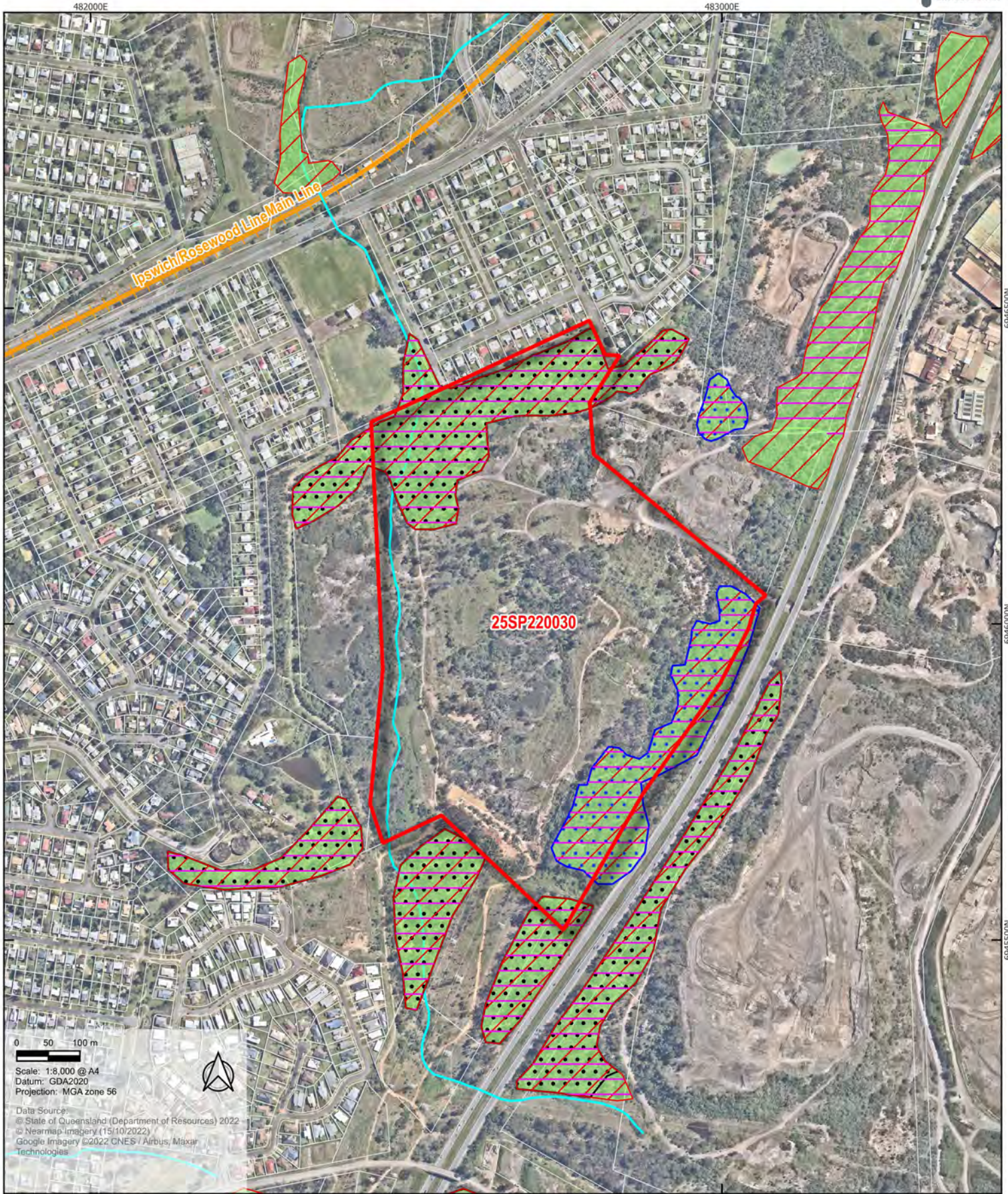


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Site boundary

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Figure F4o
2022 Historic image

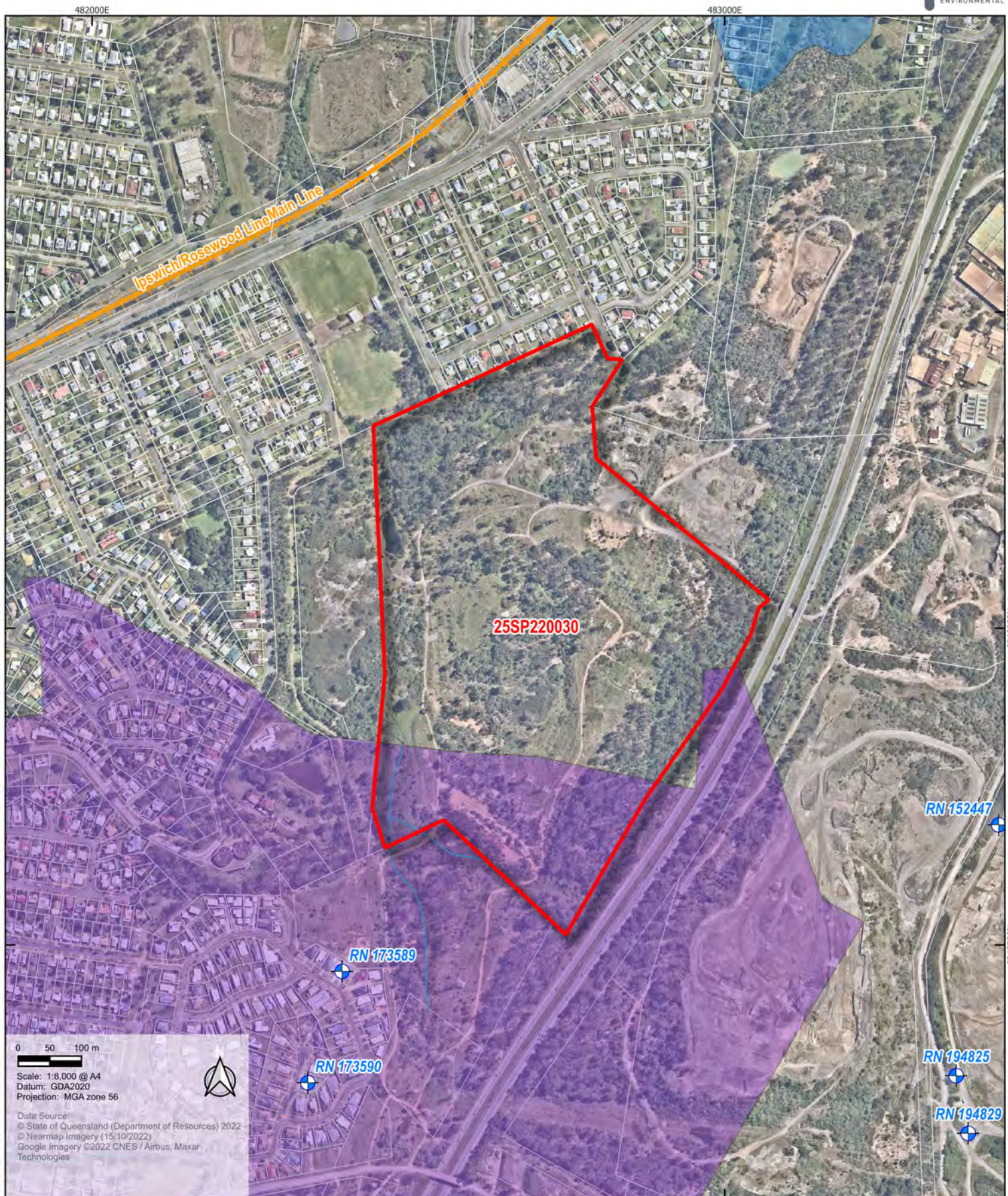


Legend

- Site boundary
- Cadastre (DCDB)
- Railways
- MSES - Regulated vegetation (category B - endangered or of concern)
- MSES - Regulated vegetation (category C - endangered or of concern)
- MSES - Regulated vegetation (essential habitat)
- MSES - Wildlife habitat (endangered or vulnerable)
- MSES - Wildlife habitat (koala habitat area - core)
- MSES - Regulated vegetation (intersecting a watercourse)

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Figure F5
a Matters of State Environmental Significance

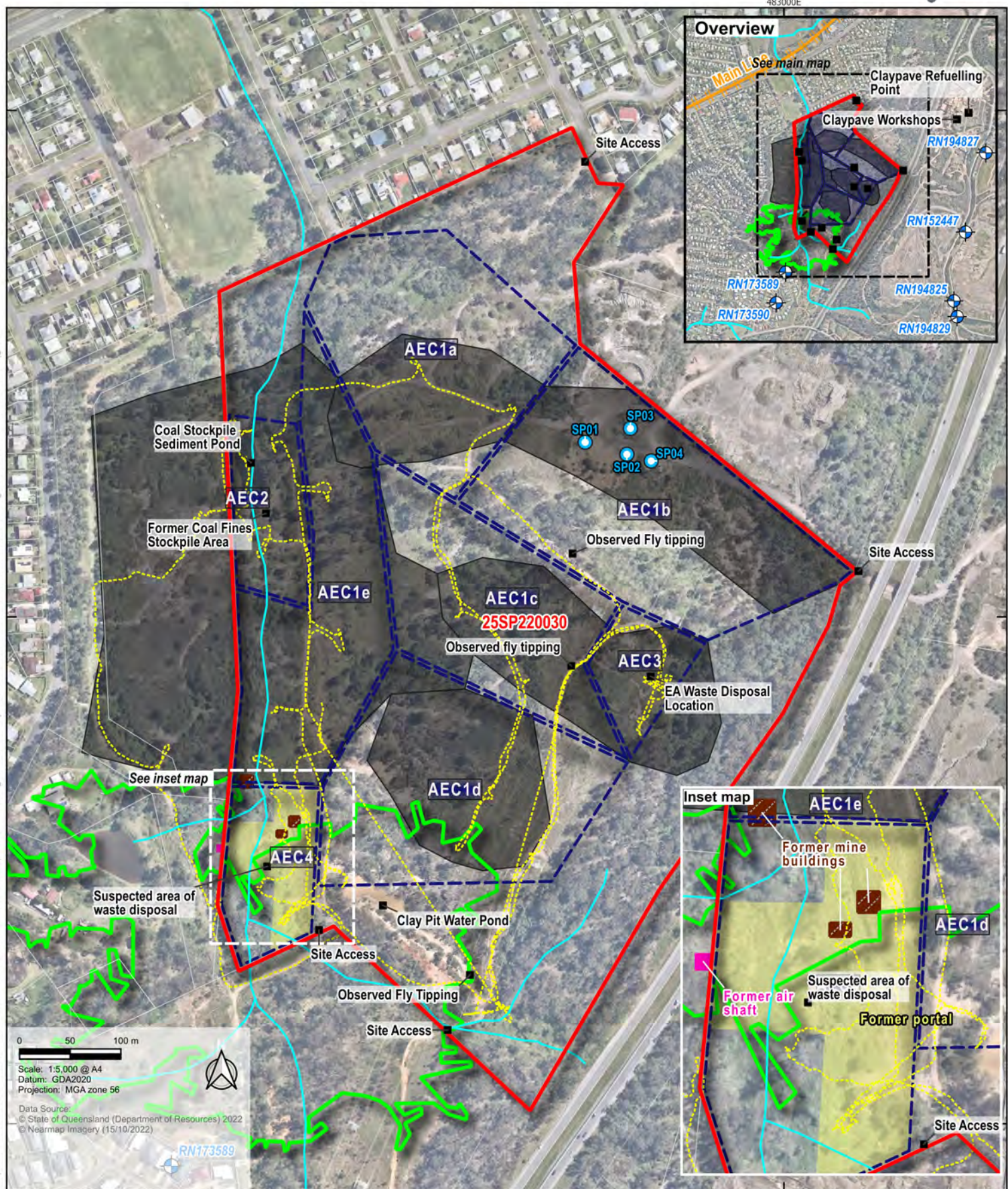


Legend

- Site boundary
- Cadastre (DCDB)
- Railways
- Potential GDE aquifers
- Unconsolidated sedimentary aquifers
- Consolidated sedimentary aquifers
- + Registered water bores

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Figure F5b
Groundwater dependant ecosystems



Legend

- Site boundary
- Lot boundary
- Areas of Environmental Concern (AEC)
- Historic mine infrastructure
- Former portal
- Former mine disturbance areas (approximate)
- Former air shaft
- Former mine buildings
- Estimated extent of former underground mine workings
- Watercourses
- Gas walkover track
- Registered water bores
- Stockpile - Epic (April 2023)

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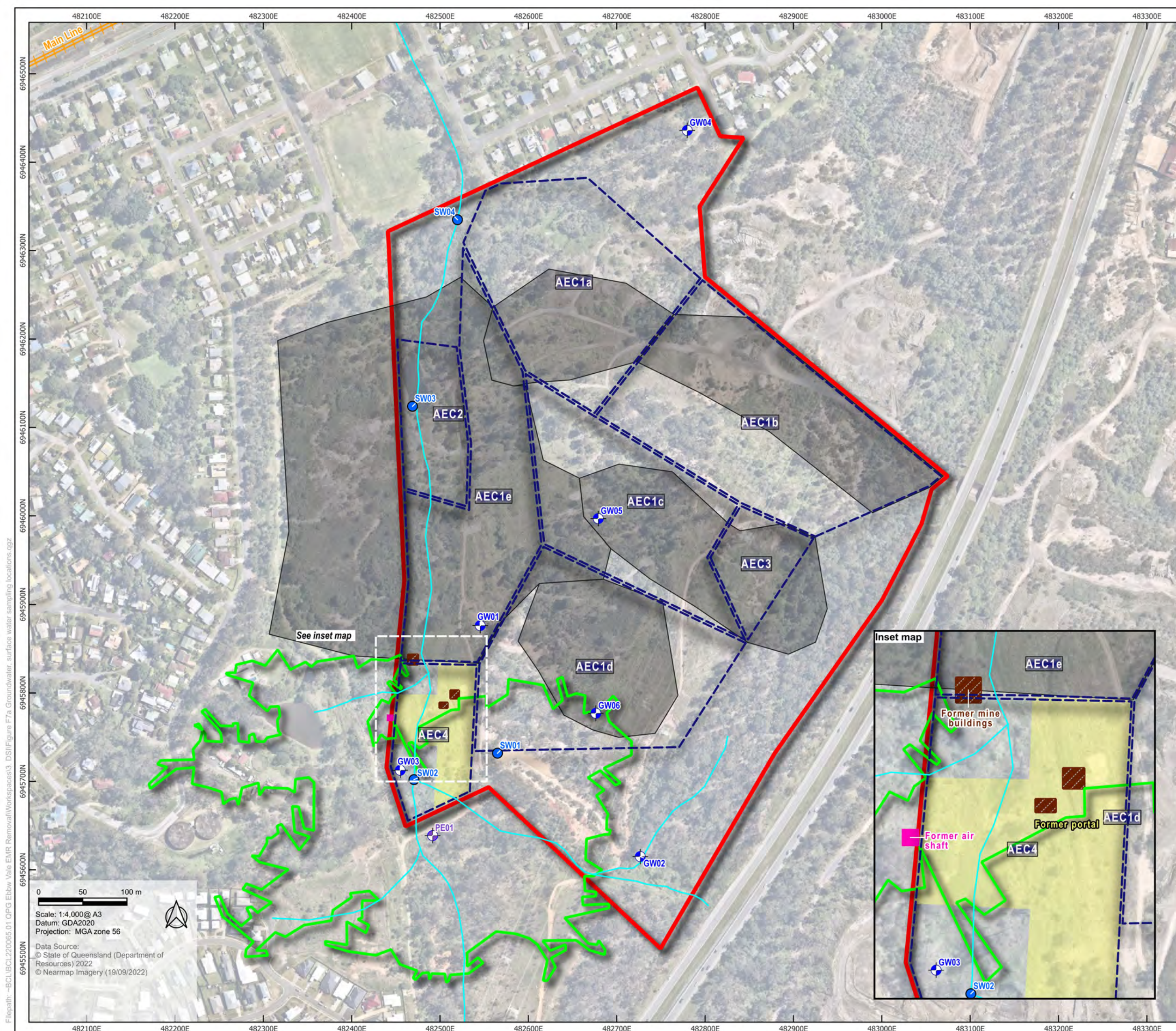
Figure F6
Site layout, areas of environmental concern
and registered groundwater bores

Legend

- Site boundary
- Areas of Environmental Concern (AEC)
- Historic mine infrastructure
 - Former portal
 - Former mine disturbance areas (approximate)
 - Former air shaft
 - Former mine buildings
 - Estimated extent of former underground mine workings
 - Railways
- Surface water and sediment - Epic (April 2023)
- Groundwater - Epic (April 2023)
- Pre-existing - Epic (2022)

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Figure F7a
Groundwater, surface water sampling
locations

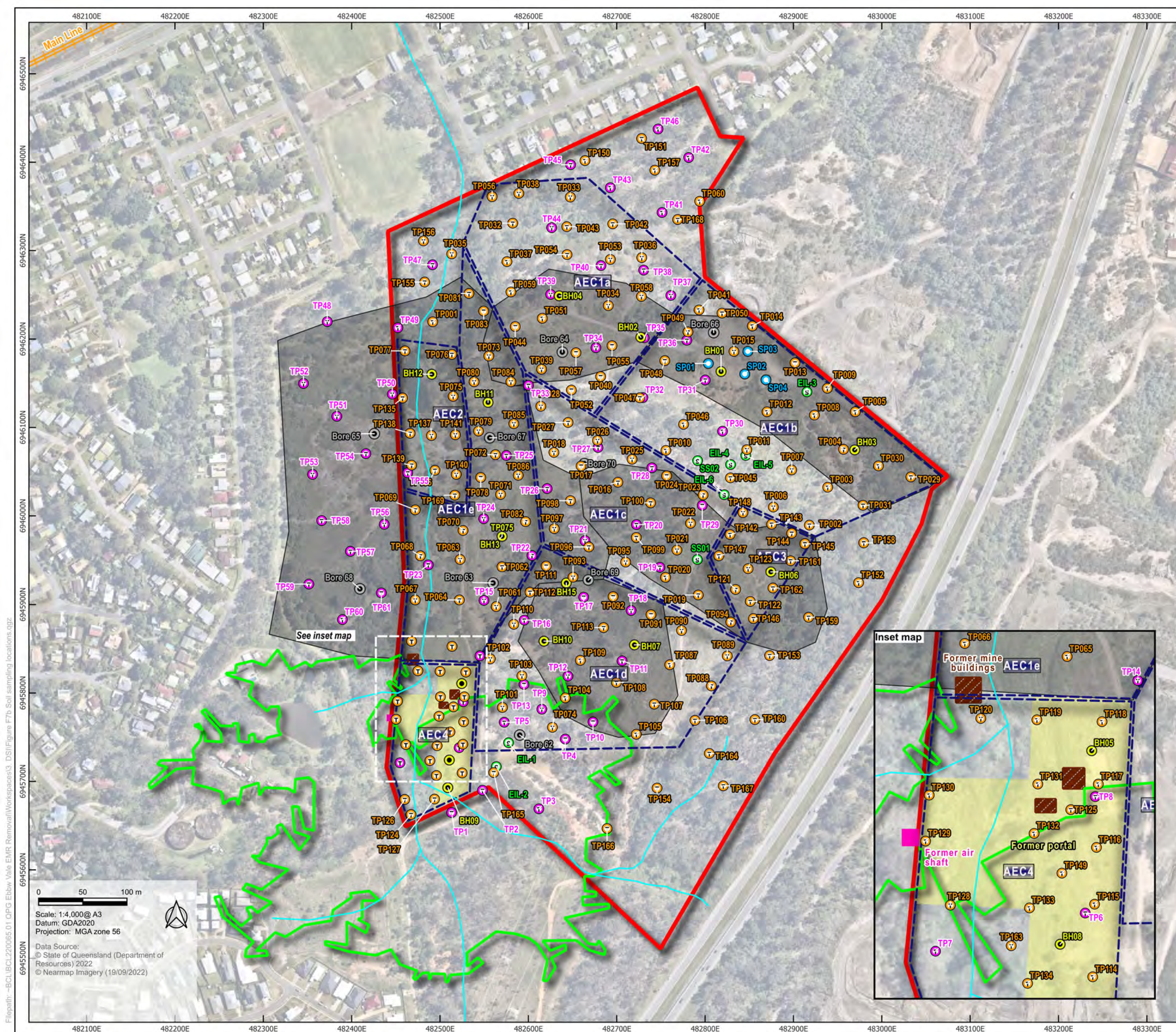


Legend

- Site boundary
- Areas of Environmental Concern (AEC)
- Historic mine infrastructure
 - Former portal
 - Former mine disturbance areas (approximate)
 - Former air shaft
 - Former mine buildings
 - Estimated extent of former underground mine workings
 - Railways
- Soil borehole - Epic (April 2023)
- Historic test pit - Butler Partners (July 2022)
- Stockpile - Epic (April 2023)
- Surface sample - Epic (April 2023)
- Test pit - Epic (April 2023)
- Historic soil borehole - Butler Partners (July 2022)

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Figure F7b
Soil sampling locations



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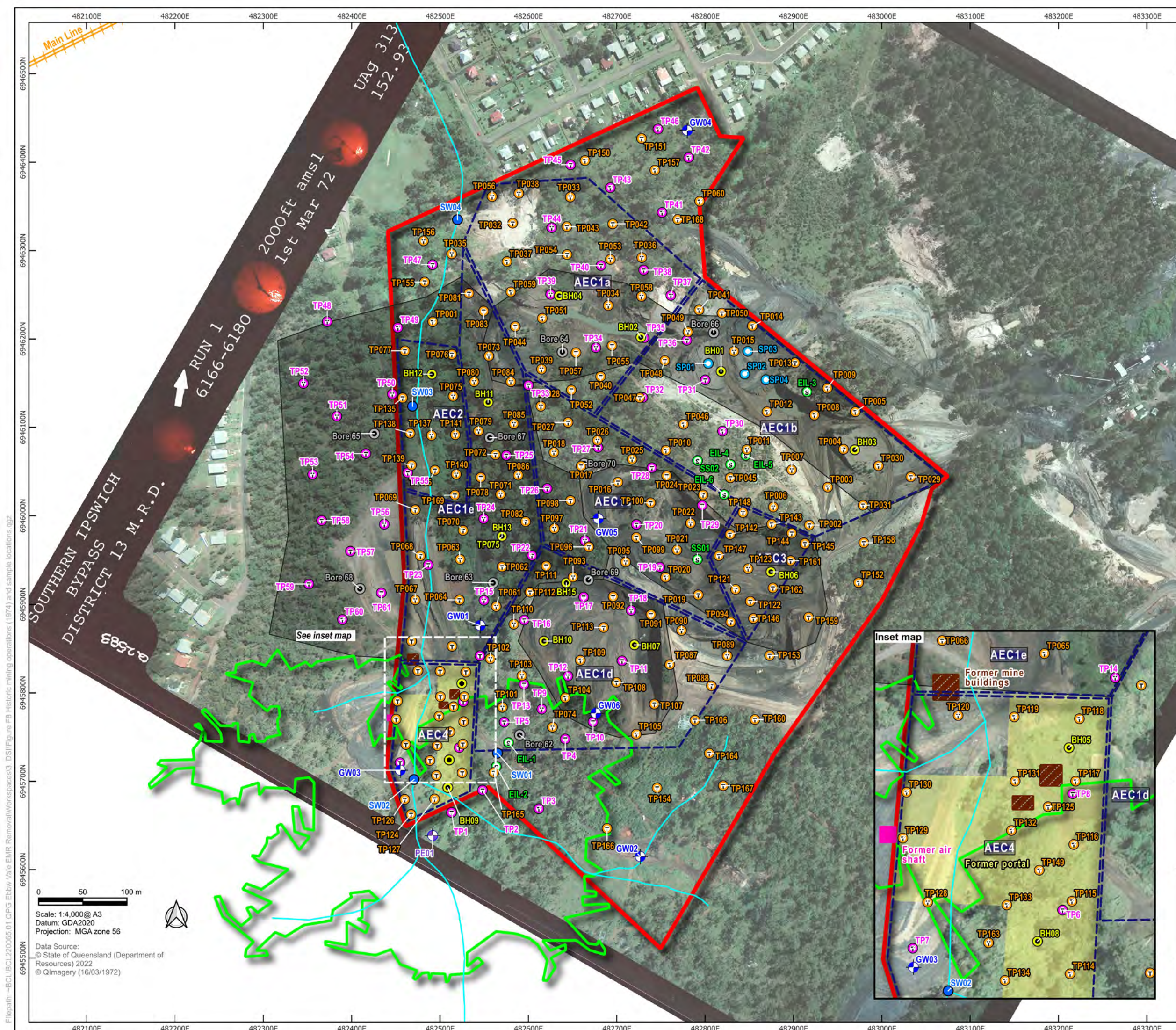
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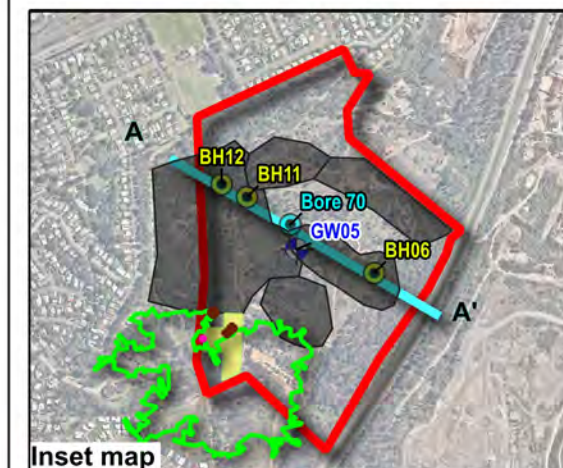
- Site boundary
- Areas of Environmental Concern (AEC)
- Historic mine infrastructure**
 - Former portal
 - Former mine disturbance areas (approximate)
 - Former air shaft
 - Former mine buildings
 - Estimated extent of former underground mine workings
 - + Railways
- Soil borehole - Epic (April 2023)
- ⊕ Historic test pit - Butler Partners (July 2022)
- Stockpile - Epic (April 2023)
- S Surface sample - Epic (April 2023)
- Surface water and sediment - Epic (April 2023)
- ⊕ Test pit - Epic (April 2023)
- ⊕ Groundwater - Epic (April 2023)
- ⊕ Historic soil borehole - Butler Partners (July 2022)
- ⊕ Pre-existing - Epic (2022)

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Figure F8
Historic mining operations (1974)
and sample locations



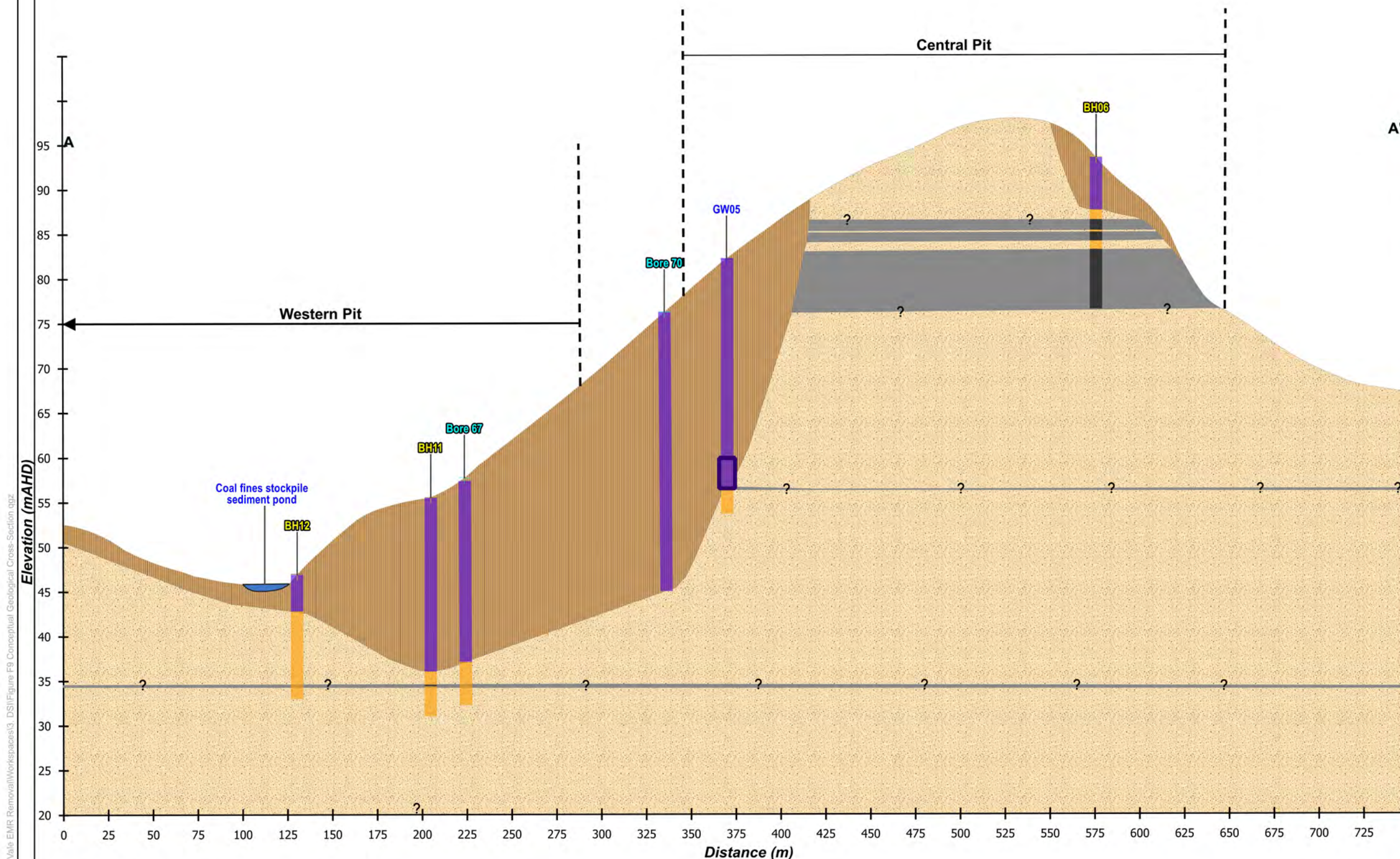
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Data Source:
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© QImagery (16/03/1972)



- Legend**
- Site boundary
 - Historic mine infrastructure**
 - Former portal
 - Former mine disturbance areas (approximate)
 - Former air shaft
 - Former mine buildings
 - Estimated extent of former underground mine workings
 - Cross section**
 - Fill
 - Natural
 - Coal seam
 - Lithology**
 - Coal
 - Fill
 - Natural
 - Screen interval
 - Void
 - Soil borehole
 - ⊕ Groundwater monitoring well
 - ⊕ Historic soil borehole

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Figure F9a
Conceptual geological cross-section A-A'

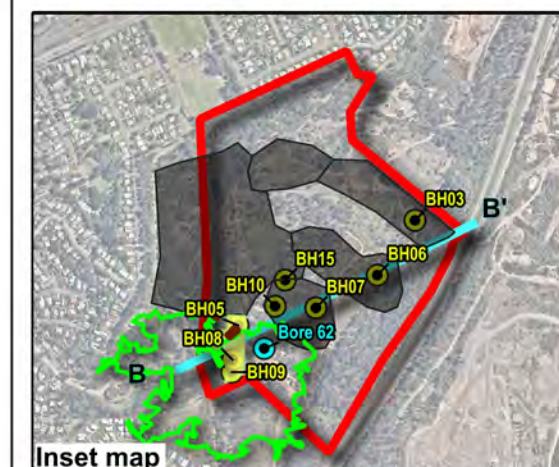


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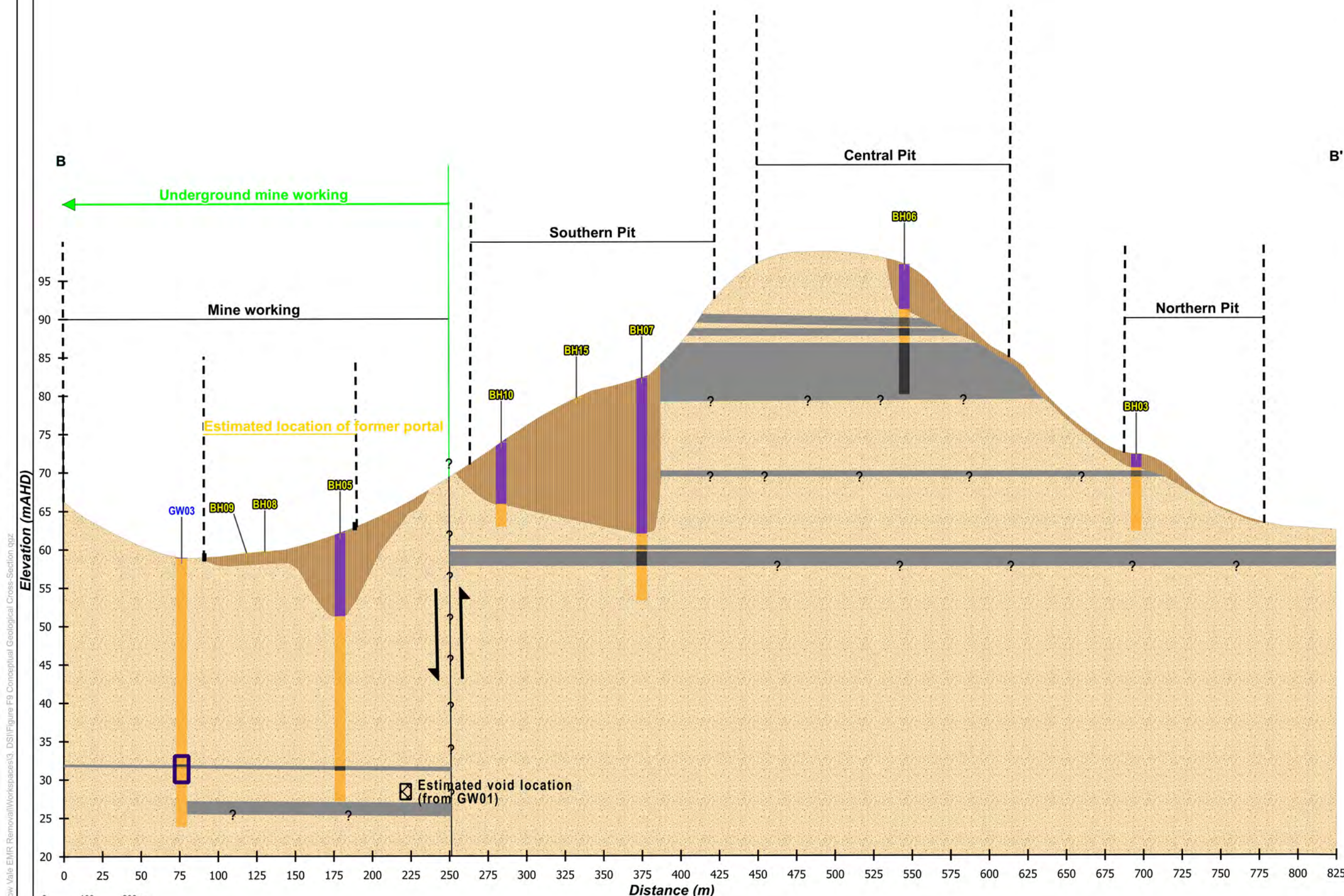
Filepath: -BCLIBCL220065.01 QPG Ebbw Vale EMR Removal\Workspaces\3 DSI\Figure F9 Conceptual Geological Cross-Section.qxd



- Legend**
- Site boundary
 - Historic mine infrastructure**
 - Former portal
 - Former mine disturbance areas (approximate)
 - Former air shaft
 - Former mine buildings
 - Estimated extent of former underground mine workings
 - Cross section**
 - Fill
 - Natural
 - Coal seam
 - Lithology**
 - Coal
 - Fill
 - Natural
 - Screen interval
 - Void
 - Soil borehole
 - Groundwater monitoring well
 - Historic soil borehole

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Detailed Site Investigation

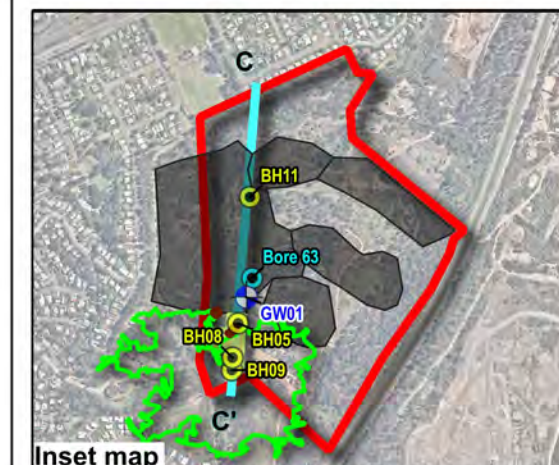
Figure F9b
Conceptual geological
cross-section B-B'



Scale: 1:9,500@ A3 (Inset map)
Datum: GDA2020
Projection: MGA zone 56

Data Source:
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Filepath: \\BCL\\BCL220065.01\\OPG Ebbw Vale EMR Removal\\Workspaces\\3_DS\\Figure F9 Conceptual Geological Cross-Section.qxd

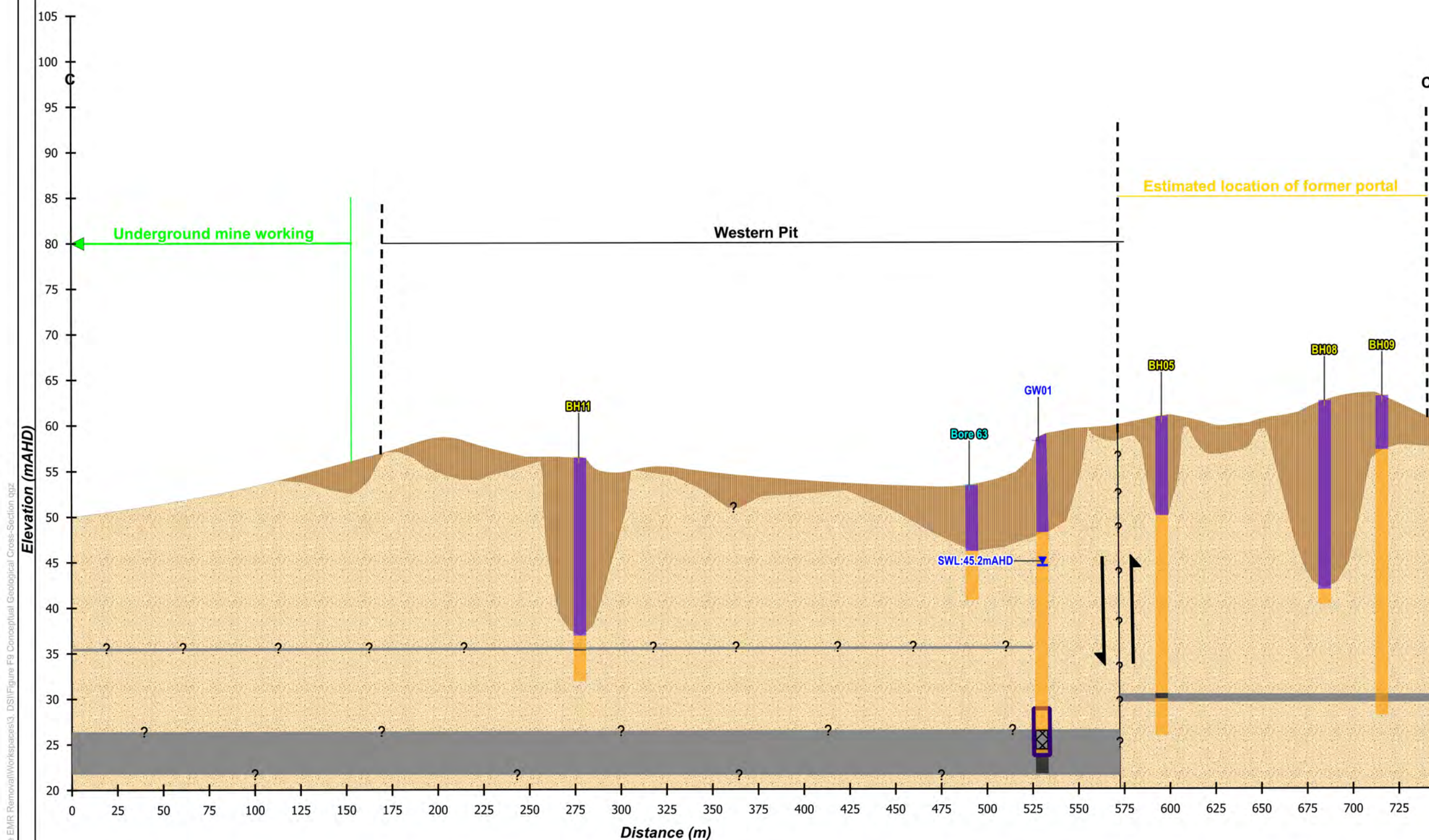


Legend

- Site boundary
- Historic mine infrastructure**
 - Former portal
 - Former mine disturbance areas (approximate)
 - Former air shaft
 - Former mine buildings
 - Estimated extent of former underground mine workings
- Cross section**
 - Fill
 - Natural
 - Coal seam
- Lithology**
 - Coal
 - Fill
 - Natural
- Screen interval
- Void
- Soil borehole
- ◆ Groundwater monitoring well
- Historic soil borehole

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Detailed Site Investigation

Figure F9c
Conceptual geological cross-section C-C'



0 100 200 m



Scale: 1:8,500@ A3 (Inset map)
Datum: GDA2020
Projection: MGA zone 56

Data Source:
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Filepath: \\BCL\\BCL220065.01\\OPG Ebbw Vale EMR Removal\\Workspaces\\3_DS\\Figure F9 Conceptual Geological Cross-Section.qxd



PLATES





Plate 1. Clay stockpiles

Clay stockpiles located at the northern area of the site. Inspection of the material confirmed the material is locally sourced from clay pits onsite



Plate 2. Coal fines stockpile area

Image of coal fines stockpile surface condition looking northwest towards the site boundary



Plate 3. Coal fines stockpile area sign

Painted concrete block confirming the area as a former coal fines stockpile



Plate 4. Coal fines stockpile sediment pond

Coal fines stockpile area sediment pond looking west



Plate 5. Northern excavated area

Image of excavated area at the northern site boundary. Material observed in the area included oxidised coal, grey sand and cobbles to boulders of sandstone and mudstone (foreground). No foreign material was observed



Plate 6. Northern excavated area profile

Image of the profile of the excavated area at the northern site boundary. Clear layers of fill are observable of consistent material. No foreign material was observed within the visible profile.



Plate 7. EA waste disposal area

Image of waste disposal area surface condition with a survey plate visible in the foreground showing the initial depth of excavation.



Plate 8. Surface condition of EA disposal area

Image of ground condition within the EA disposal area with reject bricks and clay material visible on the surface.



Plate 9. Illegally dumped material (Eastern access track adjacent to waste disposal area)

Example of illegally disposed waste material consisting of tyres, a metal box, plastic packaging and insulation wool.

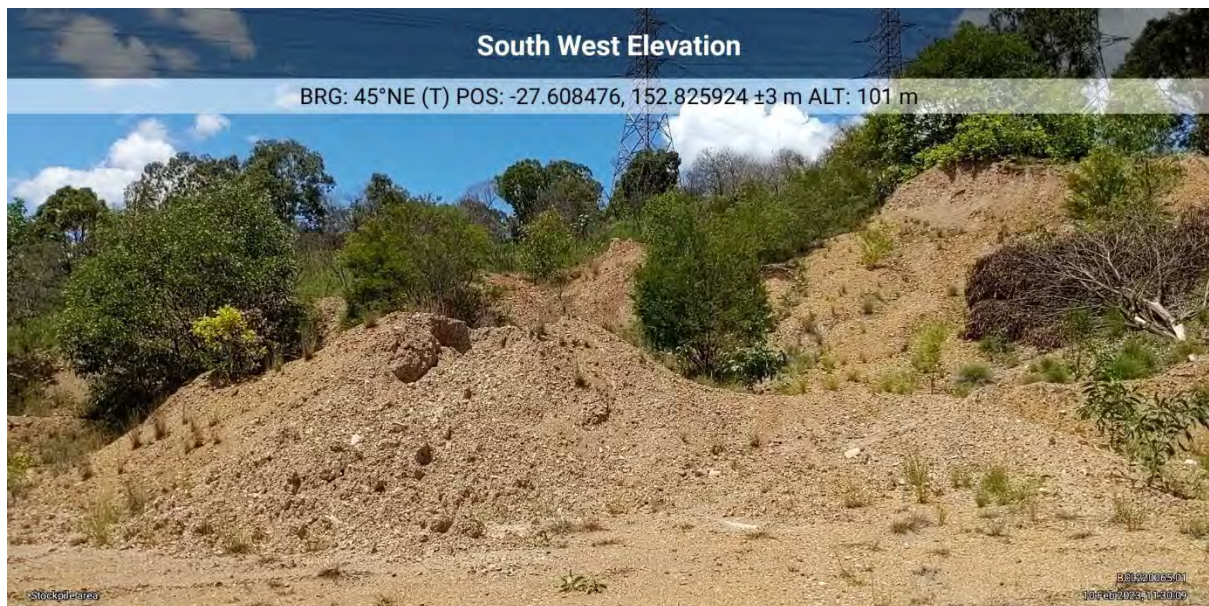


Plate 10. Escarpment of filled area looking south

Escarpment of filled area looking south towards the filled northern pit with relatively consistent material observable throughout the profile. No foreign material was observed within the fill material consisting of clays, sands and gravels to cobbles of sandstone and mudstone.



Plate 11. Surface condition of former tunnel portal

Surface condition of the backfilled former southern tunnel portal to the Rylance No. 5 Colliery underground workings. Survey pegs currently mark the estimated extents of portal and associated mine structures, with no material of demolition waste observed in the area.

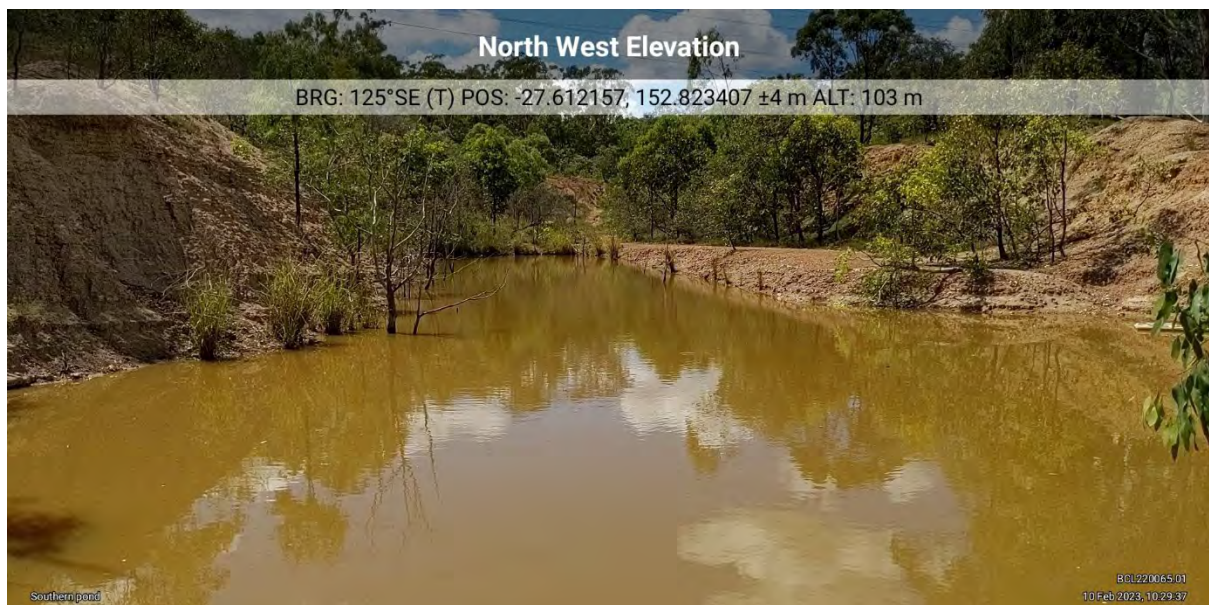


Plate 12. Southern pond

Image of the southern pond which was formally a clay pit. Area has filled with water with no sheens or odours noted during the inspection.

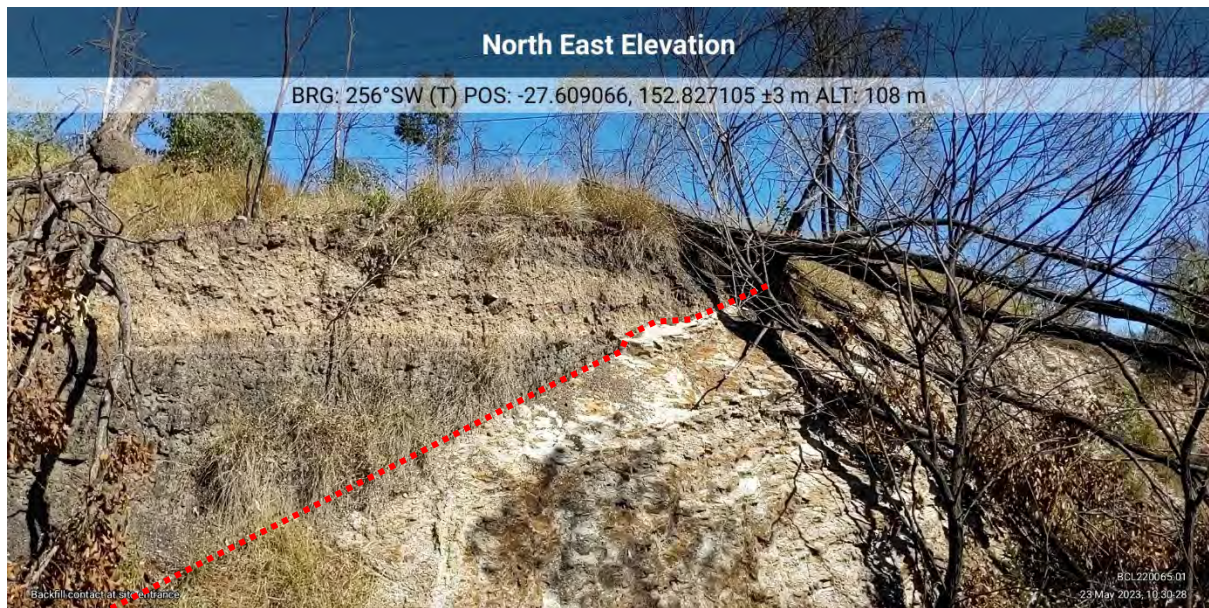


Plate 13. Exposed contact between overburden backfill and natural

Image of an exposed surface of the contact between overburden backfill and the underlying natural siltstone and sandstone. This was located immediately south of TP004 and BH03. Consistency of backfill material is visible, with colour change sourced from sandstone (light) and siltstone/coal (grey). No waste is visible in backfill material. Contact is highlighted by dashed red line.



Plate 14. Example fill profile (BH01)

Image of overburden fill profile from BH01. Material is consistent with backfill overburden material of clay, sands, silts and fragments (gravel) of residual rock (siltstone, coal and sandstone)



Plate 15. Example fill profile (BH01)

Image of overburden fill profile from TP122 from the EA disposal location. Material is consistent with the prescription of the EA, consisting of brick rejects (examples highlighted by green circles). No odours or wastes outside of the EA requirements were identified at depth (>0.5 m).



Plate 16. Interface between overburden fill and natural (TP124)

Image of overburden fill profile from TP124, with the boundary identified with a red dashed line. Material was consistent across the site, with no odours of staining present in site investigated.

TABLES

Table T1. Soil Analytical Results – Heavy Metals

Table T2. Soil Analytical Results – TRH and BTEXN

Table T3. Soil Analytical Results – Asbestos, Cyanide, PAH and Phenols

Table T4. Soil Analytical Results – Organochlorine and Organophosphorus Pesticides

Table T5. Soil Analytical Results – PFAS

Table T6. Soil Analytical Results – VOCs and SVOCs

Table T7. Groundwater Analytical Results – All Analytes

Table T8. Sediment Analytical Results – All Analytes

Table T9. Surface Water Analytical Results – All Analytes

Table T10. RPDs – Heavy Metals (Soils)

Table T11. RPDs – TRH and BTEXN (Soils)

Table T12. RPDs – Cyanide, PAH and Phenols (Soils)

Table T13. RPDs – Organochlorine and Organophosphorus Pesticides (Soils)

Table T14. RPDs – PFAS (Soils)

Table T15. RPDs – VOCs and SVOCs (Soils)

Table T16. RPDs – Groundwater (All Analytes)



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T1.Heavy Metals Soil Laboratory Results

	Metals															
	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
EQL	0.5	1	0.5	1	0.5	1	0.5	0.5	0.5	0.5	0.5	0.005	0.5	0.5	1	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil	100		60	4,500	20	100	100	100	6,000	300	3,800	40	400	200		7,400
Site-Specific EIL - Urban Res & Public Open Space (Natural Fill)	100						760 770		100 130	1,100			210 90			210 230

Date	Location Code	Field ID	Investigation Area	Soil Type																
23 May 2023	BH02	BH02_0.5	Area 1a	Fill	3	105	-	4	-	-	5	7.5	17	12	280	0.05	6.5	-	17	63
23 May 2023	BH02	BH02_0.5	Area 1a	Fill	2.5	25	<0.5	3	<0.5	-	3	6	14	9	100	0.02	5.5	<0.5	14	45
23 May 2023	BH02	BH02_1.4	Area 1a	Fill	2	29	<0.5	6	<0.5	-	3	6	20	11	170	0.025	6	<0.5	28	48
23 May 2023	BH02	BH02_1.4	Area 1a	Fill	5	69	-	7	-	-	7	12	33	13	410	0.055	11	-	31	120
24 May 2023	BH04	BH04_0.2	Area 1a	Fill	-	115	-	6	-	-	8	11	30	15	610	0.065	9	-	36	92
24 May 2023	BH04	BH04_0.2	Area 1a	Fill	3	42	<0.5	5	<0.5	-	5	7.5	15	14	390	0.02	7.5	<0.5	14	54
24 May 2023	BH04	BH04_0.2 (QC113)	Area 1a	Fill	3.5	45	<0.5	4	<0.5	-	5	4.5	10	12	140	0.025	5	<0.5	24	90
24 May 2023	BH04	BH04_0.2 (QC113)	Area 1a	Fill	4	86	-	5	-	-	11	8	31	21	380	0.07	10	-	31	105
24 May 2023	BH04	BH04_0.5	Area 1a	Natural	3	43	<0.5	5	<0.5	-	5	4	21	10	430	0.04	5.5	<0.5	18	58
24 May 2023	BH04	BH04_0.5	Area 1a	Natural	4.5	130	-	7	-	-	5.5	12	22	11	510	0.07	8	-	28	105
11 May 2023	SP01	SP01_1	Area 1a	Fill	2.5	69	<0.5	2	<0.5	-	4.5	1	9	23	62	0.01	2.5	<0.5	9	14
11 May 2023	SP01	SP01_2	Area 1a	Fill	2	61	<0.5	2	<0.5	-	5	1.5	8.5	23	10	0.02	1.5	<0.5	8	7
11 May 2023	SP01	SP01_3	Area 1a	Fill	2.5	62	<0.5	2	<0.5	-	4.5	1	9	26	14	0.015	1	<0.5	8	10
17 May 2023	SP02	SP02_1	Area 1a	Fill	2.5	44	<0.5	2	<0.5	-	4	2.5	8.5	16	16	0.005	3.5	<0.5	7	13
17 May 2023	SP02	SP02_3	Area 1a	Fill	2	52	<0.5	2	<0.5	-	4	2	7.5	19	22	0.005	4.5	<0.5	7	22
17 May 2023	SP02	SP02_4	Area 1a	Fill	2.5	45	<0.5	2	<0.5	-	4	1.5	9	17	18	0.01	3	<0.5	6	15
17 May 2023	SP03	SP03_1	Area 1a	Fill	5.5	27	<0.5	7	<0.5	-	4.5	18	28	13	390	0.035	15	<0.5	30	140
17 May 2023	SP03	SP03_3	Area 1a	Fill	4.5	41	<0.5	5	<0.5	-	9	15	32	12	170	0.03	15	<0.5	29	93
17 May 2023	SP04	SP04_2	Area 1a	Fill	2	59	<0.5	2	<0.5	-	4.5	4	6	12	22	0.01	3.5	<0.5	6	12
17 May 2023	SP04	SP04_4	Area 1a	Fill	1	52	<0.5	3	<0.5	-	5	4.5	2.5	11	13	<0.005	2.5	<0.5	5	5
09 May 2023	TP032	TP032_0.5	Area 1a	Natural	1	60	<0.5	3	<0.5	-	10	3	4.5	7.5	110	0.005	3	<0.5	10	11
09 May 2023	TP033	TP033_0.2	Area 1a	Fill	4	76	<0.5	5	<0.5	-	8	7	19	26	160	0.015	6.5	<0.5	25	130
09 May 2023	TP034	TP034_0.2	Area 1a	Fill	4.5	110	<0.5	6	<0.5	-	5	17	31	15	710	0.07	18	<0.5	18	140
15 May 2023	TP035	TP035_0.2	Area 1a	Fill	3.5	130	<0.5	7	<0.5	-	6.5	3.5	39	19	660	0.045	13	<0.5	21	95
09 May 2023	TP036	TP036_0.2	Area 1a	Fill	4	68	<0.5	7	<0.5	-	3	14	27	16	770	0.05	14	<0.5	21	110
09 May 2023	TP037	TP037_0.5	Area 1a	Natural	2.5	70	<0.5	6	<0.5	-	7.5	6	13	12	420	0.02	5.5	<0.5	21	42
09 May 2023	TP038	TP038_0.2	Area 1a	Natural	3.5	120	<0.5	6	<0.5	-	6	15	27	15	610	0.05	14	<0.5	21	92
16 May 2023	TP039	TP039_0.5	Area 1a	Fill	4.5	97	<0.5	7	<0.5	-	4.5	22	31	15	950	0.075	19	<0.5	23	110
16 May 2023	TP040	TP040_0.5	Area 1a	Fill	3.5	110	<0.5	8	<0.5	-	4.5	18	30	14	980	0.085	20	<0.5	17	82
16 May 2023	TP040	TP040_1.0	Area 1a	Natural	2.5	44	<0.5	3	<0.5	-	5.5	5.5	11	7	36	0.025	4	<0.5	10	13
09 May 2023	TP041	TP041_0.5	Area 1a	Fill	3.5	71	<0.5	5	<0.5	-	9	12	42	16	420	0.03	13	<0.5	23	76
09 May 2023	TP042	TP042_0.2	Area 1a	Fill	4	78	<0.5	8	<0.5	-	12	10	20	30	510	0.03	8	<0.5	29	100
09 May 2023	TP043	TP043_0.2	Area 1a	Fill	5	72	<0.5	5	<0.5	-	8	14	17	22	400	0.02	7.5	<0.5	21	200
16 May 2023	TP051	TP051_0.5	Area 1a	Fill	3.5	53	<0.5	3	<0.5	-	3	9.5	46	12	175	0.04	7.5	<0.5	20	95
16 May 2023	TP052	TP052_0.5	Area 1a	Natural	3	81	<0.5	4	<0.5	-	7.5	6.5	27	14	165	0.05	8	<0.5	20	41
16 May 2023	TP052	TP052_1.0	Area 1a	Natural	3.5	57	<0.5	3	<0.5	-	6.5	7	28	12	180	0.045	8.5	<0.5	18	40
10 May 2023	TP053	TP053_0.5	Area 1a	Fill	3	66	<0.5	6	<0.5	-	3.5	16	28	14	710	0.065	14	<0.5	17	93
10 May 2023	TP054	TP054_1.0	Area 1a	Natural	3	75	<0.5	7	<0.5	-	7	19	15	33	670	0.02	19	<0.5	10	36
16 May 2023	TP055	TP055_0.5	Area 1a	Fill	3.5	50	<0.5	2	<0.5	-	3	7.5	16	8	120	0.045	8.5	<0.5	31	46
10 May 2023	TP056	TP056_0.5	Area 1a	Natural	2.5	69	<0.5	3	<0.5	-	9.5	5	4.5	8	110	0.005	4.5	<0.5	12	16
16 May 2023	TP057	TP057_0.5	Area 1a	Natural	2.5	27	<0.5	2	<0.5	-	3.5	5	7	5.5	39	0.02	4	<0.5	18	15
10 May 2023	TP058	TP058_0.5	Area 1a	Fill	3.5	75	<0.5	5	<0.5	-	3	10	21	12	360	0.06	7	<0.5	14	64
10 May 2023	TP059	TP059_0.2	Area 1a	Fill	2.5	130	<0.5	4	<0.5	-	5	5	20	12	120	0.05	6.5	<0.5	21	43
21 May 2023	BH01	BH01_0.2	Area 1b	Fill	3	64	<0.5	4	<0.5	-	5.5	6.5	18	10	225	0.04	7.5	<0.5	23	62
21 May 2023	BH01	BH01_0.2	Area 1b	Fill	5	84	-	9	-	-	6	13	34	17	1,060	0.085	16	-	27	130
21 May 2023	BH01	BH01_2.6	Area 1b	Fill	5	105	-	8	-	-	7	14	34	13	470	0.07	15	-	20	100
21 May 2023	BH01	BH01_2.6	Area 1b	Fill	4	39	<0.5	5	<0.5	-	5	10	12	8	170	0.015	9	<0.5	18	83
23 May 2023	BH03	BH03_0.2	Area 1b	Fill	2	10	<0.5	2	<0.5	-	6.5	3	12	17	18	0.025	3	<0.5	13	17
23 May 2023	BH03	BH03_0.2	Area 1b	Fill	3.5	105	-	5	-	-	12	6	57	19	210	0.09	6	-	25	52
23 May 2023	BH03	BH03_1.0	Area 1b	Fill	4	93	-	6	-	-	8.5	10	19	15	540	0.02	8	-	75	64
23 May 2023	BH03	BH03_1.0	Area 1b	Fill	2	17	<0.5	3	<0.5	-	4	2	14	12	16	0.01	2.5	<0.5	15	16
08 May 2023	TP002	TP002_0.2	Area 1b	Natural	4	64	<0.5	5	<0.5	-	3.5	19	25	15	1,250	0.055	18	<0.5	13	110
08 May 2023	TP003	TP003_0.5	Area 1b	Fill	4	110	<0.5	6	<0.5	-	5.5	17	32	15	670	0.085	19	<0.5	27	99
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	Fill	3.5	115	<0.5	7	<0.5	-	5	15	29	14	670	0.08	18	<0.5	24	97
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	Fill	8	110	1	<50	<1	-	4	30	28	12	707	<0.1	23	<5	19	120
08 May 2023	TP004	TP004_0.5	Area 1b	Natural	2.5	130	<0.5	6	<0.5	-	7.5	6.5	36	14	22	0.035	2.5	<0.5	36	20
08 May 2023	TP005	TP005_0.5	Area 1b	Fill	3	43	<0.5	6	<0.5	-	7	12	36	15	390	0.075	10	<0.5	27	61
08 May 2023	TP006	TP006_0.5	Area 1b	Natural	3	24	<0.5	5	<0.5	-	4.5	13	36	16	290	0.02	14	<0.5	26	59
08 May 2023	TP007	TP007_1.0	Area 1b	Fill	5	34	<0.5	7	<0.5	-	3	19	29	15	840	0.09	18	<0.5	18	110
08 May 2023	TP008	TP008_0.5	Area 1b	Natural	2.5	52	<0.5	6	<0.5	-	4	3.5	8	10	37	0.025	6.5	<0.5	19	15
08 May 2023	TP009	TP009_0.5	Area 1b	Fill	3.5	54	<0.5	6	<0.5	-	5	12	32	12	490	0.035	12	<0.5	24	92
18 May 2023	TP011	TP011_0.5	Area 1b	Fill	5.5	150	<0.5	10	<0.5	-	6	16	29	23	1,190	0.075	12	<0.5	18	200
08 May 2023	TP012	TP012_0.5	Area 1b	Fill	3.5	180	<0.5	6	<0.5	-	5	18	20	16	1,150	0.075	11	<0.5	16	85
08 May 2023	TP013	TP013_0.2	Area 1b	Fill	3	210	<0.5	5	<0.5	-	4.5	16	38	14	330	0.045	15	<0.5	26	93
08 May 2023	TP014	TP014_0.5	Area 1b	Fill	3	57	<0.5	5	<0.5	-	6.5	14	39	15	330	0.055	13	<0.5	23	90
08 May 2023	TP015	TP015_0.5	Area 1b	Fill	3	40	<0.5	4	<0.5	-	5.5	18	39	13	560	0.04	18	<0.5	23	110
15 May 2023	TP029	TP029_0.5</																		



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T1.Heavy Metals Soil Laboratory Results

					0.5	1	0.5	1	0.5	1	0.5	0.5	0.5	0.5	0.5	0.005	0.5	0.5	1	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil					100		60	4,500	20	100	100	100	6,000	300	3,800	40	400	200		7,400
Site-Specific EIL - Urban Res & Public Open Space (Natural Fill)					100						760 770		100 130	1,100			210 90			210 230
15 Jun 2023	BH10	BH10 0.0	Area 1d	Fill	2	200	<0.5	13	<0.5	-	4.5	6	27	19	210	0.01	7.5	<0.5	33	86
15 Jun 2023	BH10	BH10 0.5	Area 1d	Fill	3	230	<0.5	5	<0.5	-	4.5	3	25	39	28	0.005	6	<0.5	22	72
15 Jun 2023	BH10	BH10 1.0	Area 1d	Fill	3.5	17	<0.5	2	<0.5	-	4	2.5	17	9	12	0.005	4	<0.5	8	39
15 Jun 2023	BH10	BH10 8.0	Area 1d	Natural	7	320	<0.5	4	<0.5	-	13	50	30	13	120	0.07	45	<0.5	12	230
03 Jul 2023	BH15	BH15 0.5	Area 1d	Fill	4.5	30	<0.5	2	<0.5	-	0.5	19	23	11	120	0.075	12	<0.5	22	140
03 Jul 2023	BH15	BH15 1.0	Area 1d	Fill	2.5	15	<0.5	<1	<0.5	-	0.5	3	26	11	10	0.09	3.5	<0.5	13	43
03 Jul 2023	BH15	BH15 10.0	Area 1d	Fill	3	16	<0.5	2	<0.5	-	1	9.5	29	14	38	0.055	8	<0.5	13	110
03 Jul 2023	BH15	BH15 12.0	Area 1d	Fill	2.5	69	<0.5	2	<0.5	-	13	2	41	12	51	0.035	1.5	<0.5	23	18
03 Jul 2023	BH15	BH15 15.0	Area 1d	Fill	4	200	<0.5	5	<0.5	-	4	13	13	15	490	0.025	11	<0.5	10	70
03 Jul 2023	BH15	BH15 17.0	Area 1d	Fill	3	180	<0.5	5	<0.5	-	4	9	24	16	330	0.065	9	<0.5	12	16
03 Jul 2023	BH15	BH15 19.0	Area 1d	Fill	4	150	<0.5	5	<0.5	-	4.5	7.5	27	16	250	0.09	7	<0.5	12	76
03 Jul 2023	BH15	BH15 2.0	Area 1d	Fill	4	14	<0.5	2	<0.5	-	1	6	31	12	53	0.065	5	<0.5	14	77
03 Jul 2023	BH15	BH15 28.0 (QC225)	Area 1d	Fill	3.5	150	<0.5	6	<0.5	-	4	12	26	15	370	0.075	13	<0.5	16	87
06 Jul 2023	BH15	BH15 28.0 (QC225)	Area 1d	Fill	12	-	<2	<10	<0.5	<1	-	21	38	21	510	<0.1	21	<2	-	130
03 Jul 2023	BH15	BH15 3.0	Area 1d	Fill	7	13	<0.5	7	<0.5	-	3	58	50	34	690	0.075	43	<0.5	23	340
03 Jul 2023	BH15	BH15 32.0	Area 1d	Natural	4.5	54	<0.5	6	<0.5	-	2.5	8.5	28	17	400	0.085	8.5	<0.5	9	74
03 Jul 2023	BH15	BH15 32.0 (QC226)	Area 1d	Natural	5.5	43	<0.5	8	<0.5	-	3	9	28	17	860	0.08	9.5	<0.5	13	98
06 Jul 2023	BH15	BH15 32.0 (QC226)	Area 1d	Natural	12	-	2.6	<10	<0.5	<1	-	25	46	19	1,200	0.2	20	<2	-	130
03 Jul 2023	BH15	BH15 4.0	Area 1d	Fill	5.5	25	<0.5	2	<0.5	-	1.5	22	51	17	170	0.05	23	<0.5	17	210
03 Jul 2023	BH15	BH15 6.0	Area 1d	Fill	4	26	<0.5	2	<0.5	-	1	9.5	38	12	59	0.06	8	<0.5	16	110
03 Jul 2023	BH15	BH15 8.0	Area 1d	Fill	1.5	44	<0.5	4	<0.5	-	6.5	1	11	9	18	0.02	1	<0.5	17	9
03 Jul 2023	GW06	GW06 0.0	Area 1d	Fill	3.5	110	<0.5	4	<0.5	-	2.5	11	12	12	180	0.01	6.5	<0.5	11	44
03 Jul 2023	GW06	GW06 0.0 (QC128)	Area 1d	Fill	4	230	<0.5	4	<0.5	-	3.5	13	14	13	320	0.015	8.5	<0.5	13	54
06 Jul 2023	GW06	GW06 0.0 (QC128)	Area 1d	Fill	<5	110	<1	<50	<1	-	4	14	15	9	414	<0.1	13	<5	24	47
07 Jul 2023	GW06	GW06 0.0 (QC228)	Area 1d	Fill	6.5	-	<2	<10	<0.5	<1	-	24	23	18	610	<0.1	15	<2	-	91
03 Jul 2023	GW06	GW06 0.5	Area 1d	Natural	2	70	<0.5	<1	<0.5	-	2.5	<0.5	5.5	19	6	0.005	0.5	<0.5	3	9
03 Jul 2023	GW06	GW06 1.0	Area 1d	Natural	2.5	16	<0.5	3	<0.5	-	4	1.5	5	7	7	0.01	1.5	<0.5	9	16
03 Jul 2023	GW06	GW06 1.0 (QC127)	Area 1d	Natural	3	90	<0.5	4	<0.5	-	2	1	6	7.5	11	0.02	2	<0.5	9	17
07 Jul 2023	GW06	GW06 1.0 (QC127)	Area 1d	Natural	5	50	<1	<50	<1	-	3	4	8	<5	61	<0.1	4	<5	11	21
07 Jul 2023	GW06	GW06 1.0 (QC227)	Area 1d	Natural	14	-	<2	<10	<0.5	<1	-	<5	7.7	7.8	16	<0.1	<5	<2	-	27
03 Jul 2023	GW06	GW06 21.0	Area 1d	Natural	3	27	<0.5	2	<0.5	-	2	4	15	14	210	0.045	5.5	<0.5	18	70
03 Jul 2023	GW06	GW06 4.0	Area 1d	Natural	4.5	46	<0.5	5	<0.5	-	5.5	8	24	13	74	0.01	11	<0.5	9	140
12 May 2023	TP074	TP074 0.2	Area 1d	Natural	3	140	<0.5	4	<0.5	-	8	2.5	43	19	82	0.035	5	<0.5	21	35
18 May 2023	TP087	TP087 0.4	Area 1d	Fill	3	69	<0.5	6	<0.5	-	4	6	19	14	160	0.035	7	<0.5	16	70
10 May 2023	TP089	TP089 0.5	Area 1d	Natural	4	110	<0.5	6	<0.5	-	5	17	24	20	610	0.16	13	<0.5	15	91
16 May 2023	TP092	TP092 0.5	Area 1d	Fill	4	31	<0.5	7	<0.5	-	3	23	32	18	210	0.07	22	<0.5	31	110
16 May 2023	TP093	TP093 1.0	Area 1d	Fill	3	38	<0.5	3	<0.5	-	3	9.5	25	14	110	0.08	8	<0.5	27	68
16 May 2023	TP093	TP093 2.0	Area 1d	Fill	2.5	36	<0.5	3	<0.5	-	4	10	25	8.5	110	0.055	7.5	<0.5	24	44
05 May 2023	TP093	TP093 2.0 (QC106)	Area 1d	Fill	<5	40	<1	<50	<1	-	<2	12	33	8	110	<0.1	7	<5	17	74
12 May 2023	TP101	TP101 0.2	Area 1d	Natural	3	140	<0.5	9	<0.5	-	7	14	22	21	520	0.055	12	<0.5	21	73
16 May 2023	TP102	TP102 0.5	Area 1d	Natural	2	46	<0.5	5	<0.5	-	5.5	5.5	18	13	32	0.03	4.5	<0.5	17	31
12 May 2023	TP103	TP103 0.2	Area 1d	Natural	3.5	155	<0.5	6	<0.5	-	10	9	28	15	450	0.03	14	<0.5	13	82
10 May 2023	TP106	TP106 0.5	Area 1d	Natural</																



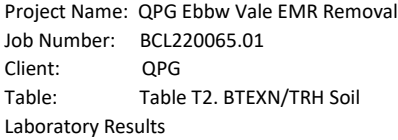
Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T1.Heavy Metals Soil Laboratory Results

Project Name: QPG Ebbw Vale EMR Removal Job Number: BCL220065.01 Client: QPG Table: Table T1.Heavy Metals Soil Laboratory Results					Metals																
					Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc	
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/lg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	1	0.5	1	0.5	1	0.5	0.5	0.5	0.5	0.005	0.5	0.5	1	0.5		
NEPM 2013 Table 1A(1) HILs Res A Soil					100		60	4,500	20	100	100	100	6,000	300	3,800	40	400	200		7,400	
Site-Specific EIL - Urban Res & Public Open Space (Natural Fill)					100					760 770		100 130	1,100			210 90			210 230		
14 Jun 2023	BH09	BH09 6.0	Area 4	Natural	1.5	97	<0.5	7	<0.5	-	11	12	17	16	1,050	0.035	8	<0.5	19	51	
27 Jun 2023	GW03	GW03 0.0	Area 4	Natural	3.5	240	<0.5	5	<0.5	-	5.5	8	15	14	220	0.02	5.5	<0.5	13	43	
27 Jun 2023	GW03	GW03 0.5	Area 4	Natural	1.5	520	<0.5	6	<0.5	-	9	50	28	17	320	0.005	12	<0.5	13	120	
29 Jun 2023	GW03	GW03 27.0	Area 4	Natural	2	17	<0.5	1	<0.5	-	1.5	5	15	5	24	0.005	4	<0.5	6	32	
16 May 2023	TP116	TP116 0.2	Area 4	Fill	3.5	140	<0.5	7	<0.5	-	10	15	30	16	1,050	0.05	16	<0.5	18	81	
16 May 2023	TP116	TP116 0.5	Area 4	Fill	5	155	<0.5	8	<0.5	-	13	14	30	18	1,040	0.05	18	<0.5	19	100	
16 May 2023	TP116	TP116 2.0	Area 4	Fill	4.5	145	<0.5	9	<0.5	-	12	14	31	18	1,220	0.06	19	<0.5	17	92	
16 May 2023	TP117	TP117 0.2	Area 4	Fill	4	110	<0.5	7	<0.5	-	8	12	25	13	810	0.05	13	<0.5	17	77	
16 May 2023	TP117	TP117 0.5	Area 4	Fill	4.5	140	<0.5	8	<0.5	-	10	13	25	14	900	0.045	16	<0.5	19	85	
16 May 2023	TP117	TP117 1.5	Area 4	Fill	3.5	180	<0.5	8	<0.5	-	10	17	26	16	1,050	0.05	17	<0.5	18	88	
16 May 2023	TP118	TP118 0.2	Area 4	Fill	4	270	<0.5	9	<0.5	-	10	16	30	15	1,260	0.04	19	<0.5	20	90	
16 May 2023	TP118	TP118 0.5	Area 4	Fill	5	140	<0.5	9	<0.5	-	10	22	27	17	1,060	0.05	21	<0.5	22	150	
16 May 2023	TP118	TP118 1.0	Area 4	Fill	4.5	125	<0.5	8	<0.5	-	9.5	21	25	15	1,070	0.055	19	<0.5	20	135	
16 May 2023	TP119	TP119 0.5	Area 4	Fill	4.5	150	<0.5	10	<0.5	-	15	21	25	16	950	0.06	17	<0.5	23	100	
16 May 2023	TP119	TP119 1.0	Area 4	Natural	3	130	<0.5	9	<0.5	-	11	10	23	15	740	0.05	10	<0.5	19	58	
18 May 2023	TP120	TP120 0.4	Area 4	Fill	4.5	130	<0.5	5	<0.5	-	6	5.5	17	13	150	0.035	6	<0.5	12	58	
18 May 2023	TP120	TP120 1.0	Area 4	Fill	4	140	<0.5	8	<0.5	-	8	6	19	14	200	0.03	6	<0.5	23	66	
15 May 2023	TP124	TP124 0.5	Area 4	Fill	4	175	<0.5	7	<0.5	-	9	10	13	14	390	0.015	7	<0.5	19	52	
15 May 2023	TP124	TP124 0.5 (QC110)	Area 4	Fill	3.5	165	<0.5	6	<0.5	-	13	11	14	17	410	0.01	7	<0.5	21	53	
16 May 2023	TP124	TP124 0.5 (QC110)	Area 4	Fill	6	120	<1	<50	<1	-	9	8	12	8	270	<0.1	8	<5	28	37	
16 May 2023	TP125	TP125 0.5	Area 4	Fill	4	120	<0.5	10	<0.5	-	8.5	21	18	11	1,100	0.035	17	<0.5	21	130	
15 May 2023	TP126	TP126 0.5	Area 4	Fill	4	110	<0.5	8	<0.5	-	10	10	24	24	670	0.04	7.5	<0.5	19	73	
16 May 2023	TP127	TP127 0.5	Area 4	Fill	3	130	<0.5	10	<0.5	-	14	14	36	19	950	0.055	19	<0.5	21	105	
17 May 2023	TP128	TP128 0.5	Area 4	Fill	2.5	65	<0.5	5	<0.5	-	5	7.5	15	13	170	0.03	6.5	<0.5	12	52	
17 May 2023	TP128	TP128 1.5	Area 4	Natural	4	110	<0.5	10	<0.5	-	10	5.5	27	20	350	0.035	12	<0.5	19	94	
17 May 2023	TP129	TP129 0.5	Area 4	Natural	2.5	43	<0.5	8	<0.5	-	12	2.5	16	19	170	0.015	5	<0.5	17	30	
17 May 2023	TP130	TP130 0.5	Area 4	Fill	3.5	130	<0.5	7	<0.5	-	7	12	25	16	310	0.045	11	<0.5	21	100	
17 May 2023	TP130	TP130 1.5	Area 4	Fill	4	175	<0.5	6	<0.5	-	9.5	11	22	18	170	0.01	12	<0.5	15	110	
17 May 2023	TP130	TP130 2.5	Area 4	Natural	4.5	89	<0.5	4	<0.5	-	11	18	21	16	120	0.005	18	<0.5	13	130	
16 May 2023	TP131	TP131 0.5	Area 4	Fill	2.5	165	<0.5	8	<0.5	-	12	16	24	15	1,090	0.03	17	<0.5	19	80	
16 May 2023	TP132	TP132 1.0	Area 4	Fill	3	160	<0.5	9	<0.5	-	14	16	34	15	1,150	0.04	21	<0.5	21	96	
16 May 2023	TP133	TP133 0.5	Area 4	Fill	3	120	<0.5	7	<0.5	-	8	13	18	13	840	0.02	12	<0.5	16	55	
16 May 2023	TP134	TP134 0.5	Area 4	Fill	3.5	92	<0.5	6	<0.5	-	10	9	16	13	420	0.015	9	<0.5	15	48	
16 May 2023	TP134	TP134 2.0	Area 4	Fill	2.5	96	<0.5	8	<0.5	-	12	13	34	14	820	0.04	17	<0.5	16	79	
16 May 2023	TP149	TP149 0.5	Area 4	Fill	3	140	<0.5	9	<0.5	-	10	14	27	16	980	0.05	18	<0.5	18	86	
28 Apr 2023	TP149	TP149 0.5 (QC103)	Area 4	Fill	9	170	<1	<50	<1	-	10	13	26	9	821	<0.1	18	<5	24	71	
16 May 2023	TP163	TP163 0.5	Area 4	Fill	3	99	<0.5	7	<0.5	-	10	10	17	15	400	0.01	8.5	<0.5	15	53	
16 May 2023	TP163	TP163 1.0	Area 4	Fill	3	79	<0.5	6	<0.5	-	9	8	16	12	370	0.01	8.5	<0.5	14	48	
23 Jun 2023	GW02	GW02 0.0	Balance of Site	Natural	1.5	100	<0.5	9	<0.5	-	14	5	19	18	250	0.015	5	<0.5	20	46	
23 Jun 2023	GW02	GW02 0.3	Balance of Site	Natural	1.5	57	<0.5	7	<0.5	-	7	7.5	36	13	380	0.065	2.5	<0.5	24	55	
23 Jun 2023	GW02	GW02 1.0	Balance of Site	Natural	2.5	77	<0.5	12	<0.5	-	14	14	20	20	620	0.025	6.5	<0.5	20	50	
30 Jun 2023	GW04	GW04 0.5	Balance of Site	Natural	1.5	73	<0.5	3	<0.5	-	7.5	2	5.5	11	13	<0.005	2.5	<0.5	5	15	
30 Jun 2023	GW04	GW04 0.5 (QC120)	Balance of Site	Natural	2.5	82	<0.5	3	<0.5	-	9	3	7	15	18	0.005	4	<0.5	6	18	
30 Jun 2023	GW04	GW04 0.5 (QC220)	Balance of Site	Natural	7.5	-	<2	<10	<0.5	<1	-	5.8	7.7	10	26	<0.1	8.1	<2	-	24	
30 Jun 2023	GW04	GW04 1.5	Balance of Site	Natural	3	9	<0.5	<1	<0.5	-	3.5	1.5	8	7	5	0.01	1.5	<0.5	1	6	
30 Jun 2023	GW04	GW04 1.5 (QC121)	Balance of Site	Natural	3.5	7	<0.5	<1	<0.5	-	2.5	1	7.5	6.5	3.5	0.01	1	<0.5	1	4	
30 Jun 2023	GW04	GW04 1.5 (QC221)	Balance of Site	Natural	<2	-	<2	<10	<0.5	<1	-	<5	9.7	<5	<5	<0.1	<5	<2	-	<5	
02 Jul 2023	GW04	GW04 28.5	Balance of Site	Natural	3.5	8	<0.5	<1	<0.5	-	2.5	7	8	7.5	4	0.07	6.5	<0.5	4	44	
30 Jun 2023	GW04	GW04 3.0	Balance of Site	Natural	2.5	12	<0.5	2	<0.5	-	7.5	1	4	9	13	0.015	1.5	<0.5	51	5.5	
30 Jun 2023	GW04	GW04 3.0 (QC122)	Balance of Site	Natural	3.5	11	<0.5	2	<0.5	-	7.5	1.5	4.5	6	10	0.01	2	<0.5	54	4	
30 Jun 2023	GW04	GW04 3.0 (QC222)	Balance of Site	Natural	6	-	<2	<10	<0.5	<1	-	<5	<5	6	6.4	<0.1	<5	<2	-	<5	
08 May 2023	TP001	TP001 0.5	Balance of Site	Fill	3.5	57	<0.5	4	<0.5	-	4	9									



Date	Location Code	Field ID	Investigation Area									
23 May 2023	BH02	BH02 - 0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
23 May 2023	BH02	BH02 - 1.4	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
24 May 2023	BH04	BH04 - 0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
24 May 2023	BH04	BH04 - 0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
11 May 2023	SP01	SP01_1	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
11 May 2023	SP01	SP01_2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
11 May 2023	SP01	SP01_3	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP02	SP02_1	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP02	SP02_3	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP02	SP02_4	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP03	SP03_3	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP04	SP04_1	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP04	SP04_3	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP04	SP04_4	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP04	SP04_5 (QC112)	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
17 May 2023	SP04	SP04_5 (QC212)	Area 1a	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
09 May 2023	TP032	TP032_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP033	TP033_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP034	TP034_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
15 May 2023	TP035	TP035_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP036	TP036_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP037	TP037_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP038	TP038_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP039	TP039_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP040	TP040_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP040	TP040_1.0	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP041	TP041_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP042	TP042_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP043	TP043_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
27 Apr 2023	TP044	TP044_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP051	TP051_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP052	TP052_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP052	TP052_1.0	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP054	TP054_1.0	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP055	TP055_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP056	TP056_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP057	TP057_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP058	TP058_0.5	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP059	TP059_0.2	Area 1a	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
20 May 2023	BH01	BH01_0.2	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
20 May 2023	BH01	BH01_2.6	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
23 May 2023	BH03	BH03 - 0.2	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
23 May 2023	BH03	BH03 - 1.0	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
08 May 2023	TP002	TP002_0.2	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP003	TP003_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP003	TP003_0.5 (QC207)	Area 1b	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
08 May 2023	TP004	TP004_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP005	TP005_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP006	TP006_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP007	TP007_1.0	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP008	TP008_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP009	TP009_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP011	TP011_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP012	TP012_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP013	TP013_0.2	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP014	TP014_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
08 May 2023	TP015	TP015_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
15 May 2023	TP029	TP029_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP029	TP029_0.5 (QC209)	Area 1b	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
09 May 2023	TP031	TP031_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP046	TP046_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP047	TP047_1.1	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP048	TP048_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP049	TP049_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP050	TP050_0.5	Area 1b	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 Jul 2023	GW05	GW05_0.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 Jul 2023	GW05	GW05_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 Jul 2023	GW05	GW05_1.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 Jul 2023	GW05	GW05_1.3	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 Jul 2023	GW05	GW05_2.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_3.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_4.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_5.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_6.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_6.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_7.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_8.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 Jul 2023	GW05	GW05_8.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP016	TP016_0.7	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP017	TP017_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP018	TP018_1.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
18 May 2023	TP019	TP019_0.4	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
09 May 2023	TP021	TP021_0.2	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP022	TP022_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
09 May 2023	TP023	TP023_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP024	TP024_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP025	TP025_1.0	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP026	TP026_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP027	TP027_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
03 May 2023	TP028	TP028_0.5	Area 1c	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T2. BTEXN/TRH Soil
Laboratory Results

				BTEX								
				Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene	Naphthalene (BTEX)	Total BTEX
EQL				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				0.2	0.5	0.5	0.5	0.5	0.5	0.5	1	0.2
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay				0.7 1 2 3	480				110 310	5	5	
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space										170	170	
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil				65	105	125			45			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil												
28 May 2023	BH07	BH07 8.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH10	BH10 0.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH10	BH10 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH10	BH10 1.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH10	BH10 8.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
06 Jul 2023	BH15	BH15 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
06 Jul 2023	BH15	BH15 0.5	Area 1d	-	-	-	-	-	-	-	-	-
06 Jul 2023	BH15	BH15 1.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
06 Jul 2023	BH15	BH15 1.0	Area 1d	-	-	-	-	-	-	-	-	-
06 Jul 2023	BH15	BH15 15.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
06 Jul 2023	BH15	BH15 2.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
06 Jul 2023	BH15	BH15 3.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
06 Jul 2023	BH15	BH15 32.0	Area 1d	<0.2	<0.5	<0.5	1.2	<0.5	1.2	-	<1	1.2
06 Jul 2023	BH15	BH15 4.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
07 Jul 2023	GW06	GW06 0.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
07 Jul 2023	GW06	GW06 1.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
12 May 2023	TP074	TP074 0.2	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
18 May 2023	TP087	TP087 0.4	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
10 May 2023	TP089	TP089 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP092	TP092 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP093	TP093 1.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP093	TP093 2.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
04 May 2023	TP093	TP093 2.0 (QC106)	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP093	TP093 2.0 (QC206)	Area 1d	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
12 May 2023	TP101	TP101 0.2	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP102	TP102 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
12 May 2023	TP103	TP103 0.2	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
18 May 2023	TP105	TP105 0.3	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP106	TP106 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
18 May 2023	TP107	TP107 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP109	TP109 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP109	TP109 2.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
02 May 2023	TP110	TP110 1.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP111	TP111 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP111	TP111 1.0	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
02 May 2023	TP112	TP112 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
05 May 2023	TP113	TP113 0.5	Area 1d	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 Jun 2023	BH11	BH11 0.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 Jun 2023	BH11	BH11 0.5	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 Jun 2023	BH11	BH11 1.0 (QC217)	Area 1e	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
19 Jun 2023	BH11	BH11 1.0 (QC217)	Area 1e	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
17 Jun 2023	BH11	BH11 2.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
18 Jun 2023	BH12	BH12 0.5	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
18 Jun 2023	BH13	BH13 0.5	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
19 Jun 2023	BH13	BH13 0.5 (QC118)	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
19 Jun 2023	BH13	BH13 0.5 (QC218)	Area 1e	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
19 Jun 2023	BH13	BH13 0.5 (QC218)	Area 1e	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
18 Jun 2023	BH13	BH13 1.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
18 Jun 2023	BH13	BH13 2.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
19 Jun 2023	BH13	BH13 22.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
20 Jun 2023	GW01	GW01 0.5	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
20 Jun 2023	GW01	GW01 1.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
20 Jun 2023	GW01	GW01 8.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
20 Jun 2023	GW01	GW01 8.0 (QC119)	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
20 Jun 2023	GW01	GW01 8.0 (QC219)	Area 1e	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
20 Jun 2023	GW01	GW01 9.0	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
02 May 2023	TP061	TP061 0.5	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
03 May 2023	TP062	TP062 0.3	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
27 Apr 2023	TP063	TP063 0.2	Area 1e	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
27 Apr 2023	TP064	TP064 0.2										



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T2. BTEXN/TRH Soil
Laboratory Results

				BTEX								
				Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene	Naphthalene (BTEX)	Total BTEX
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.2	0.5	0.5	0.5	0.5	0.5	0.5	1	0.2
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay				0.7 1 2 3	480				110 310	5	5	
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space										170	170	
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil				65	105	125			45			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil												
11 May 2023	TP145	TP145_0.5	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP146	TP146_0.2	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP146	TP146_0.2 (QC108)	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP146	TP146_0.2 (QC208)	Area 3	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
10 May 2023	TP148	TP148_0.5	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP161	TP161_0.5	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP161	TP161_3.0	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP162	TP162_0.5	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP162	TP162_2.0	Area 3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
25 May 2023	BH05	BH05 - 1.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
25 May 2023	BH05	BH05 - 8.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
29 May 2023	BH08	BH08_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
29 May 2023	BH08	BH08_12.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
29 May 2023	BH08	BH08_13.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
29 May 2023	BH08	BH08_14.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
29 May 2023	BH08	BH08_2.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
29 May 2023	BH08	BH08_4.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
29 May 2023	BH08	BH08_7.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH09	BH09_0.2	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH09	BH09_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH09	BH09_1.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH09	BH09_2.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
16 Jun 2023	BH09	BH09_3.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-
16 Jun 2023	BH09	BH09_6.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
27 Jun 2023	GW03	GW03_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
29 Jun 2023	GW03	GW03_27.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
28 Apr 2023	TP114	TP114_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP114	TP114_1.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
28 Apr 2023	TP115	TP115_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
28 Apr 2023	TP115	TP115_1.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP116	TP116_0.2	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP116	TP116_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
28 Apr 2023	TP117	TP117_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
28 Apr 2023	TP117	TP117_1.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP118	TP118_0.2	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
28 Apr 2023	TP118	TP118_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
27 Apr 2023	TP119	TP119_0.2	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
27 Apr 2023	TP119	TP119_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
18 May 2023	TP120	TP120_0.4	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP124	TP124_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP124	TP124_0.5 (QC110)	Area 4	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
02 May 2023	TP125	TP125_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
15 May 2023	TP126	TP126_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
02 May 2023	TP127	TP127_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP128	TP128_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP128	TP128_1.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP129	TP129_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP130	TP130_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP130	TP130_1.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP130	TP130_2.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP130	TP130_2.5 (QC111)	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
17 May 2023	TP130	TP130_2.5 (QC211)	Area 4	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
02 May 2023	TP131	TP131_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
02 May 2023	TP132	TP132_1.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
02 May 2023	TP133	TP133_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
02 May 2023	TP134	TP134_2.0	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP149	TP149_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP149	TP149_0.5 (QC103)	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
28 Apr 2023	TP149	TP149_0.5 (QC203)	Area 4	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	-
28 Apr 2023	TP149	TP149_1.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
02 May 2023	TP163	TP163_0.5	Area 4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
23 Jun 2023	GW02	GW02_0.0	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
23 Jun 2023	GW02	GW02_0.3	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
23 Jun 2023	GW02	GW02_1.0	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
23 Jun 2023	GW02	GW02_15.0	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-
23 Jun 2023	GW02	GW02_2.0	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-
27 Jun 2023	GW02	GW02_35.0	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
30 Jun 2023	GW04	GW04_0.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
30 Jun 2023	GW04	GW04_0.5 (QC120)	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
30 Jun 2023	GW04	GW04_0.5 (QC220)	Balance of Site	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
30 Jun 2023	GW04	GW04_1.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
30 Jun 2023	GW04	GW04_1.5 (QC121)	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
30 Jun 2023	GW04	GW04_1.5 (QC221)	Balance of Site	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
02 Jul 2023	GW04	GW04_28.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
30 Jun 2023	GW04	GW04_3.0	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
30 Jun 2023	GW04	GW04_3.0 (QC122)	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
30 Jun 2023	GW04	GW04_3.0 (QC222)	Balance of Site	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<0.5	-
08 May 2023	TP001	TP001-0.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP060	TP060_0.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP150	TP150_0.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP151	TP151_0.2	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
10 May 2023	TP153	TP153_0.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
12 May 2023	TP154	TP154_0.2	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.2
15 May 2023	TP155	TP155_0.5	Balance of Site	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
15 May 2023	TP156											



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T2. BTEXN/TRH Soil
Laboratory Results

	TRH							TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	>C10 - C40 Fraction (sum) (SG)
	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)				
EQL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	10	10	50	50	100	100	50	50	100	100	50
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay	0	50 90 150 290		280							
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space											
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil		180	120	120	1,300	5,600		120	1,300	5,600	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil	800		1,000		3,500	10,000					

Date	Location Code	Field ID	Investigation Area												
23 May 2023	BH02	BH02 - 0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
23 May 2023	BH02	BH02 - 1.4	Area 1a	<10	<10	60	60	240	<100	300	-	-	-	-	-
24 May 2023	BH04	BH04 - 0.2	Area 1a	<10	<10	100	100	580	<100	680	-	-	-	-	-
24 May 2023	BH04	BH04 - 0.5	Area 1a	18	18	<50	<50	<100	<100	<50	-	-	-	-	-
24 May 2023	BH04	BH04_0.2 (QC113)	Area 1a	<10	<10	100	100	550	<100	650	-	-	-	-	-
11 May 2023	SP01	SP01_1	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
11 May 2023	SP01	SP01_2	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
11 May 2023	SP01	SP01_3	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP02	SP02_1	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP02	SP02_3	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP02	SP02_4	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP03	SP03_3	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP04	SP04_1	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP04	SP04_3	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP04	SP04_4	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP04	SP04_5 (QC112)	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	SP04	SP04_5 (QC212)	Area 1a	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-
09 May 2023	TP032	TP032_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
09 May 2023	TP033	TP033_0.2	Area 1a	<10	<10	<50	<50	100	<100	100	-	-	-	-	-
09 May 2023	TP034	TP034_0.2	Area 1a	<10	<10	<50	<50	120	<100	120	-	-	-	-	-
15 May 2023	TP035	TP035_0.2	Area 1a	<10	<10	<50	<50	130	<100	130	-	-	-	-	-
09 May 2023	TP036	TP036_0.2	Area 1a	<10	<10	110	110	530	<100	640	70	220	<100	290	
09 May 2023	TP037	TP037_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
09 May 2023	TP038	TP038_0.2	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 May 2023	TP039	TP039_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 May 2023	TP040	TP040_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 May 2023	TP040	TP040_1.0	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
09 May 2023	TP041	TP041_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
09 May 2023	TP042	TP042_0.2	Area 1a	<10	<10	60	60	310	<100	370	<50	100	<100	100	
09 May 2023	TP043	TP043_0.2	Area 1a	<10	<10	<50	<50	130	<100	130	-	-	-	-	-
27 Apr 2023	TP044	TP044_0.2	Area 1a	<10	<10	<50	<50	130	<100	130	-	-	-	-	-
28 Apr 2023	TP051	TP051_0.5	Area 1a	<10	<10	90	90	450	<100	540	-	-	-	-	-
03 May 2023	TP052	TP052_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 May 2023	TP052	TP052_1.0	Area 1a	<10	<10	<50	<50	120	<100	120	-	-	-	-	-
10 May 2023	TP054	TP054_1.0	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
05 May 2023	TP055	TP055_0.5	Area 1a	<10	<10	100	100	400	<100	500	60	120	<100	180	
10 May 2023	TP056	TP056_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 May 2023	TP057	TP057_0.5	Area 1a	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
10 May 2023	TP058	TP058_0.5	Area 1a	<10	<10	<50	<50	180	<100	180	-	-	-	-	-
10 May 2023	TP059	TP059_0.2	Area 1a	<10	<10	60	60	310	<100	370	<50	<100	<100	<50	
20 May 2023	BH01	BH01_0.2	Area 1b	<10	<10	<50	<50	260	<100	260	-	-	-	-	-
20 May 2023	BH01	BH01_2.6	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
23 May 2023	BH03	BH03 - 0.2	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
23 May 2023	BH03	BH03 - 1.0	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
08 May 2023	TP002	TP002_0.2	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
08 May 2023	TP003	TP003_0.5	Area 1b	<10	<10	<50	<50	110	<100	110	-	-	-	-	-
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	<10	<10	50	50	280	<100	330	-	-	-	-	-
10 May 2023	TP003	TP003_0.5 (QC207)	Area 1b	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-
08 May 2023	TP004	TP004_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
08 May 2023	TP005	TP005_0.5	Area 1b	<10	<10	170	170	880	240	1,290	100	360	<100	460	
08 May 2023	TP006	TP006_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
08 May 2023	TP007	TP007_1.0	Area 1b	<10	<10	<50	<50	150	<100	150	-	-	-	-	-
08 May 2023	TP008	TP008_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
08 May 2023	TP009	TP009_0.5	Area 1b	<10	<10	60	60	280	<100	340	-	-	-	-	-
08 May 2023	TP011	TP011_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
08 May 2023	TP012	TP012_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
08 May 2023	TP013	TP013_0.2	Area 1b	<10	<10	90	90	470	<100	560	60	160	<100	220	
08 May 2023	TP014	TP014_0.5	Area 1b	<10	<10	<50	<50	170	<100	170	-	-	-	-	-
08 May 2023	TP015	TP015_0.5	Area 1b	<10	<10	80	80	390	<100	470	60	140	<100	200	
15 May 2023	TP029	TP029_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
17 May 2023	TP029	TP029_0.5 (QC209)	Area 1b	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-
09 May 2023	TP031	TP031_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 May 2023	TP046	TP046_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 May 2023	TP047	TP047_1.1	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
05 May 2023	TP048	TP048_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
09 May 2023	TP049	TP049_0.5	Area 1b	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
09 May 2023	TP050	TP050_0.5	Area 1b	<10	<10	120	120	480	<100	600	70	130	<100	200	
03 Jul 2023	GW05	GW05_0.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_0.5	Area 1c	<10	<10	60	60	230	<100	290	<50	<100	<100	<50	
03 Jul 2023	GW05	GW05_1.0	Area 1c	<10	<10	70	70	270	<100	340	50	140	<100	190	
03 Jul 2023	GW05	GW05_1.3	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_2.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_3.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_4.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_5.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_6.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_6.5	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_7.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_8.0	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
03 Jul 2023	GW05	GW05_8.5	Area 1c	<10	<10	<50	<50	150	<100	150	-	-	-	-	-
04 May 2023	TP016	TP016_0.7	Area 1c	<10	<10	<50	<50	<100	<100	<50	-	-	-	-	-
04 May 2023	TP017	TP017_0.5													



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T2. BTEXN/TRH Soil
Laboratory Results

				TRH										
				C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	>C10 - C40 Fraction (sum) (SG)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				10	10	50	50	100	100	50	50	100	100	50
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay				0	50 90 150 290		280							
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil					180	120	120	1,300	5,600		120	1,300	5,600	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil				800		1,000		3,500	10,000					
28 May 2023	BH07	BH07 8.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH10	BH10 0.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH10	BH10 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH10	BH10 1.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH10	BH10 8.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
06 Jul 2023	BH15	BH15 0.5	Area 1d	<10	<10	180	180	960	<100	1,140	-	-	-	-
06 Jul 2023	BH15	BH15 0.5	Area 1d	-	-	-	-	-	-	-	<50	<100	<100	<50
06 Jul 2023	BH15	BH15 1.0	Area 1d	<10	<10	90	90	340	<100	430	-	-	-	-
06 Jul 2023	BH15	BH15 1.0	Area 1d	-	-	-	-	-	-	-	<50	<100	<100	<50
06 Jul 2023	BH15	BH15 15.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
06 Jul 2023	BH15	BH15 2.0	Area 1d	<10	<10	130	130	630	<100	760	80	280	<100	360
06 Jul 2023	BH15	BH15 3.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
06 Jul 2023	BH15	BH15 32.0	Area 1d	13	12	<50	<50	<100	<100	<50	-	-	-	-
06 Jul 2023	BH15	BH15 4.0	Area 1d	<10	<10	60	60	290	<100	350	<50	130	<100	130
07 Jul 2023	GW06	GW06 0.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
07 Jul 2023	GW06	GW06 1.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
12 May 2023	TP074	TP074 0.2	Area 1d	<10	<10	60	60	310	<100	370	<50	<100	<100	<50
18 May 2023	TP087	TP087 0.4	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
10 May 2023	TP089	TP089 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
04 May 2023	TP092	TP092 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
05 May 2023	TP093	TP093 1.0	Area 1d	<10	<10	90	90	470	<100	560	60	100	<100	160
05 May 2023	TP093	TP093 2.0	Area 1d	<10	<10	70	70	340	<100	410	-	-	-	-
04 May 2023	TP093	TP093 2.0 (QC106)	Area 1d	<10	<10	80	80	360	<100	440	-	-	-	-
05 May 2023	TP093	TP093 2.0 (QC206)	Area 1d	<20	<20	310	310	1,400	210	1,920	-	-	-	-
12 May 2023	TP101	TP101 0.2	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP102	TP102 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
12 May 2023	TP103	TP103 0.2	Area 1d	<10	<10	<50	<50	120	<100	120	-	-	-	-
18 May 2023	TP105	TP105 0.3	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
10 May 2023	TP106	TP106 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
18 May 2023	TP107	TP107 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
05 May 2023	TP109	TP109 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
05 May 2023	TP109	TP109 2.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
02 May 2023	TP110	TP110 1.0	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
05 May 2023	TP111	TP111 0.5	Area 1d	<10	<10	80	80	400	<100	480	<50	<100	<100	<50
05 May 2023	TP111	TP111 1.0	Area 1d	<10	<10	70	70	380	<100	450	<50	<100	<100	<50
02 May 2023	TP112	TP112 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
05 May 2023	TP113	TP113 0.5	Area 1d	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 Jun 2023	BH11	BH11 0.0	Area 1e	<10	<10	<50	<50	170	<100	170	-	-	-	-
17 Jun 2023	BH11	BH11 0.5	Area 1e	<10	<10	60	60	310	<100	370	<50	120	<100	120
17 Jun 2023	BH11	BH11 1.0 (QC217)	Area 1e	<20	<20	96	96	610	200	906	-	-	-	-
19 Jun 2023	BH11	BH11 1.0 (QC217)	Area 1e	-	-	-	-	-	-	-	-	-	-	-
17 Jun 2023	BH11	BH11 2.0	Area 1e	<10	<10	80	80	410	<100	490	<50	120	<100	120
18 Jun 2023	BH12	BH12 0.5	Area 1e	<10	<10	80	80	460	<100	540	50	210	<100	260
18 Jun 2023	BH13	BH13 0.5	Area 1e	<10	<10	120	120	640	<100	760	60	240	<100	300
19 Jun 2023	BH13	BH13 0.5 (QC118)	Area 1e	<10	<10	140	140	750	100	990	-	-	-	-
19 Jun 2023	BH13	BH13 0.5 (QC218)	Area 1e	-	-	-	-	-	-	-	-	-	-	-
19 Jun 2023	BH13	BH13 0.5 (QC218)	Area 1e	<20	<20	<50	<50	210	<100	210	-	-	-	-
19 Jun 2023	BH13	BH13 0.5 (QC218)	Area 1e	<20	<20	100	100	470	110	680	-	-	-	-
18 Jun 2023	BH13	BH13 1.0	Area 1e	<10	<10	60	60	330	<100	390	<50	140	<100	140
18 Jun 2023	BH13	BH13 2.0	Area 1e	<10	<10	140	140	760	110	1,010	60	240	<100	300
19 Jun 2023	BH13	BH13 22.0	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
20 Jun 2023	GW01	GW01 0.5	Area 1e	<10	<10	120	120	400	<100	520	<50	130	<100	130
20 Jun 2023	GW01	GW01 1.0	Area 1e	<10	<10	60	60	240	<100	300	<50	<100	<100	<50
20 Jun 2023	GW01	GW01 8.0	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
20 Jun 2023	GW01	GW01 8.0 (QC119)	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
20 Jun 2023	GW01	GW01 8.0 (QC219)	Area 1e	<20	<20	<50	<50	<100	<100	<100	-	-	-	-
20 Jun 2023	GW01	GW01 9.0	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
02 May 2023	TP061	TP061 0.5	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
03 May 2023	TP062	TP062 0.3	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP063	TP063 0.2	Area 1e	<10	<10	60	60	310	<100	370	-	-	-	-
27 Apr 2023	TP064	TP064 0.2	Area 1e	<10	<10	<50	<50	180	<100	180	-	-	-	-
27 Apr 2023	TP065	TP065 0.2	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP065	TP065 0.5	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP066	TP066 1.0	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP067	TP067 0.2	Area 1e	<10	<10	<50	<50	210	<100	210	-	-	-	-
27 Apr 2023	TP068	TP068 0.5	Area 1e	<10	<10	<50	<50	280	<100	280	-	-	-	-
27 Apr 2023	TP069	TP069 0.2	Area 1e	-	-	-	-	-	-	-	<50	<100	<100	<50
27 Apr 2023	TP069	TP069 0.5	Area 1e	<10	<10	160	160	820	130	1,110	100	330	<100	430
27 Apr 2023	TP069	TP069 1.0	Area 1e	-	-	-	-	-	-	-	<50	140	<100	140
27 Apr 2023	TP070	TP070 0.2	Area 1e	<10	<10	50	50	300	<100	350	-	-	-	-
27 Apr 2023	TP070	TP070 1.0	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP070	TP070 1.0 (QC102)	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP070	TP070 1.0 (QC202)	Area 1e	<20	<20	57	57	240	<100	297	-	-	-	-
03 May 2023	TP071	TP071 1.0	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP072	TP072 0.5	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
26 Apr 2023	TP073	TP073 0.5	Area 1e	<10	<10	130	130	700	120	950	70	230	<100	300
26 Apr 2023	TP073	TP073 1.0	Area 1e	<10	<10	310	310	1,710	290	2,310	190	640	<100	830
26 Apr 2023	TP073	TP073 1.0 (QC101)	Area 1e	<10	<10	300	300	1,670	290	2,260	-	-	-	-
26 Apr 2023	TP073	TP073 1.0 (QC201)	Area 1e	<20	<20	90	90	670	150	910	-	-	-	-
26 Apr 2023	TP073	TP073 1.5	Area 1e	-	-	-	-	-	-	-	90	330	<100	420
28 Apr 2023	TP078	TP078 0.5	Area 1e	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
04 May 2023	TP079	TP079 0.5	Area 1e	<10	<10	<50	<50	120	<100	120	-	-	-	-
27 Apr 2023	TP080	TP080 2.0	Area 1e	<10	<10	180	180	1,090	200	1,470	-	-	-	-
10 May 2023	TP081	TP081 0.2	Area 1e	<10	<10	<50	<50	180	<100	180	-	-	-	-
03 May 2023	TP082													



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T2. BTEXN/TRH Soil
Laboratory Results

				TRH										
				C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	>C10 - C40 Fraction (sum) (SG)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				10	10	50	50	100	100	50	50	100	100	50
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay				0	50 90 150 290		280							
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil					180	120	120	1,300	5,600		120	1,300	5,600	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil				800		1,000		3,500	10,000					
11 May 2023	TP145	TP145_0.5	Area 3	<10	<10	60	60	340	<100	400	60	120	<100	180
10 May 2023	TP146	TP146_0.2	Area 3	<10	<10	80	80	290	<100	370	-	-	-	-
10 May 2023	TP146	TP146_0.2 (QC108)	Area 3	<10	<10	<50	<50	230	<100	230	-	-	-	-
10 May 2023	TP146	TP146_0.2 (QC208)	Area 3	<20	<20	<50	<50	170	<100	170	-	-	-	-
10 May 2023	TP148	TP148_0.5	Area 3	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
10 May 2023	TP161	TP161_0.5	Area 3	<10	<10	<50	<50	220	<100	220	-	-	-	-
10 May 2023	TP161	TP161_3.0	Area 3	<10	<10	<50	<50	120	<100	120	-	-	-	-
10 May 2023	TP162	TP162_0.5	Area 3	<10	<10	<50	<50	210	<100	210	-	-	-	-
10 May 2023	TP162	TP162_2.0	Area 3	<10	<10	<50	<50	270	<100	270	-	-	-	-
25 May 2023	BH05	BH05 - 1.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
25 May 2023	BH05	BH05 - 10.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
25 May 2023	BH05	BH05 - 8.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 May 2023	BH08	BH08_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 May 2023	BH08	BH08_12.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 May 2023	BH08	BH08_13.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 May 2023	BH08	BH08_14.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 May 2023	BH08	BH08_2.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 May 2023	BH08	BH08_4.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 May 2023	BH08	BH08_7.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH09	BH09_0.2	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH09	BH09_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH09	BH09_1.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH09	BH09_2.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
16 Jun 2023	BH09	BH09_3.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
16 Jun 2023	BH09	BH09_6.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Jun 2023	GW03	GW03_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
29 Jun 2023	GW03	GW03_27.0	Area 4	<10	<10	<50	<50	100	<100	100	-	-	-	-
28 Apr 2023	TP114	TP114_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP114	TP114_1.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP115	TP115_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP115	TP115_1.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP116	TP116_0.2	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP116	TP116_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP117	TP117_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP117	TP117_1.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP118	TP118_0.2	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP118	TP118_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP119	TP119_0.2	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
27 Apr 2023	TP119	TP119_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
18 May 2023	TP120	TP120_0.4	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP124	TP124_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP124	TP124_0.5 (QC110)	Area 4	<20	<20	<50	<50	<100	<100	<100	-	-	-	-
02 May 2023	TP125	TP125_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
15 May 2023	TP126	TP126_0.5	Area 4	<10	<10	<50	<50	160	<100	160	-	-	-	-
02 May 2023	TP127	TP127_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP128	TP128_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP128	TP128_1.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP129	TP129_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP130	TP130_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP130	TP130_1.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP130	TP130_2.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP130	TP130_2.5 (QC111)	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
17 May 2023	TP130	TP130_2.5 (QC211)	Area 4	<20	<20	<50	<50	<100	<100	<100	-	-	-	-
02 May 2023	TP131	TP131_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
02 May 2023	TP132	TP132_1.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
02 May 2023	TP133	TP133_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
02 May 2023	TP134	TP134_2.0	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP149	TP149_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP149	TP149_0.5 (QC103)	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
28 Apr 2023	TP149	TP149_0.5 (QC203)	Area 4	<20	<20	<50	<50	<100	<100	<100	-	-	-	-
28 Apr 2023	TP149	TP149_1.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
02 May 2023	TP163	TP163_0.5	Area 4	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
23 Jun 2023	GW02	GW02_0.0	Balance of Site	<10	<10	<50	<50	210	<100	210	<50	<100	<100	<50
23 Jun 2023	GW02	GW02_0.3	Balance of Site	<10	<10	140	140	770	110	1,020	90	290	<100	380
23 Jun 2023	GW02	GW02_1.0	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
23 Jun 2023	GW02	GW02_15.0	Balance of Site	-	-	-	-	-	-	-	-	-	-	-
23 Jun 2023	GW02	GW02_2.0	Balance of Site	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW02	GW02_35.0	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
30 Jun 2023	GW04	GW04_0.5	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
30 Jun 2023	GW04	GW04_0.5 (QC120)	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
30 Jun 2023	GW04	GW04_0.5 (QC220)	Balance of Site	<20	<20	<50	<50	<100	<100	<100	-	-	-	-
30 Jun 2023	GW04	GW04_1.5	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
30 Jun 2023	GW04	GW04_1.5 (QC121)	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
30 Jun 2023	GW04	GW04_1.5 (QC221)	Balance of Site	<20	<20	<50	<50	<100	<100	<100	-	-	-	-
02 Jul 2023	GW04	GW04_28.5	Balance of Site	<10	<10	<50	<50	220	<100	220	-	-	-	-
30 Jun 2023	GW04	GW04_3.0	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
30 Jun 2023	GW04	GW04_3.0 (QC122)	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
30 Jun 2023	GW04	GW04_3.0 (QC222)	Balance of Site	<20	<20	<50	<50	<100	<100	<100	-	-	-	-
08 May 2023	TP001	TP001-0.5	Balance of Site	<10	<10	320	320	850	190	1,360	130	170	<100	300
10 May 2023	TP060	TP060_0.5	Balance of Site	<10	<10	120	120	620	<100	740	90	250	<100	340
10 May 2023	TP150	TP150_0.5	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
10 May 2023	TP151	TP151_0.2	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
10 May 2023	TP153	TP153_0.5	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
12 May 2023	TP154	TP154_0.2	Balance of Site	<10	<10	<50	<50	<100	<100	<50	-	-	-	-
15 May 2023	TP155	TP155_0.5	Balance of Site	<10	<10	120	120</							



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

	Asbestos fibres	Cyanide Total
	g/kg	mg/kg
EQL	0.1	1
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space		
NEPM 2013 Table 1A(1) HILs Res A Soil		
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil		

Date	Location Code	Field ID	Investigation Area		
23 May 2023	BH02	BH02 - 1.4	Area 1a	-	-
23 May 2023	BH02	BH02 - 1.4	Area 1a	-	-
24 May 2023	BH04	BH04 - 0.2	Area 1a	-	-
24 May 2023	BH04	BH04 - 0.2	Area 1a	-	-
24 May 2023	BH04	BH04_0.2 (QC113)	Area 1a	-	-
24 May 2023	BH04	BH04_0.2 (QC113)	Area 1a	-	-
09 May 2023	TP032	TP032_0.5	Area 1a	-	-
09 May 2023	TP033	TP033_0.2	Area 1a	0 ^{#1}	-
09 May 2023	TP034	TP034_0.2	Area 1a	-	-
15 May 2023	TP035	TP035_0.2	Area 1a	-	-
09 May 2023	TP036	TP036_0.2	Area 1a	-	-
09 May 2023	TP037	TP037_0.5	Area 1a	-	-
09 May 2023	TP038	TP038_0.2	Area 1a	-	-
03 May 2023	TP039	TP039_0.5	Area 1a	-	-
03 May 2023	TP040	TP040_0.5	Area 1a	-	-
03 May 2023	TP040	TP040_1.0	Area 1a	-	-
09 May 2023	TP041	TP041_0.5	Area 1a	0 ^{#1}	-
09 May 2023	TP042	TP042_0.2	Area 1a	-	-
09 May 2023	TP043	TP043_0.2	Area 1a	0 ^{#1}	-
27 Apr 2023	TP044	TP044_0.2	Area 1a	-	-
28 Apr 2023	TP051	TP051_0.5	Area 1a	-	-
28 Apr 2023	TP051	TP051_0.5	Area 1a	-	-
03 May 2023	TP052	TP052_0.5	Area 1a	-	-
03 May 2023	TP052	TP052_1.0	Area 1a	-	-
10 May 2023	TP054	TP054_1.0	Area 1a	-	-
05 May 2023	TP055	TP055_0.5	Area 1a	-	-
05 May 2023	TP055	TP055_0.5	Area 1a	-	-
10 May 2023	TP056	TP056_0.5	Area 1a	-	-
03 May 2023	TP057	TP057_0.5	Area 1a	-	-
10 May 2023	TP058	TP058_0.5	Area 1a	-	-
10 May 2023	TP059	TP059_0.2	Area 1a	-	-
23 May 2023	BH03	BH03 - 0.2	Area 1b	-	-
08 May 2023	TP002	TP002_0.2	Area 1b	-	-
08 May 2023	TP003	TP003_0.5	Area 1b	-	-
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	-	-
10 May 2023	TP003	TP003_0.5 (QC207)	Area 1b	-	-
08 May 2023	TP004	TP004_0.5	Area 1b	-	-
08 May 2023	TP005	TP005_0.5	Area 1b	-	-
08 May 2023	TP005	TP005_0.5	Area 1b	-	-
08 May 2023	TP006	TP006_0.5	Area 1b	-	-
08 May 2023	TP007	TP007_1.0	Area 1b	-	-
08 May 2023	TP008	TP008_0.5	Area 1b	-	-
08 May 2023	TP009	TP009_0.5	Area 1b	-	-
08 May 2023	TP009	TP009_0.5	Area 1b	-	-
08 May 2023	TP011	TP011_0.5	Area 1b	-	-
08 May 2023	TP012	TP012_0.5	Area 1b	-	-
08 May 2023	TP013	TP013_0.2	Area 1b	-	-
08 May 2023	TP014	TP014_0.5	Area 1b	-	-
08 May 2023	TP015	TP015_0.5	Area 1b	-	-
15 May 2023	TP029	TP029_0.5	Area 1b	-	-
17 May 2023	TP029	TP029_0.5 (QC209)	Area 1b	-	-
09 May 2023	TP031	TP031_0.5	Area 1b	-	-
03 May 2023	TP046	TP046_0.5	Area 1b	-	-
03 May 2023	TP047	TP047_1.1	Area 1b	-	-
05 May 2023	TP048	TP048_0.5	Area 1b	0 ^{#1}	-
05 May 2023	TP048	TP048_0.5	Area 1b	-	-
09 May 2023	TP049	TP049_0.5	Area 1b	-	-
09 May 2023	TP050	TP050_0.5	Area 1b	0 ^{#1}	-
03 Jul 2023	GW05	GW05_0.0	Area 1c	-	-
03 Jul 2023	GW05	GW05_0.5	Area 1c	-	-
03 Jul 2023	GW05	GW05_1.0	Area 1c	-	-
03 Jul 2023	GW05	GW05_1.3	Area 1c	-	-
03 Jul 2023	GW05	GW05_8.5	Area 1c	-	-
04 May 2023	TP016	TP016_0.7	Area 1c	-	-
04 May 2023	TP017	TP017_0.5	Area 1c	-	-
04 May 2023	TP018	TP018_1.0	Area 1c	-	-
09 May 2023	TP021	TP021_0.2	Area 1c	-	-
09 May 2023	TP022	TP022_0.5	Area 1c	-	-
09 May 2023	TP023	TP023_0.5	Area 1c	-	-
04 May 2023	TP024	TP024_0.5	Area 1c	-	-
04 May 2023	TP025	TP025_1.0	Area 1c	-	-
04 May 2023	TP026	TP026_0.5	Area 1c	-	-
03 May 2023	TP027	TP027_0.5	Area 1c	-	-
03 May 2023	TP028	TP028_0.5	Area 1c	-	-
10 May 2023	TP094	TP094_0.5	Area 1c	-	-
04 May 2023	TP095	TP095_0.5	Area 1c	-	-
04 May 2023	TP095	TP095_0.5	Area 1c	-	-
04 May 2023	TP096	TP096_2.0	Area 1c	-	-
04 May 2023	TP096	TP096_2.0 (QC105)	Area 1c	-	-
04 May 2023	TP096	TP096_2.0 (QC205)	Area 1c	-	-
05 May 2023	TP097	TP097_2.0	Area 1c	0 ^{#1}	-
05 May 2023	TP097	TP097_2.0	Area 1c	-	-
05 May 2023	TP098	TP098_1.5	Area 1c	-	-
04 May 2023	TP099	TP099_1.0	Area 1c	-	-
04 May 2023	TP100	TP100_1.5	Area 1c	-	-
28 May 2023	BH07	BH07_0.0	Area 1d	-	<1
28 May 2023	BH07	BH07_10.0	Area 1d	-	-
28 May 2023	BH07	BH07_15.0	Area 1d	-	<1
16 Jun 2023	BH10	BH10_0.0	Area 1d	0 ^{#1}	-
16 Jun 2023	BH10	BH10_0.5	Area 1d	0 ^{#1}	-
16 Jun 2023	BH10	BH10_1.0	Area 1d	-	-
16 Jun 2023	BH10	BH10_8.0	Area 1d	-	-



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				Asbestos fibres	Cyanide Total
				g/kg	mg/kg
EQL				0.1	1
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space					
NEPM 2013 Table 1A(1) HILs Res A Soil					
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil					
06 Jul 2023	BH15	BH15_0.5	Area 1d	-	-
06 Jul 2023	BH15	BH15_0.5	Area 1d	-	-
06 Jul 2023	BH15	BH15_1.0	Area 1d	-	-
06 Jul 2023	BH15	BH15_1.0	Area 1d	-	-
06 Jul 2023	BH15	BH15_32.0	Area 1d	-	<1
07 Jul 2023	GW06	GW06_0.0	Area 1d	-	-
07 Jul 2023	GW06	GW06_1.0	Area 1d	-	-
12 May 2023	TP074	TP074_0.2	Area 1d	-	-
10 May 2023	TP089	TP089_0.5	Area 1d	-	-
04 May 2023	TP092	TP092_0.5	Area 1d	-	-
05 May 2023	TP093	TP093_1.0	Area 1d	0 ^{#1}	-
05 May 2023	TP093	TP093_1.0	Area 1d	-	-
05 May 2023	TP093	TP093_2.0	Area 1d	0 ^{#1}	-
04 May 2023	TP093	TP093_2.0 (QC106)	Area 1d	-	-
05 May 2023	TP093	TP093_2.0 (QC206)	Area 1d	-	-
12 May 2023	TP101	TP101_0.2	Area 1d	-	-
28 Apr 2023	TP102	TP102_0.5	Area 1d	-	-
12 May 2023	TP103	TP103_0.2	Area 1d	-	-
18 May 2023	TP105	TP105_0.3	Area 1d	-	-
10 May 2023	TP106	TP106_0.5	Area 1d	-	-
18 May 2023	TP107	TP107_0.5	Area 1d	-	-
05 May 2023	TP109	TP109_0.5	Area 1d	0 ^{#1}	-
05 May 2023	TP109	TP109_2.0	Area 1d	0 ^{#1}	-
02 May 2023	TP110	TP110_1.0	Area 1d	-	-
05 May 2023	TP111	TP111_0.5	Area 1d	0 ^{#1}	-
05 May 2023	TP111	TP111_0.5	Area 1d	-	-
05 May 2023	TP111	TP111_1.0	Area 1d	0 ^{#1}	-
02 May 2023	TP112	TP112_0.5	Area 1d	-	-
05 May 2023	TP113	TP113_0.5	Area 1d	-	-
17 Jun 2023	BH11	BH11_0.0	Area 1e	-	-
17 Jun 2023	BH11	BH11_0.5	Area 1e	-	-
17 Jun 2023	BH11	BH11_0.5	Area 1e	-	-
02 Aug 2023	BH11	BH11-0.0	Area 1e	0 ^{#1}	-
18 Jun 2023	BH12	BH12_0.5	Area 1e	-	-
18 Jun 2023	BH12	BH12_0.5	Area 1e	-	-
18 Jun 2023	BH12	BH12_5.0	Area 1e	-	-
18 Jun 2023	BH13	BH13_0.5	Area 1e	-	-
18 Jun 2023	BH13	BH13_0.5	Area 1e	-	-
18 Jun 2023	BH13	BH13_2.0	Area 1e	-	-
18 Jun 2023	BH13	BH13_2.0	Area 1e	-	-
03 Aug 2023	BH13	BH13-0.0	Area 1e	0 ^{#1}	-
20 Jun 2023	GW01	GW01_0.5	Area 1e	-	-
20 Jun 2023	GW01	GW01_0.5	Area 1e	-	-
20 Jun 2023	GW01	GW01_8.0	Area 1e	-	-
20 Jun 2023	GW01	GW01_8.0 (QC119)	Area 1e	-	-
20 Jun 2023	GW01	GW01_8.0 (QC219)	Area 1e	-	-
20 Jun 2023	GW01	GW01_9.0	Area 1e	-	<1
03 Aug 2023	TP061	TP061-0.0	Area 1e	0 ^{#1}	-
03 May 2023	TP062	TP062_0.3	Area 1e	-	-
27 Apr 2023	TP063	TP063_0.2	Area 1e	-	-
27 Apr 2023	TP063	TP063_0.2	Area 1e	-	-
02 Aug 2023	TP063	TP063-0.0	Area 1e	0 ^{#1}	-
27 Apr 2023	TP064	TP064_0.2	Area 1e	-	-
02 Aug 2023	TP064	TP064-0.0	Area 1e	0 ^{#1}	-
27 Apr 2023	TP065	TP065_0.2	Area 1e	-	-
27 Apr 2023	TP066	TP066_1.0	Area 1e	-	-
27 Apr 2023	TP067	TP067_0.2	Area 1e	-	-
27 Apr 2023	TP068	TP068_0.5	Area 1e	-	-
27 Apr 2023	TP069	TP069_0.5	Area 1e	-	-
27 Apr 2023	TP070	TP070_1.0	Area 1e	-	-
27 Apr 2023	TP070	TP070_1.0 (QC102)	Area 1e	-	-
27 Apr 2023	TP070	TP070_1.0 (QC202)	Area 1e	-	-
02 Aug 2023	TP070	TP070-0.0	Area 1e	0 ^{#1}	-
03 May 2023	TP071	TP071_1.0	Area 1e	-	-
27 Apr 2023	TP072	TP072_0.5	Area 1e	-	-
26 Apr 2023	TP073	TP073_1.0	Area 1e	-	-
26 Apr 2023	TP073	TP073_1.0	Area 1e	-	-
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	-	-
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	-	-
26 Apr 2023	TP073	TP073_1.0 (QC201)	Area 1e	-	-
02 Aug 2023	TP073	TP073-0.0	Area 1e	0 ^{#1}	-
28 Apr 2023	TP078	TP078_0.5	Area 1e	-	-
02 Aug 2023	TP079	TP079-0.0	Area 1e	0 ^{#1}	-
27 Apr 2023	TP080	TP080_2.0	Area 1e	-	-
02 Aug 2023	TP080	TP080-0.0	Area 1e	0 ^{#1}	-
10 May 2023	TP081	TP081_0.2	Area 1e	-	-
03 May 2023	TP082	TP082_0.5	Area 1e	-	-
10 May 2023	TP083	TP083_0.5	Area 1e	-	-
02 Aug 2023	TP083	TP083-0.0	Area 1e	0 ^{#1}	-
03 May 2023	TP084	TP084_1.5	Area 1e	-	-
03 May 2023	TP085	TP085_0.8	Area 1e	-	-
03 May 2023	TP086	TP086_0.5	Area 1e	-	-
21 Jun 2023	TP075	TP075_0.0	Area 2	0 ^{#1}	-
27 Apr 2023	TP075	TP075_0.5	Area 2	-	-
27 Apr 2023	TP075	TP075_0.5	Area 2	-	-
27 Apr 2023	TP076	TP076_0.1	Area 2	-	-



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Job Number: BCL220065.01
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Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				Asbestos fibres	Cyanide Total
				g/kg	mg/kg
EQL				0.1	1
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space					
NEPM 2013 Table 1A(1) HILs Res A Soil					
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil					
27 Apr 2023	TP077	TP077_0.5	Area 2	-	-
27 Apr 2023	TP077	TP077_0.5	Area 2	-	-
21 Jun 2023	TP135	TP135_0.0	Area 2	0 ^{#1}	-
28 Apr 2023	TP135	TP135_0.5	Area 2	-	-
28 Apr 2023	TP135	TP135_0.5	Area 2	-	-
21 Jun 2023	TP136	TP136_0.0	Area 2	0 ^{#1}	-
28 Apr 2023	TP136	TP136_2.5	Area 2	-	-
28 Apr 2023	TP137	TP137_1.0	Area 2	-	-
21 Jun 2023	TP138	TP138_0.0	Area 2	0 ^{#1}	-
28 Apr 2023	TP138	TP138_2.5	Area 2	-	-
21 Jun 2023	TP139	TP139_0.0	Area 2	0 ^{#1}	-
28 Apr 2023	TP139	TP139_0.5	Area 2	-	-
28 Apr 2023	TP140	TP140_0.5	Area 2	-	-
21 Jun 2023	TP141	TP141_0.0	Area 2	0 ^{#1}	-
26 Apr 2023	TP141	TP141_1.0	Area 2	-	-
26 Apr 2023	TP141	TP141_1.0	Area 2	-	-
26 Apr 2023	TP141	TP141_1.0 (QC100)	Area 2	-	-
26 Apr 2023	TP141	TP141_1.0 (QC200)	Area 2	-	-
28 Apr 2023	TP169	TP169_0.5	Area 2	-	-
27 May 2023	BH06	BH06_2.0	Area 3	-	-
27 May 2023	BH06	BH06_4.5	Area 3	-	-
27 May 2023	BH06	BH06_4.5	Area 3	-	-
02 Aug 2023	SS01	SS01	Area 3	0 ^{#1}	-
02 Aug 2023	SS02	SS02	Area 3	0 ^{#1}	-
10 May 2023	TP122	TP122_0.5	Area 3	0 ^{#1}	-
18 May 2023	TP123	TP123_0.5	Area 3	-	-
10 May 2023	TP143	TP143_0.2	Area 3	-	-
10 May 2023	TP144	TP144_0.5	Area 3	-	-
11 May 2023	TP145	TP145_0.5	Area 3	-	-
10 May 2023	TP146	TP146_0.2	Area 3	-	-
10 May 2023	TP146	TP146_0.2 (QC108)	Area 3	-	-
10 May 2023	TP146	TP146_0.2 (QC208)	Area 3	-	-
10 May 2023	TP148	TP148_0.5	Area 3	-	-
10 May 2023	TP161	TP161_0.5	Area 3	0 ^{#1}	-
10 May 2023	TP161	TP161_3.0	Area 3	0 ^{#1}	-
10 May 2023	TP162	TP162_0.5	Area 3	0 ^{#1}	-
10 May 2023	TP162	TP162_2.0	Area 3	0 ^{#1}	-
25 May 2023	BH05	BH05_10.5	Area 4	-	<1
25 May 2023	BH05	BH05_8.0	Area 4	-	<1
29 May 2023	BH08	BH08_4.0	Area 4	-	-
29 May 2023	BH08	BH08_7.0	Area 4	-	<1
29 May 2023	BH08	BH08_7.0	Area 4	-	-
16 Jun 2023	BH09	BH09_5.0	Area 4	-	<1
16 Jun 2023	BH09	BH09_0.2	Area 4	0 ^{#1}	<1
16 Jun 2023	BH09	BH09_0.5	Area 4	0 ^{#1}	<1
16 Jun 2023	BH09	BH09_1.0	Area 4	0 ^{#1}	<1
16 Jun 2023	BH09	BH09_2.0	Area 4	0 ^{#1}	<1
16 Jun 2023	BH09	BH09_3.0	Area 4	-	<1
16 Jun 2023	BH09	BH09_4.0	Area 4	-	<1
16 Jun 2023	BH09	BH09_6.0	Area 4	-	<1
27 Jun 2023	GW03	GW03_0.0	Area 4	0 ^{#1}	<1
27 Jun 2023	GW03	GW03_0.5	Area 4	0 ^{#1}	<1
27 Jun 2023	GW03	GW03_1.0	Area 4	-	<1
27 Jun 2023	GW03	GW03_2.0	Area 4	-	<1
29 Jun 2023	GW03	GW03_27.0	Area 4	-	<1
27 Jun 2023	GW03	GW03_3.0	Area 4	-	<1
27 Jun 2023	GW03	GW03_4.0	Area 4	-	<1
28 Jun 2023	GW03	GW03_8.0	Area 4	-	<1
28 Apr 2023	TP114	TP114_0.5	Area 4	-	<1
28 Apr 2023	TP114	TP114_1.0	Area 4	-	<1
28 Apr 2023	TP115	TP115_0.5	Area 4	-	<1
28 Apr 2023	TP115	TP115_1.0	Area 4	-	-
28 Apr 2023	TP116	TP116_0.2	Area 4	-	<1
28 Apr 2023	TP116	TP116_0.5	Area 4	-	<1
28 Apr 2023	TP117	TP117_0.5	Area 4	-	<1
28 Apr 2023	TP117	TP117_1.5	Area 4	-	<1
28 Apr 2023	TP118	TP118_0.2	Area 4	-	<1
28 Apr 2023	TP118	TP118_0.5	Area 4	-	<1
27 Apr 2023	TP119	TP119_0.2	Area 4	-	<1
27 Apr 2023	TP119	TP119_0.5	Area 4	-	<1
18 May 2023	TP120	TP120_0.4	Area 4	-	<1
17 May 2023	TP124	TP124_0.5	Area 4	-	-
17 May 2023	TP124	TP124_0.5 (QC210)	Area 4	-	<5
02 May 2023	TP125	TP125_0.5	Area 4	-	-
15 May 2023	TP126	TP126_0.5	Area 4	-	-
02 May 2023	TP127	TP127_0.5	Area 4	-	-
17 May 2023	TP128	TP128_0.5	Area 4	0 ^{#1}	-
17 May 2023	TP128	TP128_1.5	Area 4	-	-
17 May 2023	TP129	TP129_0.5	Area 4	0 ^{#1}	-
17 May 2023	TP130	TP130_0.5	Area 4	0 ^{#1}	-
17 May 2023	TP130	TP130_1.5	Area 4	-	-
17 May 2023	TP130	TP130_2.5	Area 4	-	-
17 May 2023	TP130	TP130_2.5 (QC111)	Area 4	-	-
17 May 2023	TP130	TP130_2.5 (QC211)	Area 4	-	-
02 May 2023	TP131	TP131_0.5	Area 4	-	-
02 May 2023	TP132	TP132_1.0	Area 4	-	-
02 May 2023	TP133	TP133_0.5	Area 4	-	-
02 May 2023	TP134	TP134_2.0	Area 4	-	-
28 Apr 2023	TP149	TP149_0.5	Area 4	-	<1
28 Apr 2023	TP149	TP149_0.5 (QC103)	Area 4	-	<1
28 Apr 2023	TP149	TP149_0.5 (QC203)	Area 4	-	<5
28 Apr 2023	TP149	TP149_1.5	Area 4	-	<1



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				Asbestos fibres	Cyanide Total
				g/kg	mg/kg
EQL				0.1	1
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space					
NEPM 2013 Table 1A(1) HILs Res A Soil					
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil					
02 May 2023	TP163	TP163_0.5	Area 4	-	-
23 Jun 2023	GW02	GW02_0.0	Balance of Site	-	-
23 Jun 2023	GW02	GW02_0.3	Balance of Site	-	-
23 Jun 2023	GW02	GW02_1.0	Balance of Site	-	-
23 Jun 2023	GW02	GW02_15.0	Balance of Site	-	-
23 Jun 2023	GW02	GW02_2.0	Balance of Site	-	-
30 Jun 2023	GW04	GW04_0.5	Balance of Site	-	1
30 Jun 2023	GW04	GW04_0.5 (QC120)	Balance of Site	-	<1
30 Jun 2023	GW04	GW04_0.5 (QC220)	Balance of Site	-	<5
30 Jun 2023	GW04	GW04_1.5	Balance of Site	-	<1
30 Jun 2023	GW04	GW04_1.5 (QC121)	Balance of Site	-	<1
30 Jun 2023	GW04	GW04_1.5 (QC221)	Balance of Site	-	<5
02 Jul 2023	GW04	GW04_28.5	Balance of Site	-	<1
30 Jun 2023	GW04	GW04_3.0	Balance of Site	-	<1
30 Jun 2023	GW04	GW04_3.0 (QC122)	Balance of Site	-	<1
30 Jun 2023	GW04	GW04_3.0 (QC222)	Balance of Site	-	<5
08 May 2023	TP001	TP001-0.5	Balance of Site	-	-
10 May 2023	TP060	TP060_0.5	Balance of Site	-	-
10 May 2023	TP150	TP150_0.5	Balance of Site	-	-
10 May 2023	TP151	TP151_0.2	Balance of Site	-	-
15 May 2023	TP155	TP155_0.5	Balance of Site	-	-
15 May 2023	TP156	TP156_0.2	Balance of Site	-	-
10 May 2023	TP157	TP157_0.2	Balance of Site	-	-
10 May 2023	TP159	TP159_0.2	Balance of Site	-	-
28 Apr 2023	TP165	TP165_0.2	Balance of Site	-	-
02 May 2023	TP165	TP165_0.5	Balance of Site	0 ^{#1}	-
10 May 2023	TP168	TP168_0.5	Balance of Site	-	-

NOTE - "<0.": less than LOR, "-": not analysed

Comments

- #1 No
- #2 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to **Table 20** in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal
 Job Number: BCL220065.01
 Client: QPG
 Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

	PAH										
	Benzo(b+j+k)fluoranthene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space										33	
NEPM 2013 Table 1A(1) HILs Res A Soil											
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space											
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil										0.7	

Date	Location Code	Field ID	Investigation Area											
23 May 2023	BH02	BH02 - 1.4	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
23 May 2023	BH02	BH02 - 1.4	Area 1a	-	-	-	-	-	-	-	-	-	-	-
24 May 2023	BH04	BH04 - 0.2	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
24 May 2023	BH04	BH04 - 0.2	Area 1a	-	-	-	-	-	-	-	-	-	-	-
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	1	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	-	-	-	-	-	-	-	-	-	-	-
09 May 2023	TP032	TP032_0.5	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP033	TP033_0.2	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP034	TP034_0.2	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15 May 2023	TP035	TP035_0.2	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP036	TP036_0.2	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.7
09 May 2023	TP037	TP037_0.5	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP038	TP038_0.2	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP039	TP039_0.5	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP040	TP040_0.5	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP040	TP040_1.0	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP041	TP041_0.5	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP042	TP042_0.2	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP043	TP043_0.2	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP044	TP044_0.2	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP051	TP051_0.5	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8
28 Apr 2023	TP051	TP051_0.5	Area 1a	-	-	-	-	-	-	-	-	0.7	-	-
03 May 2023	TP052	TP052_0.5	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP052	TP052_1.0	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP054	TP054_1.0	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP055	TP055_0.5	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
05 May 2023	TP055	TP055_0.5	Area 1a	-	-	-	-	-	-	-	-	0.6	-	-
10 May 2023	TP056	TP056_0.5	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP057	TP057_0.5	Area 1a	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP058	TP058_0.5	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP059	TP059_0.2	Area 1a	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
23 May 2023	BH03	BH03 - 0.2	Area 1b	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP002	TP002_0.2	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP003	TP003_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.7
10 May 2023	TP003	TP003_0.5 (QC207)	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP004	TP004_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP005	TP005_0.5	Area 1b	<1	<0.5	3.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP005	TP005_0.5	Area 1b	-	-	-	-	-	-	-	-	-	-	-
08 May 2023	TP006	TP006_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP007	TP007_1.0	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP008	TP008_0.5	Area 1b	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP009	TP009_0.5	Area 1b	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP009	TP009_0.5	Area 1b	-	-	-	-	-	-	-	-	-	-	-
08 May 2023	TP011	TP011_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP012	TP012_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP013	TP013_0.2	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.7
08 May 2023	TP014	TP014_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08 May 2023	TP015	TP015_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
15 May 2023	TP029	TP029_0.5	Area 1b	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP029	TP029_0.5 (QC209)	Area 1b	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP031	TP031_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP046	TP046_0.5	Area 1b	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP047	TP047_1.1	Area 1b	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP048	TP048_0.5	Area 1b	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP048	TP048_0.5	Area 1b	-	-	-	-	-	-	-	-	-	-	-
09 May 2023	TP049	TP049_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP050	TP050_0.5	Area 1b	-	-	-	-	-	<0.5	<0.5	1.1	0.6	<0.5	1.2
03 Jul 2023	GW05	GW05_0.0	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
03 Jul 2023	GW05	GW05_0.5	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
03 Jul 2023	GW05	GW05_1.0	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
03 Jul 2023	GW05	GW05_1.3	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 Jul 2023	GW05	GW05_8.5	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP016	TP016_0.7	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP017	TP017_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP018	TP018_1.0	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP021	TP021_0.2	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP022	TP022_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09 May 2023	TP023	TP023_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP024	TP024_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP025	TP025_1.0	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP026	TP026_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP027	TP027_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	0.6	<0.5	0.7
03 May 2023	TP028	TP028_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP094	TP094_0.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP095	TP095_0.5	Area 1c	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	1.4
04 May 2023	TP095	TP095_0.5	Area 1c	-	-	-	-	-	-	-	-	0.8	-	-
04 May 2023	TP096	TP096_2.0	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP096	TP096_2.0 (QC105)	Area 1c	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP096	TP096_2.0 (QC205)	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP097	TP097_2.0	Area 1c	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.1
05 May 2023	TP097	TP097_2.0	Area 1c	-	-	-	-	-	-	-	-	1.2	-	-
05 May 2023	TP098	TP098_1.5	Area 1c	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP099	TP099_1.0	Area 1c	-	-	-</								



Project Name: QPG Ebbw Vale EMR Removal
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				PAH										
				Benzo(b+j+k)fluoranthene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space													33	
NEPM 2013 Table 1A(1) HILs Res A Soil														
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil													0.7	
06 Jul 2023	BH15	BH15_0.5	Area 1d	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
06 Jul 2023	BH15	BH15_0.5	Area 1d	-	-	-	-	-	-	-	-	0.7	-	-
06 Jul 2023	BH15	BH15_1.0	Area 1d	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
06 Jul 2023	BH15	BH15_1.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-
06 Jul 2023	BH15	BH15_32.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-
07 Jul 2023	GW06	GW06_0.0	Area 1d	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
07 Jul 2023	GW06	GW06_1.0	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
12 May 2023	TP074	TP074_0.2	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP089	TP089_0.5	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04 May 2023	TP092	TP092_0.5	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP093	TP093_1.0	Area 1d	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9
05 May 2023	TP093	TP093_1.0	Area 1d	-	-	-	-	-	-	-	-	0.6	-	-
05 May 2023	TP093	TP093_2.0	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
04 May 2023	TP093	TP093_2.0 (QC106)	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
05 May 2023	TP093	TP093_2.0 (QC206)	Area 1d	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
12 May 2023	TP101	TP101_0.2	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP102	TP102_0.5	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
12 May 2023	TP103	TP103_0.2	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18 May 2023	TP105	TP105_0.3	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP106	TP106_0.5	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18 May 2023	TP107	TP107_0.5	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP109	TP109_0.5	Area 1d	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP109	TP109_2.0	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 May 2023	TP110	TP110_1.0	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP111	TP111_0.5	Area 1d	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
05 May 2023	TP111	TP111_0.5	Area 1d	-	-	-	-	-	-	-	-	0.8	-	-
05 May 2023	TP111	TP111_1.0	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
02 May 2023	TP112	TP112_0.5	Area 1d	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP113	TP113_0.5	Area 1d	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 Jun 2023	BH11	BH11_0.0	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 Jun 2023	BH11	BH11_0.5	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 Jun 2023	BH11	BH11_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	BH11	BH11-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
18 Jun 2023	BH12	BH12_0.5	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
18 Jun 2023	BH12	BH12_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-
18 Jun 2023	BH12	BH12_5.0	Area 1e	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	0.5	-
18 Jun 2023	BH13	BH13_0.5	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.8
18 Jun 2023	BH13	BH13_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-
18 Jun 2023	BH13	BH13_2.0	Area 1e	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.0
18 Jun 2023	BH13	BH13_2.0	Area 1e	-	-	-	-	-	-	-	-	0.7	-	-
03 Aug 2023	BH13	BH13-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
20 Jun 2023	GW01	GW01_0.5	Area 1e	<1	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.0
20 Jun 2023	GW01	GW01_0.5	Area 1e	-	-	-	-	-	-	-	-	1.5	-	-
20 Jun 2023	GW01	GW01_8.0	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20 Jun 2023	GW01	GW01_8.0 (QC119)	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20 Jun 2023	GW01	GW01_8.0 (QC219)	Area 1e	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20 Jun 2023	GW01	GW01_9.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
03 Aug 2023	TP061	TP061-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP062	TP062_0.3	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP063	TP063_0.2	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP063	TP063_0.2	Area 1e	-	-	-	-	-	-	-	0.6	-	-	-
02 Aug 2023	TP063	TP063-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP064	TP064_0.2	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 Aug 2023	TP064	TP064-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP065	TP065_0.2	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP066	TP066_1.0	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP067	TP067_0.2	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP068	TP068_0.5	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP069	TP069_0.5	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	0.8	<0.5	1.2
27 Apr 2023	TP070	TP070_1.0	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP070	TP070_1.0 (QC102)	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP070	TP070_1.0 (QC202)	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	1.0	<0.5
02 Aug 2023	TP070	TP070-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP071	TP071_1.0	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP072	TP072_0.5	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	TP073	TP073_1.0	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	1.3
26 Apr 2023	TP073	TP073_1.0	Area 1e	-	-	-	-	-	-	-	-	1.5	-	-
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	1.4
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP073	TP073_1.0 (QC201)	Area 1e	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
02 Aug 2023	TP073	TP073-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP078	TP078_0.5	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 Aug 2023	TP079	TP079-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP080	TP080_2.0	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	0.8	<0.5	1.7
02 Aug 2023	TP080	TP080-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
10 May 2023	TP081	TP081_0.2	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP082	TP082_0.5	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
10 May 2023	TP083	TP083_0.5	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 Aug 2023	TP083	TP083-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP084	TP084_1.5	Area 1e	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP085	TP085_0.8	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP086	TP086_0.5	Area 1e	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
21 Jun 2023	TP075	TP075_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP075	TP075_0.5	Area 2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP075	TP075_0.5	Area 2	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP076	TP076_0.1	Area 2	-	-	-	-	-	<0.5	<0.5	<0.5	1.6	<0.5	1.5



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				PAH										
				Benzo(b+j+k)fluoranthene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space													33	
NEPM 2013 Table 1A(1) HILs Res A Soil														
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil													0.7	
27 Apr 2023	TP077	TP077_0.5	Area 2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4
27 Apr 2023	TP077	TP077_0.5	Area 2	-	-	-	-	-	-	-	-	1.2	-	-
21 Jun 2023	TP135	TP135_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP135	TP135_0.5	Area 2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.6
28 Apr 2023	TP135	TP135_0.5	Area 2	-	-	-	-	-	-	-	-	-	-	-
21 Jun 2023	TP136	TP136_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP136	TP136_2.5	Area 2	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP137	TP137_1.0	Area 2	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
21 Jun 2023	TP138	TP138_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP138	TP138_2.5	Area 2	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
21 Jun 2023	TP139	TP139_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP139	TP139_0.5	Area 2	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP140	TP140_0.5	Area 2	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
21 Jun 2023	TP141	TP141_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP141	TP141_1.0	Area 2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	TP141	TP141_1.0	Area 2	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP141	TP141_1.0 (QC100)	Area 2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	TP141	TP141_1.0 (QC200)	Area 2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP169	TP169_0.5	Area 2	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 May 2023	BH06	BH06_2.0	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 May 2023	BH06	BH06_4.5	Area 3	<1	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 May 2023	BH06	BH06_4.5	Area 3	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SS01	SS01	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 Aug 2023	SS02	SS02	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP122	TP122_0.5	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18 May 2023	TP123	TP123_0.5	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP143	TP143_0.2	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP144	TP144_0.5	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
11 May 2023	TP145	TP145_0.5	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
10 May 2023	TP146	TP146_0.2	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP146	TP146_0.2 (QC108)	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP146	TP146_0.2 (QC208)	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP148	TP148_0.5	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP161	TP161_0.5	Area 3	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP161	TP161_3.0	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP162	TP162_0.5	Area 3	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP162	TP162_2.0	Area 3	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
25 May 2023	BH05	BH05_10.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
25 May 2023	BH05	BH05_8.0	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
29 May 2023	BH08	BH08_4.0	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
29 May 2023	BH08	BH08_7.0	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
29 May 2023	BH08	BH08_7.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
16 Jun 2023	BH09	BH09_5.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
16 Jun 2023	BH09	BH09_0.2	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16 Jun 2023	BH09	BH09_0.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
16 Jun 2023	BH09	BH09_1.0	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
16 Jun 2023	BH09	BH09_2.0	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
16 Jun 2023	BH09	BH09_3.0	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
16 Jun 2023	BH09	BH09_4.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
16 Jun 2023	BH09	BH09_6.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_0.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_1.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_2.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
29 Jun 2023	GW03	GW03_27.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_3.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_4.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
28 Jun 2023	GW03	GW03_8.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP114	TP114_0.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP114	TP114_1.0	Area 4	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP115	TP115_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP115	TP115_1.0	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP116	TP116_0.2	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP116	TP116_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP117	TP117_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP117	TP117_1.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP118	TP118_0.2	Area 4	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP118	TP118_0.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP119	TP119_0.2	Area 4	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP119	TP119_0.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18 May 2023	TP120	TP120_0.4	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP124	TP124_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP124	TP124_0.5 (QC210)	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 May 2023	TP125	TP125_0.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15 May 2023	TP126	TP126_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 May 2023	TP127	TP127_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP128	TP128_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP128	TP128_1.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP129	TP129_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP130	TP130_0.5	Area 4	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP130	TP130_1.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP130	TP130_2.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP130	TP130_2.5 (QC111)	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP130	TP130_2.5 (QC211)	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 May 2023	TP131	TP131_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 May 2023	TP132	TP132_1.0	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 May 2023	TP133	TP133_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02 May 2023	TP134	TP134_2.0	Area 4	-	-	-	-							



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				PAH										
		Benzo(b+j+k)fluoranthene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene		
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
EQL		1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space											33			
NEPM 2013 Table 1A(1) HILs Res A Soil														
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil											0.7			
02 May 2023	TP163	TP163_0.5	Area 4	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5		
23 Jun 2023	GW02	GW02_0.0	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-		
23 Jun 2023	GW02	GW02_0.3	Balance of Site	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5		
23 Jun 2023	GW02	GW02_1.0	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-		
23 Jun 2023	GW02	GW02_15.0	Balance of Site	<1	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	-		
23 Jun 2023	GW02	GW02_2.0	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-		
30 Jun 2023	GW04	GW04_0.5	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-		
30 Jun 2023	GW04	GW04_0.5 (QC120)	Balance of Site	-	-	-	-	-	-	-	-	-		
30 Jun 2023	GW04	GW04_0.5 (QC220)	Balance of Site	-	-	-	-	-	-	-	-	-		
30 Jun 2023	GW04	GW04_1.5	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-		
30 Jun 2023	GW04	GW04_1.5 (QC121)	Balance of Site	-	-	-	-	-	-	-	-	-		
30 Jun 2023	GW04	GW04_1.5 (QC221)	Balance of Site	-	-	-	-	-	-	-	-	-		
02 Jul 2023	GW04	GW04_28.5	Balance of Site	-	-	-	-	-	-	-	-	-		
30 Jun 2023	GW04	GW04_3.0	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-		
30 Jun 2023	GW04	GW04_3.0 (QC122)	Balance of Site	-	-	-	-	-	-	-	-	-		
30 Jun 2023	GW04	GW04_3.0 (QC222)	Balance of Site	-	-	-	-	-	-	-	-	-		
08 May 2023	TP001	TP001-0.5	Balance of Site	-	-	-	-	-	<0.5	<0.5	<0.5	0.5		
10 May 2023	TP060	TP060_0.5	Balance of Site	-	-	-	-	-	<0.5	<0.5	<0.5	0.8		
10 May 2023	TP150	TP150_0.5	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
10 May 2023	TP151	TP151_0.2	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
15 May 2023	TP155	TP155_0.5	Balance of Site	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5		
15 May 2023	TP156	TP156_0.2	Balance of Site	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5		
10 May 2023	TP157	TP157_0.2	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
10 May 2023	TP159	TP159_0.2	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
28 Apr 2023	TP165	TP165_0.2	Balance of Site	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
02 May 2023	TP165	TP165_0.5	Balance of Site	-	-	-	-	-	-	-	-	-		
10 May 2023	TP168	TP168_0.5	Balance of Site	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5		

NOTE - "<0.": less than LOR, "-": not analysed

Comments

- #1 No
- #2 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to **Table 20** in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

	PAH												
	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space													
NEPM 2013 Table 1A(1) HILS Res A Soil										3	3	3	300
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space													
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil													

Date	Location Code	Field ID	Investigation Area													
23 May 2023	BH02	BH02 - 1.4	Area 1a	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
23 May 2023	BH02	BH02 - 1.4	Area 1a	-	-	-	-	-	-	-	-	-	-	-	-	1.0
24 May 2023	BH04	BH04 - 0.2	Area 1a	<0.5	<0.5	1.0	<0.5	0.5	<0.5	<0.5	0.6	0.5	0.6	1.2	<0.5	2.7
24 May 2023	BH04	BH04 - 0.2	Area 1a	-	-	1.1	-	0.6	-	-	-	-	-	-	-	2.8
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	<0.5	<0.5	1.1	<0.5	0.6	<0.5	<0.5	1.2	0.5	0.7	1.2	<0.5	4.2
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	-	-	1.3	-	-	-	-	-	-	-	-	-	4.6
09 May 2023	TP032	TP032_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP033	TP033_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP034	TP034_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
15 May 2023	TP035	TP035_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP036	TP036_0.2	Area 1a	<0.5	<0.5	0.9	<0.5	0.5	<0.5	<0.5	1.1	0.5	0.6	1.2	<0.5	3.7
09 May 2023	TP037	TP037_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP038	TP038_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 May 2023	TP039	TP039_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 May 2023	TP040	TP040_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 May 2023	TP040	TP040_1.0	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP041	TP041_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP042	TP042_0.2	Area 1a	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	1.2	<0.5	1.2
09 May 2023	TP043	TP043_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP044	TP044_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
28 Apr 2023	TP051	TP051_0.5	Area 1a	<0.5	<0.5	0.9	<0.5	0.7	<0.5	<0.5	0.7	0.7	0.6	1.2	<0.5	3.1
28 Apr 2023	TP051	TP051_0.5	Area 1a	-	-	1.0	-	0.9	-	-	0.8	0.8	0.7	1.3	-	4.9
03 May 2023	TP052	TP052_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 May 2023	TP052	TP052_1.0	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP054	TP054_1.0	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP055	TP055_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP055	TP055_0.5	Area 1a	-	-	0.8	-	0.8	-	-	0.6	0.7	0.7	-	-	4.0
10 May 2023	TP056	TP056_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 May 2023	TP057	TP057_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP058	TP058_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP059	TP059_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
23 May 2023	BH03	BH03 - 0.2	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP002	TP002_0.2	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP003	TP003_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	1.2	<0.5	2.1
10 May 2023	TP003	TP003_0.5 (QC207)	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP004	TP004_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP005	TP005_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.7	<0.5	0.6	1.2	<0.5	0.7
08 May 2023	TP005	TP005_0.5	Area 1b	0.6	-	0.6	-	-	-	-	1.2	-	-	-	-	3.5
08 May 2023	TP006	TP006_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP007	TP007_1.0	Area 1b	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.7
08 May 2023	TP008	TP008_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP009	TP009_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP009	TP009_0.5	Area 1b	-	-	0.6	-	-	-	-	-	-	-	-	-	0.6
08 May 2023	TP011	TP011_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP012	TP012_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP013	TP013_0.2	Area 1b	<0.5	<0.5	0.6	<0.5	0.6	<0.5	<0.5	0.5	0.5	0.6	1.2	<0.5	2.9
08 May 2023	TP014	TP014_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
08 May 2023	TP015	TP015_0.5	Area 1b	<0.5	<0.5	0.6	<0.5	0.6	<0.5	<0.5	0.5	<0.5	0.6	1.2	<0.5	2.3
15 May 2023	TP029	TP029_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
17 May 2023	TP029	TP029_0.5 (QC209)	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP031	TP031_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 May 2023	TP046	TP046_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 May 2023	TP047	TP047_1.1	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP048	TP048_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP048	TP048_0.5	Area 1b	-	-	-	-	-	-	-	0.6	-	-	-	-	0.6
09 May 2023	TP049	TP049_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP050	TP050_0.5	Area 1b	<0.5	<0.5	2.2	<0.5	1.6	<0.5	<0.5	1.3	1.2	0.8	1.3	<0.5	9.2
03 Jul 2023	GW05	GW05_0.0	Area 1c	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	0.6	1.2	<0.5	0.8
03 Jul 2023	GW05	GW05_0.5	Area 1c	<0.5	-	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	1.0
03 Jul 2023	GW05	GW05_1.0	Area 1c	<0.5	-	1.2	<0.5	0.8	<0.5	<0.5	<0.5	0.5	0.6	1.2	<0.5	2.5
03 Jul 2023	GW05	GW05_1.3	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
03 Jul 2023	GW05	GW05_8.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
04 May 2023	TP016	TP016_0.7	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
04 May 2023	TP017	TP017_0.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
04 May 2023	TP018	TP018_1.0	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP021	TP021_0.2	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP022	TP022_0.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
09 May 2023	TP023	TP023_0.5	Area 1c	<0.5	&											



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				PAH												
				Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																
NEPM 2013 Table 1A(1) HILs Res A Soil													3	3	3	300
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																
06 Jul 2023	BH15	BH15_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
06 Jul 2023	BH15	BH15_0.5	Area 1d	-	-	1.3	-	1.3	-	-	1.0	1.0	0.7	-	-	6.3
06 Jul 2023	BH15	BH15_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
06 Jul 2023	BH15	BH15_1.0	Area 1d	-	-	0.7	-	0.6	-	-	0.6	0.6	-	-	-	2.5
06 Jul 2023	BH15	BH15_32.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-
07 Jul 2023	GW06	GW06_0.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
07 Jul 2023	GW06	GW06_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
12 May 2023	TP074	TP074_0.2	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP089	TP089_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
04 May 2023	TP092	TP092_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP093	TP093_1.0	Area 1d	<0.5	0.8	0.9	<0.5	0.8	<0.5	<0.5	0.6	0.7	0.6	1.2	<0.5	2.1
05 May 2023	TP093	TP093_1.0	Area 1d	-	-	<1.0 ^{#2}	-	-	-	-	-	-	0.8	1.3	-	5.3
05 May 2023	TP093	TP093_2.0	Area 1d	<0.5	0.6	0.6	<0.5	0.6	<0.5	<0.5	0.5	0.5	0.7	1.2	<0.5	3.4
04 May 2023	TP093	TP093_2.0 (QC106)	Area 1d	<0.5	0.6	0.7	<0.5	0.6	<0.5	<0.5	<0.5	0.6	0.7	1.2	<0.5	3.1
05 May 2023	TP093	TP093_2.0 (QC206)	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
12 May 2023	TP101	TP101_0.2	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
28 Apr 2023	TP102	TP102_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
12 May 2023	TP103	TP103_0.2	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
18 May 2023	TP105	TP105_0.3	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP106	TP106_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
18 May 2023	TP107	TP107_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP109	TP109_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP109	TP109_2.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
02 May 2023	TP110	TP110_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP111	TP111_0.5	Area 1d	<0.5	0.5	0.6	<0.5	0.8	<0.5	<0.5	0.9	0.6	0.6	1.2	<0.5	2.3
05 May 2023	TP111	TP111_0.5	Area 1d	-	-	<0.7 ^{#2}	-	-	-	-	-	-	0.7	-	-	4.8
05 May 2023	TP111	TP111_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.6
02 May 2023	TP112	TP112_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
05 May 2023	TP113	TP113_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
17 Jun 2023	BH11	BH11_0.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
17 Jun 2023	BH11	BH11_0.5	Area 1e	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	0.5
17 Jun 2023	BH11	BH11_0.5	Area 1e	-	-	0.6	-	-	-	-	-	-	-	-	-	0.6
02 Aug 2023	BH11	BH11-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
18 Jun 2023	BH12	BH12_0.5	Area 1e	<0.5	<0.5	0.6	<0.5	0.5	<0.5	<0.5	<0.5	0.5	0.6	1.2	<0.5	0.6
18 Jun 2023	BH12	BH12_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	2.1
18 Jun 2023	BH12	BH12_5.0	Area 1e	0.5	-	2.0	<0.5	1.7	<0.5	<0.5	1.8	1.6	1.1	1.4	0.8	11.4
18 Jun 2023	BH13	BH13_0.5	Area 1e	<0.5	<0.5	0.8	<0.5	0.7	<0.5	<0.5	0.7	0.7	0.6	1.2	<0.5	3.7
18 Jun 2023	BH13	BH13_0.5	Area 1e	-	-	0.9	-	-	-	-	0.8	-	0.7	-	-	4.3
18 Jun 2023	BH13	BH13_2.0	Area 1e	<0.5	<0.5	1.0	<0.5	0.8	<0.5	<0.5	0.8	0.8	0.7	1.2	<0.5	5.1
18 Jun 2023	BH13	BH13_2.0	Area 1e	-	-	1.3	-	-	-	-	-	0.9	-	1.3	-	5.4
03 Aug 2023	BH13	BH13-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
20 Jun 2023	GW01	GW01_0.5	Area 1e	0.5	<0.5	0.5	<0.5	0.6	<0.5	<0.5	3.5	0.6	0.6	1.2	<0.5	7.2
20 Jun 2023	GW01	GW01_0.5	Area 1e	-	-	1.6	-	-	-	-	3.8	-	0.8	1.4	-	8.2
20 Jun 2023	GW01	GW01_8.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
20 Jun 2023	GW01	GW01_8.0 (QC119)	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
20 Jun 2023	GW01	GW01_8.0 (QC219)	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
20 Jun 2023	GW01	GW01_9.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
03 Aug 2023	TP061	TP061-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP062	TP062_0.3	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP063	TP063_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP063	TP063_0.2	Area 1e	-	-	0.6	-	-	-	-	-	-	-	-	-	1.7
02 Aug 2023	TP063	TP063-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP064	TP064_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
02 Aug 2023	TP064	TP064-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP065	TP065_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP066	TP066_1.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP067	TP067_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP068	TP068_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP069	TP069_0.5	Area 1e	<0.5	<0.5	1.2	<0.5	1.2	<0.5	<0.5	1.0	1.1	0.8	1.3	<0.5	6.5
27 Apr 2023	TP070	TP070_1.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.6	1.2	<0.5	0.5
27 Apr 2023	TP070	TP070_1.0 (QC102)	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP070	TP070_1.0 (QC202)	Area 1e	<0.5	0.8	1.0	<0.5	0.6	<0.5	<0.5	0.7	<0.5	1.4	1.7	1.1	4.1
02 Aug 2023	TP070	TP070-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP071	TP071_1.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP072	TP072_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
26 Apr 2023	TP073	TP073_1.0	Area 1e	<0.5	<0.5	0.9	<0.5	1.0	<0.5	<0.5	0.7	0.9	0.6	1.2	<0.5	4.0
26 Apr 2023	TP073	TP073_1.0	Area 1e	-	-	2.7	-	1.6	-	-	1.2	1.6	0.8	1.4	-	9.9
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	<0.5	<0.5	1.3	<0.5	1.3	<0.5	<0.5	1.0	1.2	0.7	1.2	<0.5	6.7
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	-	-	-	-	2.1	-	-	1.2	1.4	0.8	1.3	-	8.3
26 Apr 2023	TP073	TP073_1.0 (QC201)	Area 1e	<0.5	<0.5	0.7	<0.5	0.7	<0.5	<0.5	0.5	0.7	0.6	1.2	<0.5	3.1
02 Aug 2023	TP073	TP073-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP078	TP078_0.5	Area 1e	<0.5	<0.5</											



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Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				PAH												
				Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																
NEPM 2013 Table 1A(1) HILs Res A Soil													3	3	3	300
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																
27 Apr 2023	TP077	TP077 0.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 Apr 2023	TP077	TP077 0.5	Area 2	-	-	1.6	-	1.1	-	-	0.9	1.1	0.8	1.4	-	7.3
21 Jun 2023	TP135	TP135 0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP135	TP135 0.5	Area 2	<0.5	<0.5	0.7	<0.5	0.6	<0.5	<0.5	0.6	0.6	0.6	1.2	<0.5	2.6
28 Apr 2023	TP135	TP135 0.5	Area 2	-	-	0.8	-	0.8	-	-	-	0.7	0.7	-	-	3.9
21 Jun 2023	TP136	TP136 0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP136	TP136 2.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
28 Apr 2023	TP137	TP137 1.0	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
21 Jun 2023	TP138	TP138 0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP138	TP138 2.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
21 Jun 2023	TP139	TP139 0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP139	TP139 0.5	Area 2	<0.5	<0.5	0.7	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	1.2
28 Apr 2023	TP140	TP140 0.5	Area 2	<0.5	<0.5	1.0	<0.5	0.5	<0.5	<0.5	1.3	<0.5	0.6	1.2	<0.5	3.4
21 Jun 2023	TP141	TP141 0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP141	TP141 1.0	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
26 Apr 2023	TP141	TP141 1.0	Area 2	-	-	-	-	-	-	-	0.6	-	-	-	-	0.6
26 Apr 2023	TP141	TP141 1.0 (QC100)	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
26 Apr 2023	TP141	TP141 1.0 (QC200)	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
28 Apr 2023	TP169	TP169 0.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 May 2023	BH06	BH06 2.0	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
27 May 2023	BH06	BH06 4.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	0.6	1.2	<0.5	2.0
27 May 2023	BH06	BH06 4.5	Area 3	-	-	-	-	-	-	-	1.4	-	-	-	-	2.2
02 Aug 2023	SS01	SS01	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
02 Aug 2023	SS02	SS02	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP122	TP122 0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
18 May 2023	TP123	TP123 0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP143	TP143 0.2	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP144	TP144 0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	1.2	<0.5	0.6
11 May 2023	TP145	TP145 0.5	Area 3	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	1.3
10 May 2023	TP146	TP146 0.2	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	1.2	<0.5	0.6
10 May 2023	TP146	TP146 0.2 (QC108)	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP146	TP146 0.2 (QC208)	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP148	TP148 0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP161	TP161 0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP161	TP161 3.0	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP162	TP162 0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	1.2	<0.5	0.6
10 May 2023	TP162	TP162 2.0	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.6	1.2	<0.5	0.5
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
25 May 2023	BH05	BH05 - 8.0	Area 4	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
29 May 2023	BH08	BH08 4.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
29 May 2023	BH08	BH08 7.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
29 May 2023	BH08	BH08 7.0	Area 4	-	-	-	-	-	-	-	-	-				



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

Project Name: QPG Ebbw Vale EMR Removal Job Number: BCL220065.01 Client: QPG Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results				PAH												
				Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																
NEPM 2013 Table 1A(1) HILs Res A Soil													3	3	3	300
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																
02 May 2023	TP163	TP163_0.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
23 Jun 2023	GW02	GW02_0.0	Balance of Site	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
23 Jun 2023	GW02	GW02_0.3	Balance of Site	<0.5	-	1.4	<0.5	1.1	<0.5	<0.5	<0.5	1.2	0.7	1.2	<0.5	5.5
23 Jun 2023	GW02	GW02_1.0	Balance of Site	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
23 Jun 2023	GW02	GW02_15.0	Balance of Site	<0.5	-	0.7	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	0.6	1.2	<0.5	2.1
23 Jun 2023	GW02	GW02_2.0	Balance of Site	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
30 Jun 2023	GW04	GW04_0.5	Balance of Site	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
30 Jun 2023	GW04	GW04_0.5 (QC120)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_0.5 (QC220)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_1.5	Balance of Site	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
30 Jun 2023	GW04	GW04_1.5 (QC121)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_1.5 (QC221)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
02 Jul 2023	GW04	GW04_28.5	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_3.0	Balance of Site	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
30 Jun 2023	GW04	GW04_3.0 (QC122)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_3.0 (QC222)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
08 May 2023	TP001	TP001-0.5	Balance of Site	<0.5	<0.5	0.8	<0.5	0.6	<0.5	<0.5	0.7	0.6	0.7	1.2	<0.5	4.0
10 May 2023	TP060	TP060_0.5	Balance of Site	<0.5	<0.5	1.4	<0.5	1.0	<0.5	<0.5	0.9	1.0	0.7	1.3	<0.5	5.9
10 May 2023	TP150	TP150_0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP151	TP151_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
15 May 2023	TP155	TP155_0.5	Balance of Site	<0.5	<0.5	0.6	<0.5	0.6	<0.5	<0.5	<0.5	0.6	0.6	1.2	<0.5	1.8
15 May 2023	TP156	TP156_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP157	TP157_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
10 May 2023	TP159	TP159_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
28 Apr 2023	TP165	TP165_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5
02 May 2023	TP165	TP165_0.5	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-	-
10 May 2023	TP168	TP168_0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5

NOTE - "<0.": less than LOR, "-": not analysed

Comments

- #1 No
- #2 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to **Table 20** in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

	Phenols											
	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
EQL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space												
NEPM 2013 Table 1A(1) HILS Res A Soil											100	3,000
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space												
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil												

Date	Location Code	Field ID	Investigation Area												
23 May 2023	BH02	BH02 - 1.4	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
23 May 2023	BH02	BH02 - 1.4	Area 1a	-	-	-	-	-	-	-	-	-	-	-	-
24 May 2023	BH04	BH04 - 0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
24 May 2023	BH04	BH04 - 0.2	Area 1a	-	-	-	-	-	-	-	-	-	-	-	-
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	-	-	-	-	-	-	-	-	-	-	-	-
09 May 2023	TP032	TP032_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP033	TP033_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
09 May 2023	TP034	TP034_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
15 May 2023	TP035	TP035_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP036	TP036_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP037	TP037_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP038	TP038_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
03 May 2023	TP039	TP039_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
03 May 2023	TP040	TP040_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
03 May 2023	TP040	TP040_1.0	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
09 May 2023	TP041	TP041_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP042	TP042_0.2	Area 1a	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP043	TP043_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
27 Apr 2023	TP044	TP044_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP051	TP051_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP051	TP051_0.5	Area 1a	-	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP052	TP052_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
03 May 2023	TP052	TP052_1.0	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP054	TP054_1.0	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	TP055	TP055_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
05 May 2023	TP055	TP055_0.5	Area 1a	-	-	-	-	-	-	-	-	-	-	-	-
10 May 2023	TP056	TP056_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
03 May 2023	TP057	TP057_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
10 May 2023	TP058	TP058_0.5	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP059	TP059_0.2	Area 1a	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
23 May 2023	BH03	BH03 - 0.2	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
08 May 2023	TP002	TP002_0.2	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP003	TP003_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP003	TP003_0.5 (QC107)	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP003	TP003_0.5 (QC207)	Area 1b	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
08 May 2023	TP004	TP004_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP005	TP005_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
08 May 2023	TP005	TP005_0.5	Area 1b	-	-	-	-	-	-	-	-	-	-	-	-
08 May 2023	TP006	TP006_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP007	TP007_1.0	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP008	TP008_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
08 May 2023	TP009	TP009_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
08 May 2023	TP009	TP009_0.5	Area 1b	-	-	-	-	-	-	-	-	-	-	-	-
08 May 2023	TP011	TP011_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP012	TP012_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP013	TP013_0.2	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP014	TP014_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	TP015	TP015_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
15 May 2023	TP029	TP029_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
17 May 2023	TP029	TP029_0.5 (QC209)	Area 1b	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
09 May 2023	TP031	TP031_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
03 May 2023	TP046	TP046_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
03 May 2023	TP047	TP047_1.1	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
05 May 2023	TP048	TP048_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
05 May 2023	TP048	TP048_0.5	Area 1b	-	-	-	-	-	-	-	-	-	-	-	-
09 May 2023	TP049	TP049_0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP050	TP050_0.5	Area 1b	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
03 Jul 2023	GW05	GW05_0.0	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
03 Jul 2023	GW05	GW05_0.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
03 Jul 2023	GW05	GW05_1.0	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
03 Jul 2023	GW05	GW05_1.3	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
03 Jul 2023	GW05	GW05_8.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
04 May 2023	TP016	TP016_0.7	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
04 May 2023	TP017	TP017_0.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
04 May 2023	TP018	TP018_1.0	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
09 May 2023	TP021	TP021_0.2	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP022	TP022_0.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
09 May 2023	TP023	TP023_0.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
04 May 2023	TP024	TP024_0.5	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
04 May 2023	TP025	TP025_1.0	Area 1c	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
04 May 2023	TP026	TP026_0.5	Area 1c	<0.5	<0.5	<0.									



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				Phenols											
				2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space															
NEPM 2013 Table 1A(1) HILs Res A Soil														100	3,000
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space															
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil															
06 Jul 2023	BH15	BH15_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
06 Jul 2023	BH15	BH15_0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-
06 Jul 2023	BH15	BH15_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
06 Jul 2023	BH15	BH15_1.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-
06 Jul 2023	BH15	BH15_32.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-
07 Jul 2023	GW06	GW06_0.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
07 Jul 2023	GW06	GW06_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
12 May 2023	TP074	TP074_0.2	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP089	TP089_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
04 May 2023	TP092	TP092_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	TP093	TP093_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
05 May 2023	TP093	TP093_1.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-
05 May 2023	TP093	TP093_2.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
04 May 2023	TP093	TP093_2.0 (QC106)	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	TP093	TP093_2.0 (QC206)	Area 1d	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
12 May 2023	TP101	TP101_0.2	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
28 Apr 2023	TP102	TP102_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
12 May 2023	TP103	TP103_0.2	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
18 May 2023	TP105	TP105_0.3	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP106	TP106_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
18 May 2023	TP107	TP107_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	TP109	TP109_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
05 May 2023	TP109	TP109_2.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
02 May 2023	TP110	TP110_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	TP111	TP111_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
05 May 2023	TP111	TP111_0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-
05 May 2023	TP111	TP111_1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
02 May 2023	TP112	TP112_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	TP113	TP113_0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
17 Jun 2023	BH11	BH11_0.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
17 Jun 2023	BH11	BH11_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
17 Jun 2023	BH11	BH11_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	BH11	BH11-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
18 Jun 2023	BH12	BH12_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
18 Jun 2023	BH12	BH12_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
18 Jun 2023	BH12	BH12_5.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
18 Jun 2023	BH13	BH13_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
18 Jun 2023	BH13	BH13_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
18 Jun 2023	BH13	BH13_2.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
18 Jun 2023	BH13	BH13_2.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
03 Aug 2023	BH13	BH13-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
20 Jun 2023	GW01	GW01_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
20 Jun 2023	GW01	GW01_0.5	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
20 Jun 2023	GW01	GW01_8.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
20 Jun 2023	GW01	GW01_8.0 (QC119)	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
20 Jun 2023	GW01	GW01_8.0 (QC219)	Area 1e	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
20 Jun 2023	GW01	GW01_9.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
03 Aug 2023	TP061	TP061-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP062	TP062_0.3	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP063	TP063_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
27 Apr 2023	TP063	TP063_0.2	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	TP063	TP063-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP064	TP064_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
02 Aug 2023	TP064	TP064-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP065	TP065_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
27 Apr 2023	TP066	TP066_1.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP067	TP067_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP068	TP068_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP069	TP069_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP070	TP070_1.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP070	TP070_1.0 (QC102)	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP070	TP070_1.0 (QC202)	Area 1e	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
02 Aug 2023	TP070	TP070-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
03 May 2023	TP071	TP071_1.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	TP072	TP072_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
26 Apr 2023	TP073	TP073_1.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
26 Apr 2023	TP073	TP073_1.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
26 Apr 2023	TP073	TP073_1.0 (QC101)	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP073	TP073_1.0 (QC201)	Area 1e	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
02 Aug 2023	TP073	TP073-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP078	TP078_0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
02 Aug 2023	TP079	TP079-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP080	TP080_2.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
02 Aug 2023	TP080	TP080-0.0	Area 1e	-	-	-	-	-	-	-	-	-	-	-	-
10 May 2023	TP081	TP081_0.2	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				Phenols											
				2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space															
NEPM 2013 Table 1A(1) HILs Res A Soil														100	3,000
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space															
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil															
27 Apr 2023	TP077	TP077_0.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
27 Apr 2023	TP077	TP077_0.5	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
21 Jun 2023	TP135	TP135_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP135	TP135_0.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP135	TP135_0.5	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
21 Jun 2023	TP136	TP136_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP136	TP136_2.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
28 Apr 2023	TP137	TP137_1.0	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
21 Jun 2023	TP138	TP138_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP138	TP138_2.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
21 Jun 2023	TP139	TP139_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP139	TP139_0.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
28 Apr 2023	TP140	TP140_0.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
21 Jun 2023	TP141	TP141_0.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP141	TP141_1.0	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
26 Apr 2023	TP141	TP141_1.0	Area 2	-	-	-	-	-	-	-	-	-	-	-	-
26 Apr 2023	TP141	TP141_1.0 (QC100)	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
26 Apr 2023	TP141	TP141_1.0 (QC200)	Area 2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
28 Apr 2023	TP169	TP169_0.5	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 May 2023	BH06	BH06_2.0	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 May 2023	BH06	BH06_4.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
27 May 2023	BH06	BH06_4.5	Area 3	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SS01	SS01	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
02 Aug 2023	SS02	SS02	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP122	TP122_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
18 May 2023	TP123	TP123_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP143	TP143_0.2	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP144	TP144_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
11 May 2023	TP145	TP145_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP146	TP146_0.2	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP146	TP146_0.2 (QC108)	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP146	TP146_0.2 (QC208)	Area 3	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
10 May 2023	TP148	TP148_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP161	TP161_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
10 May 2023	TP161	TP161_3.0	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP162	TP162_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
10 May 2023	TP162	TP162_2.0	Area 3	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	0.7	<1	<0.5	<0.5	<2	<0.5
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
25 May 2023	BH05	BH05 - 8.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
29 May 2023	BH08	BH08_4.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
29 May 2023	BH08	BH08_7.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<1	<0.5
29 May 2023	BH08	BH08_7.0	Area 4	-	-	-	-	-	-	-	<1	-	-	-	-
16 Jun 2023	BH09	BH09_5.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
16 Jun 2023	BH09	BH09_0.2	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
16 Jun 2023	BH09	BH09_0.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
16 Jun 2023	BH09	BH09_1.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
16 Jun 2023	BH09	BH09_2.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
16 Jun 2023	BH09	BH09_3.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
16 Jun 2023	BH09	BH09_4.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
16 Jun 2023	BH09	BH09_6.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_0.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_1.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_2.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
29 Jun 2023	GW03	GW03_27.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_3.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
27 Jun 2023	GW03	GW03_4.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
28 Jun 2023	GW03	GW03_8.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP114	TP114_0.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP114	TP114_1.0	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP115	TP115_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP115	TP115_1.0	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP116	TP116_0.2	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP116	TP116_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP117	TP117_0.5	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP117	TP117_1.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP118	TP118_0.2	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
28 Apr 2023	TP118	TP118_0.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
27 Apr 2023	TP119	TP119_0.2	Area 4	-	-	-	-	-	-	-	-	-	-	-	-
27 Apr 2023	TP119	TP119_0.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
18 May 2023	TP120	TP120_0.4	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
17 May 2023															



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T3. Asbestos, Cyanide, PAH and Phenols Soil Laboratory Results

				Phenols											
				2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space															
NEPM 2013 Table 1A(1) HILs Res A Soil														100	3,000
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space															
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil															
02 May 2023	TP163	TP163_0.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
23 Jun 2023	GW02	GW02_0.0	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
23 Jun 2023	GW02	GW02_0.3	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
23 Jun 2023	GW02	GW02_1.0	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
23 Jun 2023	GW02	GW02_15.0	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
23 Jun 2023	GW02	GW02_2.0	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
30 Jun 2023	GW04	GW04_0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
30 Jun 2023	GW04	GW04_0.5 (QC120)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_0.5 (QC220)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_1.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
30 Jun 2023	GW04	GW04_1.5 (QC121)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_1.5 (QC221)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
02 Jul 2023	GW04	GW04_28.5	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_3.0	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
30 Jun 2023	GW04	GW04_3.0 (QC122)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	GW04	GW04_3.0 (QC222)	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
08 May 2023	TP001	TP001-0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP060	TP060_0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP150	TP150_0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
10 May 2023	TP151	TP151_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
15 May 2023	TP155	TP155_0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
15 May 2023	TP156	TP156_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	TP157	TP157_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
10 May 2023	TP159	TP159_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	TP165	TP165_0.2	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
02 May 2023	TP165	TP165_0.5	Balance of Site	-	-	-	-	-	-	-	-	-	-	-	-
10 May 2023	TP168	TP168_0.5	Balance of Site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5

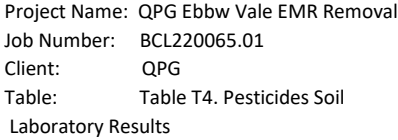
NOTE - "<0.": less than LOR, "-": not analysed

Comments

- #1 No
- #2 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to **Table 20** in body of report

[illegible]

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to **Table 20** in body of report

Date	Location Code	Field ID	Investigation Area	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
23 May 2023	BH02	BH02 - 1.4	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
24 May 2023	BH04	BH04 - 0.2	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
09 May 2023	TP033	TP033 0.2	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
03 May 2023	TP039	TP039 0.5	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
03 May 2023	TP040	TP040 1.0	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
09 May 2023	TP043	TP043 0.2	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
27 Apr 2023	TP044	TP044 0.2	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
28 Apr 2023	TP051	TP051 0.5	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
03 May 2023	TP052	TP052 0.5	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
05 May 2023	TP055	TP055 0.5	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
03 May 2023	TP057	TP057 0.5	Area 1a	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
23 May 2023	BH03	BH03 - 0.2	Area 1b	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
08 May 2023	TP005	TP005 0.5	Area 1b	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
08 May 2023	TP008	TP008 0.5	Area 1b	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
08 May 2023	TP009	TP009 0.5	Area 1b	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
15 May 2023	TP029	TP029 0.5	Area 1b	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-	-
17 May 2023	TP029	TP029 0.5 (QC209)	Area 1b	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03 May 2023	TP046	TP046 0.5	Area 1b	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
03 May 2023	TP047	TP047 1.1	Area 1b	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
05 May 2023	TP048	TP048 0.5	Area 1b	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
03 Jul 2023	GW05	GW05 0.0	Area 1c	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
03 Jul 2023	GW05	GW05 0.5	Area 1c	<0.05	<0.05	<0.05									

NOTE - "<0.": less than LOR, "-": not analysed

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Refer to **Table 20** in body of report

[illegible]

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to **Table 20** in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T4. Pesticides Soil
Laboratory Results

Pesticides			Herbicides
Chlorobenzilate	Carbazole	Pirimphos-ethyl	Pronamide
mg/kg	mg/kg	mg/kg	mg/kg
0.5	0.5	0.05	0.5

EQL
NEPM 2013 Table 1A(1) HILs Res A Soil
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space

Date	Location Code	Field ID	Investigation Area				
23 May 2023	BH02	BH02 - 1.4	Area 1a	<0.5	<0.5	<0.05	<0.5
24 May 2023	BH04	BH04 - 0.2	Area 1a	<0.5	<0.5	<0.05	<0.5
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	<0.5	<0.5	<0.05	<0.5
09 May 2023	TP033	TP033 0.2	Area 1a	<0.5	<0.5	<0.05	<0.5
03 May 2023	TP039	TP039 0.5	Area 1a	<0.5	<0.5	<0.05	<0.5
03 May 2023	TP040	TP040 1.0	Area 1a	<0.5	<0.5	<0.05	<0.5
09 May 2023	TP043	TP043 0.2	Area 1a	<0.5	<0.5	<0.05	<0.5
27 Apr 2023	TP044	TP044 0.2	Area 1a	<0.5	<0.5	<0.05	<0.5
28 Apr 2023	TP051	TP051 0.5	Area 1a	<0.5	<0.5	<0.05	<0.5
03 May 2023	TP052	TP052 0.5	Area 1a	<0.5	<0.5	<0.05	<0.5
05 May 2023	TP055	TP055 0.5	Area 1a	<0.5	<0.5	<0.05	<0.5
03 May 2023	TP057	TP057 0.5	Area 1a	<0.5	<0.5	<0.05	<0.5
23 May 2023	BH03	BH03 - 0.2	Area 1b	<0.5	<0.5	<0.05	<0.5
08 May 2023	TP005	TP005 0.5	Area 1b	<0.5	<0.5	<0.05	<0.5
08 May 2023	TP008	TP008 0.5	Area 1b	<0.5	<0.5	<0.05	<0.5
08 May 2023	TP009	TP009 0.5	Area 1b	<0.5	<0.5	<0.05	<0.5
15 May 2023	TP029	TP029 0.5	Area 1b	<0.5	<0.5	<0.5	<0.5
17 May 2023	TP029	TP029 0.5 (QC209)	Area 1b	-	-	-	<0.5
03 May 2023	TP046	TP046 0.5	Area 1b	<0.5	<0.5	<0.05	<0.5
03 May 2023	TP047	TP047 1.1	Area 1b	<0.5	<0.5	<0.05	<0.5
05 May 2023	TP048	TP048 0.5	Area 1b	<0.5	<0.5	<0.05	<0.5
03 Jul 2023	GW05	GW05 0.0	Area 1c	<0.5	<0.5	<0.05	<0.5
03 Jul 2023	GW05	GW05 0.5	Area 1c	<0.5	<0.5	<0.05	<0.5
03 Jul 2023	GW05	GW05 1.0	Area 1c	<0.5	<0.5	<0.05	<0.5
03 Jul 2023	GW05	GW05 1.3	Area 1c	<0.5	<0.5	<0.05	<0.5
03 Jul 2023	GW05	GW05 8.5	Area 1c	<0.5	<0.5	<0.05	<0.5
04 May 2023	TP018	TP018 1.0	Area 1c	<0.5	<0.5	<0.05	<0.5
04 May 2023	TP095	TP095 0.5	Area 1c	<0.5	<0.5	<0.05	<0.5
04 May 2023	TP096	TP096 2.0	Area 1c	<0.5	<0.5	<0.05	<0.5
04 May 2023	TP096	TP096 2.0 (QC105)	Area 1c	<0.5	<0.5	<0.05	<0.5
05 May 2023	TP097	TP097 2.0	Area 1c	<0.5	<0.5	<0.05	<0.5
28 May 2023	BH07	BH07 10.0	Area 1d	<0.5	<0.5	<0.05	<0.5
16 Jun 2023	BH10	BH10 0.0	Area 1d	-	-	<0.05	-
16 Jun 2023	BH10	BH10 8.0	Area 1d	-	-	<0.05	-
06 Jul 2023	BH15	BH15 0.5	Area 1d	<0.5	<0.5	<0.05	<0.5
06 Jul 2023	BH15	BH15 1.0	Area 1d	<0.5	<0.5	<0.05	<0.5
07 Jul 2023	GW06	GW06 0.0	Area 1d	<0.5	<0.5	<0.05	<0.5
05 May 2023	TP093	TP093 1.0	Area 1d	<0.5	<0.5	<0.05	<0.5
05 May 2023	TP093	TP093 2.0 (QC206)	Area 1d	-	-	-	<0.5
05 May 2023	TP109	TP109 0.5	Area 1d	<0.5	<0.5	<0.05	<0.5
05 May 2023	TP111	TP111 0.5	Area 1d	<0.5	<0.5	<0.05	<0.5
05 May 2023	TP113	TP113 0.5	Area 1d	<0.5	<0.5	<0.05	<0.5
17 Jun 2023	BH11	BH11 0.0	Area 1e	<0.5	<0.5	<0.05	<0.5
17 Jun 2023	BH11	BH11 0.5	Area 1e	<0.5	<0.5	<0.05	<0.5
18 Jun 2023	BH12	BH12 0.5	Area 1e	<0.5	<0.5	<0.05	<0.5
18 Jun 2023	BH12	BH12 5.0	Area 1e	<0.5	<0.5	<0.05	<0.5
18 Jun 2023	BH13	BH13 0.5	Area 1e	<0.5	<0.5	<0.05	<0.5
18 Jun 2023	BH13	BH13 2.0	Area 1e	<0.5	<0.5	<0.05	<0.5
20 Jun 2023	GW01	GW01 0.5	Area 1e	<0.5	<0.5	<0.05	<0.5
20 Jun 2023	GW01	GW01 8.0	Area 1e	<0.5	<0.5	<0.05	<0.5
20 Jun 2023	GW01	GW01 8.0 (QC119)	Area 1e	<0.5	<0.5	<0.05	<0.5
20 Jun 2023	GW01	GW01 8.0 (QC219)	Area 1e	-	-	-	<0.5
27 Apr 2023	TP063	TP063 0.2	Area 1e	<0.5	<0.5	<0.05	<0.5
27 Apr 2023	TP065	TP065 0.2	Area 1e	<0.5	<0.5	<0.05	<0.5
26 Apr 2023	TP073	TP073 1.0	Area 1e	<0.5	<0.5	<0.05	<0.5
26 Apr 2023	TP073	TP073 1.0 (QC101)	Area 1e	<0.5	<0.5	<0.05	<0.5
26 Apr 2023	TP073	TP073 1.0 (QC201)	Area 1e	-	-	-	<0.5
28 Apr 2023	TP078	TP078 0.5	Area 1e	<0.5	<0.5	<0.05	<0.5
03 May 2023	TP084	TP084 1.5	Area 1e	<0.5	<0.5	<0.05	<0.5
27 Apr 2023	TP075	TP075 0.5	Area 2	<0.5	<0.5	<0.05	<0.5
27 Apr 2023	TP077	TP077 0.5	Area 2	<0.5	<0.5	<0.05	<0.5
28 Apr 2023	TP135	TP135 0.5	Area 2	<0.5	<0.5	<0.05	<0.5
26 Apr 2023	TP141	TP141 1.0	Area 2	<0.5	<0.5	<0.05	<0.5
26 Apr 2023	TP141	TP141 1.0 (QC100)	Area 2	<0.5	<0.5	<0.05	<0.5
26 Apr 2023	TP141	TP141 1.0 (QC200)	Area 2	-	-	-	<0.5
27 May 2023	BH06	BH06 4.5	Area 3	<0.5	<0.5	<0.05	<0.5
02 Aug 2023	SS01	SS01	Area 3	-	-	<0.05	-
02 Aug 2023	SS02	SS02	Area 3	-	-	<0.05	-
18 May 2023	TP123	TP123 0.5	Area 3	-	-	<0.05	-
10 May 2023	TP161	TP161 0.5	Area 3	<0.5	<0.5	<0.05	<0.5
10 May 2023	TP162	TP162 0.5	Area 3	<0.5	<0.5	<0.05	<0.5
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.5	<0.5	<0.05	<0.5
25 May 2023	BH05	BH05 - 8.0	Area 4	<0.5	<0.5	<0.5	<0.5
29 May 2023	BH08	BH08 7.0	Area 4	<0.5	<0.5	<0.5	<0.5
16 Jun 2023	BH09	BH09 0.2	Area 4	<0.5	<0.5	<0.05	<0.5
16 Jun 2023	BH09	BH09 0.5	Area 4	<0.5	<0.5	<0.5	<0.5
16 Jun 2023	BH09	BH09 1.0	Area 4	<0.5	<0.5	<0.5	<0.5
16 Jun 2023	BH09	BH09 2.0	Area 4	<0.5	<0.5	<0.5	<0.5
16 Jun 2023	BH09	BH09 3.0	Area 4	<0.5	<0.5	<0.5	<0.5
27 Jun 2023	GW03	GW03 0.5	Area 4	-	-	<0.05	-
28 Apr 2023	TP114	TP114 0.5	Area 4	<0.5	<0.5	<0.05	<0.5
28 Apr 2023	TP115	TP115 1.0	Area 4	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP116	TP116 0.2	Area 4	<0.5	<0.5	<0.05	<0.5
28 Apr 2023	TP117	TP117 1.5	Area 4	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	TP118	TP118 0.5	Area 4	<0.5	<0.5	<0.5	<0.5
27 Apr 2023	TP119	TP119 0.5	Area 4	<0.5	<0.5	<0.5	<0.5
18 May 2023	TP120	TP120 0.4	Area 4	<0.5	<0.5	<0.05	<0.5
02 May 2023	TP125	TP125 0.5	Area 4	<0.5	<0.5	<0.05	<0.5
02 May 2023	TP127	TP127 0.5	Area 4	-	-	<0.05	-
17 May 2023	TP130	TP130 0.5	Area 4	<0.5	<0.5	<0.05	<0.5
17 May 2023	TP130	TP130 1.5	Area 4	-	-	<0.05	-
02 May 2023	TP131	TP131 0.5	Area 4	-	-	<0.05	-
02 May 2023	TP132	TP132 1.0	Area 4	-	-	<0.05	-
02 May 2023	TP133	TP133 0.5	Area 4	-	-	<0.05	-
02 May 2023	TP134	TP134 2.0	Area 4	-	-	<0.05	-
28 Apr 2023	TP149	TP149 0.5	Area 4	<0.5	<0.5	<0.05	<0.5
28 Apr 2023	TP149	TP149 0.5 (QC103)	Area 4	<0.5	<0.5	<0.05	<0.5
28 Apr 2023	TP149	TP149 0.5 (QC203)	Area 4	-	-	-	<0.5
23 Jun 2023	GW02	GW02 0.0	Balance of Site	<0.5	<0.5	<0.05	<0.5
23 Jun 2023	GW02	GW02 0.3	Balance of Site	<0.5	<0.5	<0.05	<0.5
23 Jun 2023	GW02	GW02 1.0	Balance of Site	<0.5	<0.5	<0.05	<0.5
23 Jun 2023	GW02	GW02 15.0	Balance of Site	<0.5	<0.5	<0.5	<0.5
23 Jun 2023	GW02	GW02 2.0	Balance of Site	<0.5	<0.5	<0.5	<0.5
30 Jun 2023	GW04	GW04 0.5	Balance of Site	<0.5	<0.5	<0.05	<0.5
30 Jun 2023	GW04	GW04 1.5	Balance of Site	<0.5	<0.5	<0.05	<0.5
30 Jun 2023	GW04	GW04 3.0	Balance of Site	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP150	TP150 0.5	Balance of Site	<0.5	<0.5	<0.05	<0.5
10 May 2023	TP151	TP151 0.2	Balance of Site	<0.5	<0.5	<0.05	<0.5
10 May 2023	TP157	TP157 0.2	Balance of Site	<0.5	<0.5	<0.05	<0.5
10 May 2023	TP159	TP159 0.2	Balance of Site	<0.5	<0.5	<0.05	<0.5
28 Apr 2023	TP165	TP165_0.2	Balance of Site	<0.5	<0.5	<0.05	<0.5

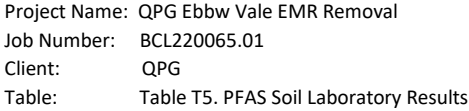
NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to **Table 20** in body of report



Date	Location Code	Field ID	Investigation Area								
23 May 2023	BH02	BH02 - 1.4	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
24 May 2023	BH04	BH04 - 0.2	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
09 May 2023	TP033	TP033 0.2	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0005
03 May 2023	TP039	TP039 0.5	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
03 May 2023	TP040	TP040 1.0	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
09 May 2023	TP041	TP041 0.5	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
09 May 2023	TP043	TP043 0.2	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0003
27 Apr 2023	TP044	TP044 0.2	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
03 May 2023	TP052	TP052 0.5	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP054	TP054 1.0	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
05 May 2023	TP055	TP055 0.5	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
03 May 2023	TP057	TP057 0.5	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP059	TP059 0.2	Area 1a		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
20 May 2023	BH01	BH01 0.2	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
20 May 2023	BH01	BH01 2.6	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
23 May 2023	BH03	BH03 - 0.2	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
08 May 2023	TP005	TP005 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
08 May 2023	TP006	TP006 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
08 May 2023	TP007	TP007 1.0	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
08 May 2023	TP008	TP008 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
08 May 2023	TP009	TP009 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
15 May 2023	TP029	TP029 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
17 May 2023	TP029	TP029 0.5 (QC209)	Area 1b		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
03 May 2023	TP046	TP046 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
03 May 2023	TP047	TP047 1.1	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
05 May 2023	TP048	TP048 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
09 May 2023	TP050	TP050 0.5	Area 1b		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
03 Jul 2023	GW05	GW05 0.5	Area 1c								



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T5. PFAS Soil Laboratory Results

				Perfluoroalkyl Sulfonic Acids						
				Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Sum of PFHxS and PFOS
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)										0.01
PFAS NEMP 2020 Ecological direct exposure								1		
PFAS NEMP 2020 Ecological indirect exposure								0.01		
10 May 2023	TP148	TP148 0.5	Area 3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP161	TP161 0.5	Area 3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP161	TP161 3.0	Area 3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP162	TP162 0.5	Area 3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP162	TP162 2.0	Area 3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
29 May 2023	BH08	BH08 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003 ²¹	<0.0002	<0.0002
29 May 2023	BH08	BH08 4.0	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
29 May 2023	BH08	BH08 7.0	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
16 Jun 2023	BH09	BH09 0.2	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
16 Jun 2023	BH09	BH09 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
16 Jun 2023	BH09	BH09 1.0	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	0.0006
27 Jun 2023	GW03	GW03 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
29 Jun 2023	GW03	GW03 27.0	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP114	TP114 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP115	TP115 1.0	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP116	TP116 0.2	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP117	TP117 1.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP118	TP118 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
27 Apr 2023	TP119	TP119 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
02 May 2023	TP125	TP125 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
02 May 2023	TP127	TP127 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
17 May 2023	TP130	TP130 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004 ²¹	<0.0002	<0.0002
17 May 2023	TP130	TP130 1.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
02 May 2023	TP131	TP131 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
02 May 2023	TP132	TP132 1.0	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
02 May 2023	TP133	TP133 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
02 May 2023	TP134	TP134 2.0	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP149	TP149 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP149	TP149 0.5 (QC103)	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP149	TP149 0.5 (QC203)	Area 4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
02 May 2023	TP163	TP163 0.5	Area 4	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0002
23 Jun 2023	GW02	GW02 0.0	Balance of Site	<0.0005 ²¹	<0.0005 ²¹	<0.0005 ²¹	<0.0005 ²¹	<0.0006 ²¹	<0.0005 ²¹	<0.0005 ²¹
23 Jun 2023	GW02	GW02 1.0	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
27 Jun 2023	GW02	GW02 35.0	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 0.5	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 0.5 (QC120)	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 0.5 (QC220)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30 Jun 2023	GW04	GW04 1.5	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 1.5 (QC121)	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 1.5 (QC221)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
02 Jul 2023	GW04	GW04 28.5	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 3.0	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 3.0 (QC122)	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 3.0 (QC222)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10 May 2023	TP150	TP150 0.5	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP151	TP151 0.2	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP157	TP157 0.2	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0005
10 May 2023	TP159	TP159 0.2	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
28 Apr 2023	TP165	TP165 0.2	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
10 May 2023	TP168	TP168 0.5	Balance of Site	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to Table 20 in body of report

[illegible]



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T5. PFAS Soil Laboratory Results

				Perfluoroalkyl Carboxylic Acid										
				Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluorotetradecanoic acid (PFTeDA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)								0.1						
PFAS NEMP 2020 Ecological direct exposure								10						
PFAS NEMP 2020 Ecological indirect exposure														
10 May 2023	TP148	TP148 0.5	Area 3	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP161	TP161 0.5	Area 3	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP161	TP161 3.0	Area 3	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP162	TP162 0.5	Area 3	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP162	TP162 2.0	Area 3	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
29 May 2023	BH08	BH08 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
29 May 2023	BH08	BH08 4.0	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
29 May 2023	BH08	BH08 7.0	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
16 Jun 2023	BH09	BH09 0.2	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
16 Jun 2023	BH09	BH09 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
16 Jun 2023	BH09	BH09 1.0	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
27 Jun 2023	GW03	GW03 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
29 Jun 2023	GW03	GW03 27.0	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP114	TP114 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP115	TP115 1.0	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP116	TP116 0.2	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP117	TP117 1.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP118	TP118 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
27 Apr 2023	TP119	TP119 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
02 May 2023	TP125	TP125 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
02 May 2023	TP127	TP127 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
17 May 2023	TP130	TP130 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
17 May 2023	TP130	TP130 1.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
02 May 2023	TP131	TP131 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
02 May 2023	TP132	TP132 1.0	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
02 May 2023	TP133	TP133 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
02 May 2023	TP134	TP134 2.0	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP149	TP149 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP149	TP149 0.5 (QC103)	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP149	TP149 0.5 (QC203)	Area 4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
02 May 2023	TP163	TP163 0.5	Area 4	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
23 Jun 2023	GW02	GW02 0.0	Balance of Site	<0.002 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0005 ^{PS}	<0.0012 ^{PS}
23 Jun 2023	GW02	GW02 1.0	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
27 Jun 2023	GW02	GW02 35.0	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 0.5	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 0.5 (QC120)	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 0.5 (QC220)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30 Jun 2023	GW04	GW04 1.5	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 1.5 (QC121)	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 1.5 (QC221)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
02 Jul 2023	GW04	GW04 28.5	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 3.0	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 3.0 (QC122)	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
30 Jun 2023	GW04	GW04 3.0 (QC222)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10 May 2023	TP150	TP150 0.5	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP151	TP151 0.2	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP157	TP157 0.2	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP159	TP159 0.2	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
28 Apr 2023	TP165	TP165 0.2	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
10 May 2023	TP168	TP168 0.5	Balance of Site	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T5. PFAS Soil Laboratory Results

				Perfluoroalkyl Sulfonamides						
				Perfluorooctane sulfonamide (PFOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-Ethylperfluorooctanesulfonamidoethanol (NEFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEFOSAA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)										
PFAS NEMP 2020 Ecological direct exposure										
PFAS NEMP 2020 Ecological indirect exposure										
10 May 2023	TP148	TP148 0.5	Area 3	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP161	TP161 0.5	Area 3	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP161	TP161 3.0	Area 3	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP162	TP162 0.5	Area 3	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP162	TP162 2.0	Area 3	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
29 May 2023	BH08	BH08 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
29 May 2023	BH08	BH08 4.0	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
29 May 2023	BH08	BH08 7.0	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
16 Jun 2023	BH09	BH09 0.2	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
16 Jun 2023	BH09	BH09 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
16 Jun 2023	BH09	BH09 1.0	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
27 Jun 2023	GW03	GW03 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
29 Jun 2023	GW03	GW03 27.0	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP114	TP114 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP115	TP115 1.0	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP116	TP116 0.2	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP117	TP117 1.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP118	TP118 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
27 Apr 2023	TP119	TP119 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
02 May 2023	TP125	TP125 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
02 May 2023	TP127	TP127 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
17 May 2023	TP130	TP130 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
17 May 2023	TP130	TP130 1.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
02 May 2023	TP131	TP131 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
02 May 2023	TP132	TP132 1.0	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
02 May 2023	TP133	TP133 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
02 May 2023	TP134	TP134 2.0	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP149	TP149 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP149	TP149 0.5 (QC103)	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP149	TP149 0.5 (QC203)	Area 4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01
02 May 2023	TP163	TP163 0.5	Area 4	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
23 Jun 2023	GW02	GW02 0.0	Balance of Site	<0.0005 ^{PT}	<0.0012 ^{PT}	<0.0012 ^{PT}	<0.0012 ^{PT}	<0.0012 ^{PT}	<0.0005 ^{PT}	<0.0005 ^{PT}
23 Jun 2023	GW02	GW02 1.0	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
27 Jun 2023	GW02	GW02 35.0	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 0.5	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 0.5 (QC120)	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 0.5 (QC220)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01
30 Jun 2023	GW04	GW04 1.5	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 1.5 (QC121)	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 1.5 (QC221)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01
02 Jul 2023	GW04	GW04 28.5	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 3.0	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 3.0 (QC122)	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
30 Jun 2023	GW04	GW04 3.0 (QC222)	Balance of Site	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01
10 May 2023	TP150	TP150 0.5	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP151	TP151 0.2	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP157	TP157 0.2	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP159	TP159 0.2	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
28 Apr 2023	TP165	TP165 0.2	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
10 May 2023	TP168	TP168 0.5	Balance of Site	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T5. PFAS Soil Laboratory Results

	Fluorotelomer Sulfonic Acids				PFAS Totals	
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg
EQL	0.0005	0.0005	0.0005	0.0005	0.2	0.0002
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)						
PFAS NEMP 2020 Ecological direct exposure						
PFAS NEMP 2020 Ecological indirect exposure						

Date	Location Code	Field ID	Investigation Area						
23 May 2023	BH02	BH02 - 1.4	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
24 May 2023	BH04	BH04 - 0.2	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
24 May 2023	BH04	BH04 0.2 (QC113)	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
09 May 2023	TP033	TP033 0.2	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	0.5	0.0005
03 May 2023	TP039	TP039 0.5	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP040	TP040 1.0	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
09 May 2023	TP041	TP041 0.5	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
09 May 2023	TP043	TP043 0.2	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	0.3	0.0003
27 Apr 2023	TP044	TP044 0.2	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP052	TP052 0.5	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP054	TP054 1.0	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
05 May 2023	TP055	TP055 0.5	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP057	TP057 0.5	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP059	TP059 0.2	Area 1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
20 May 2023	BH01	BH01 0.2	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
20 May 2023	BH01	BH01 2.6	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
23 May 2023	BH03	BH03 - 0.2	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
08 May 2023	TP005	TP005 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
08 May 2023	TP006	TP006 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
08 May 2023	TP007	TP007 1.0	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
08 May 2023	TP008	TP008 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
08 May 2023	TP009	TP009 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
15 May 2023	TP029	TP029 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
17 May 2023	TP029	TP029 0.5 (QC209)	Area 1b	<0.005	<0.01	<0.005	<0.005	<10	<0.05
03 May 2023	TP046	TP046 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP047	TP047 1.1	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
05 May 2023	TP048	TP048 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
09 May 2023	TP050	TP050 0.5	Area 1b	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 Jul 2023	GW05	GW05 0.5	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 Jul 2023	GW05	GW05 0.5 (QC123)	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 Jul 2023	GW05	GW05 0.5 (QC223)	Area 1c	<0.005	<0.01	<0.005	<0.005	<10	<0.05
03 Jul 2023	GW05	GW05 8.5 (QC124)	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 Jul 2023	GW05	GW05 8.5 (QC224)	Area 1c	<0.005	<0.01	<0.005	<0.005	<10	<0.05
04 May 2023	TP018	TP018 1.0	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
09 May 2023	TP021	TP021 0.2	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
09 May 2023	TP022	TP022 0.5	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
09 May 2023	TP023	TP023 0.5	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP094	TP094 0.5	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
04 May 2023	TP095	TP095 0.5	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
04 May 2023	TP096	TP096 2.0	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
04 May 2023	TP096	TP096 2.0 (QC105)	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
05 May 2023	TP097	TP097 2.0	Area 1c	<0.0005	<0.0005	<0.0005	<0.0005	2.0	0.0020
28 May 2023	BH07	BH07 10.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
16 Jun 2023	BH10	BH10 0.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
16 Jun 2023	BH10	BH10 0.5	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
16 Jun 2023	BH10	BH10 1.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
16 Jun 2023	BH10	BH10 8.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
06 Jul 2023	BH15	BH15 28.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
06 Jul 2023	BH15	BH15 28.0 (QC125)	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
06 Jul 2023	BH15	BH15 28.0 (QC225)	Area 1d	<0.005	<0.01	<0.005	<0.005	<10	<0.05
06 Jul 2023	BH15	BH15 32.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
06 Jul 2023	BH15	BH15 32.0 (QC126)	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
06 Jul 2023	BH15	BH15 32.0 (QC226)	Area 1d	<0.005	<0.01	<0.005	<0.005	<10	<0.05
07 Jul 2023	GW06	GW06 0.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
06 Jul 2023	GW06	GW06 0.0 (QC128)	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
07 Jul 2023	GW06	GW06 0.0 (QC228)	Area 1d	<0.005	<0.01	<0.005	<0.005	<10	<0.05
07 Jul 2023	GW06	GW06 1.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
07 Jul 2023	GW06	GW06 1.0 (QC127)	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
07 Jul 2023	GW06	GW06 1.0 (QC227)	Area 1d	<0.005	<0.01	<0.005	<0.005	<10	<0.05
05 May 2023	TP093	TP093 1.0	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
05 May 2023	TP093	TP093 2.0 (QC206)	Area 1d	<0.005	<0.01	<0.005	<0.005	<10	<0.05
12 May 2023	TP101	TP101 0.2	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP102	TP102 0.5	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
12 May 2023	TP103	TP103 0.2	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
05 May 2023	TP109	TP109 0.5	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
05 May 2023	TP111	TP111 0.5	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
05 May 2023	TP113	TP113 0.5	Area 1d	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
17 Jun 2023	BH11	BH11 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
18 Jun 2023	BH12	BH12 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
18 Jun 2023	BH13	BH13 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
18 Jun 2023	BH13	BH13 2.0	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
20 Jun 2023	GW01	GW01 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
20 Jun 2023	GW01	GW01 8.0	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
20 Jun 2023	GW01	GW01 8.0 (QC119)	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
20 Jun 2023	GW01	GW01 8.0 (QC219)	Area 1e	<0.005	<0.01	<0.005	<0.005	<10	<0.05
20 Jun 2023	GW01	GW01 9.0	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
27 Apr 2023	TP063	TP063 0.2	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
27 Apr 2023	TP065	TP065 0.2	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	0.2	0.0002
27 Apr 2023	TP067	TP067 0.2	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP071	TP071 1.0	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
26 Apr 2023	TP073	TP073 1.0	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
26 Apr 2023	TP073	TP073 1.0 (QC101)	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
26 Apr 2023	TP073	TP073 1.0 (QC201)	Area 1e	<0.005	<0.01	<0.005	<0.005	<10	<0.05
28 Apr 2023	TP078	TP078 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP082	TP082 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP083	TP083 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP084	TP084 1.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP085	TP085 0.8	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
03 May 2023	TP086	TP086 0.5	Area 1e	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
27 Apr 2023	TP075	TP075 0.5	Area 2	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
27 Apr 2023	TP076	TP076 0.1	Area 2	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
27 Apr 2023	TP077	TP077 0.5	Area 2	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP135	TP135 0.5	Area 2	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP136	TP136 2.5	Area 2	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP137	TP137 1.0	Area 2	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP138	TP138 2.5	Area 2	<0.					



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T5. PFAS Soil Laboratory Results

				Fluorotelomer Sulfonic Acids				PFAS Totals	
				4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS (WA DER List)	Sum of PFAS
				mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg
EQL				0.0005	0.0005	0.0005	0.0005	0.2	0.0002
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)									
PFAS NEMP 2020 Ecological direct exposure									
PFAS NEMP 2020 Ecological indirect exposure									
10 May 2023	TP148	TP148 0.5	Area 3	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP161	TP161 0.5	Area 3	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP161	TP161 3.0	Area 3	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP162	TP162 0.5	Area 3	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP162	TP162 2.0	Area 3	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
29 May 2023	BH08	BH08 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
29 May 2023	BH08	BH08 4.0	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
29 May 2023	BH08	BH08 7.0	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
16 Jun 2023	BH09	BH09 0.2	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
16 Jun 2023	BH09	BH09 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
16 Jun 2023	BH09	BH09 1.0	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	0.6	0.0006
27 Jun 2023	GW03	GW03 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
29 Jun 2023	GW03	GW03 27.0	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP114	TP114 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP115	TP115 1.0	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP116	TP116 0.2	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP117	TP117 1.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP118	TP118 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
27 Apr 2023	TP119	TP119 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
02 May 2023	TP125	TP125 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
02 May 2023	TP127	TP127 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
17 May 2023	TP130	TP130 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
17 May 2023	TP130	TP130 1.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
02 May 2023	TP131	TP131 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
02 May 2023	TP132	TP132 1.0	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
02 May 2023	TP133	TP133 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
02 May 2023	TP134	TP134 2.0	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP149	TP149 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP149	TP149 0.5 (QC103)	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP149	TP149 0.5 (QC203)	Area 4	<0.005	<0.01	<0.005	<0.005	<10	<0.05
02 May 2023	TP163	TP163 0.5	Area 4	<0.0005	<0.0005	<0.0005	<0.0005	0.2	0.0002
23 Jun 2023	GW02	GW02 0.0	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.5	<0.0005
23 Jun 2023	GW02	GW02 1.0	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
27 Jun 2023	GW02	GW02 35.0	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
30 Jun 2023	GW04	GW04 0.5	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	0.0003
30 Jun 2023	GW04	GW04 0.5 (QC120)	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
30 Jun 2023	GW04	GW04 0.5 (QC220)	Balance of Site	<0.005	<0.01	<0.005	<0.005	<10	<0.05
30 Jun 2023	GW04	GW04 1.5	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
30 Jun 2023	GW04	GW04 1.5 (QC121)	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
30 Jun 2023	GW04	GW04 1.5 (QC221)	Balance of Site	<0.005	<0.01	<0.005	<0.005	<10	<0.05
02 Jul 2023	GW04	GW04 28.5	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
30 Jun 2023	GW04	GW04 3.0	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
30 Jun 2023	GW04	GW04 3.0 (QC122)	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
30 Jun 2023	GW04	GW04 3.0 (QC222)	Balance of Site	<0.005	<0.01	<0.005	<0.005	<10	<0.05
10 May 2023	TP150	TP150 0.5	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP151	TP151 0.2	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP157	TP157 0.2	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	0.5	0.0005
10 May 2023	TP159	TP159 0.2	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
28 Apr 2023	TP165	TP165 0.2	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002
10 May 2023	TP168	TP168 0.5	Balance of Site	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	<0.0002

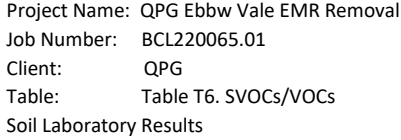
NOTE - "<0.": less than LOR, "-": not analysed

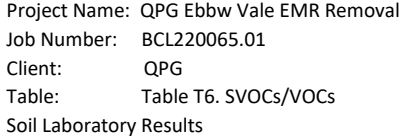
Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer to Table 20 in body of report

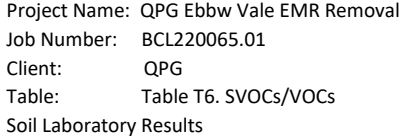
[illegible]

[illegible]



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T6. SVOCs/VOCs
Soil Laboratory Results

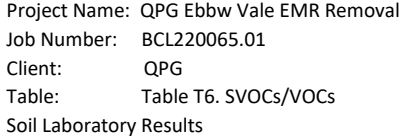
				Amino Aliphatics				Amino		Anilines						MAH						Halogenated Hydrocarbons																					
				N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylamine	1-naphthylamine	N-Nitrosodiphenyl & Diphenylamine	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1,2-dibromomethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane		
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	1	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5	0.5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
USEPA RSLs Resident Soil THQ=0.1				0.00081	0.099	0.078	0.02		1		63		2.7	25	60	44	30	27	190	390	380		780	600	780	0.036	0.68	8.7		2,300	2	810	0.6	0.15	3.6	23			0.0051	0.0053	0.46	1.6	160
NEPM 2013 Table 1A(1) HILs Res A Soil																																											
28 Apr 2023	TP139	TP139_0.5	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28 Apr 2023	TP140	TP140_0.5	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26 Apr 2023	TP141	TP141_1.0	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	TP141	TP141_1.0 (QC100)	Area 2	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	TP141	TP141_1.0 (QC200)	Area 2	-	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	
28 Apr 2023	TP169	TP169_0.5	Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27 May 2023	BH06	BH06_4.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
10 May 2023	TP122	TP122_0.5	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
18 May 2023	TP123	TP123_0.5	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP143	TP143_0.2	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP144	TP144_0.5	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
11 May 2023	TP145	TP145_0.5	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP146	TP146_0.2	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP146	TP146_0.2 (QC108)	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP146	TP146_0.2 (QC208)	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP148	TP148_0.5	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP161	TP161_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10 May 2023	TP161	TP161_3.0	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10 May 2023	TP162	TP162_0.5	Area 3	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
10 May 2023	TP162	TP162_2.0	Area 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
25 May 2023	BH05	BH05 - 10.5	Area 4	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
25 May 2023	BH05	BH05 - 8.0	Area 4	<0.5	<0.5	<0.																																					

[illegible]



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T6. SVOCs/VOCs
Soil Laboratory Results

				Chlorinated Hydrocarbons															Halogenated Benzenes												VOCs						
				2,2-dichloropropane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane	
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	5	0.5	5	0.5	0.5	0.5	0.5	2.5	0.5	0.5	0.5	0.5	0.5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.5	0.5	0.5	0.5	
USEPA RSLs Resident Soil THQ=0.1					0.29	19	0.65	8.3	540	0.32	11	6.3		2.4	1.2	0.18	1.8	0.41	8.1	7		0.059	6.3	5.8	180		2.6	160	160	29	28	0.078	6.3	0.0074	0.0074	7.7	
NEPM 2013 Table 1A(1) HILs Res A Soil																																				10	
16 Jun 2023	BH10	BH10 7.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16 Jun 2023	BH10	BH10 8.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06 Jul 2023	BH15	BH15 0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
06 Jul 2023	BH15	BH15 1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
06 Jul 2023	BH15	BH15 28.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06 Jul 2023	BH15	BH15 28.0 (QC125)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06 Jul 2023	BH15	BH15 28.0 (QC225)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06 Jul 2023	BH15	BH15 32.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06 Jul 2023	BH15	BH15 32.0 (QC126)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06 Jul 2023	BH15	BH15 32.0 (QC226)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07 Jul 2023	GW06	GW06 0.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5
06 Jul 2023	GW06	GW06 0.0 (QC128)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07 Jul 2023	GW06	GW06 0.0 (QC228)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07 Jul 2023	GW06	GW06 0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07 Jul 2023	GW06	GW06 1.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07 Jul 2023	GW06	GW06 1.0 (QC127)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07 Jul 2023	GW06	GW06 1.0 (QC227)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12 May 2023	TP074	TP074 0.2	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10 May 2023	TP089	TP089 0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
04 May 2023	TP092	TP092 0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
05 May 2023	TP093	TP093 1.0	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5
05 May 2023	TP093	TP093 2.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04 May 2023	TP093	TP093 2.0 (QC106)	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05 May 2023	TP093	TP093 2.0 (QC206)	Area 1d	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.05	<0.5	-	-	-	
12 May 2023	TP101	TP101 0.2	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28 Apr 2023	TP102	TP102 0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18 May 2023	TP107	TP107 0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
05 May 2023	TP109	TP109 0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
05 May 2023	TP109	TP109 2.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
02 May 2023	TP110	TP110 1.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
05 May 2023	TP111	TP111 0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
05 May 2023	TP111	TP111 1.0	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
02 May 2023	TP112	TP112 0.5	Area 1d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
05 May 2023	TP113	TP113 0.5	Area 1d	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	
17 Jun 2023	BH11	BH11 0.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	
17 Jun 2023	BH11	BH11 0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
18 Jun 2023	BH12	BH12 0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
18 Jun 2023	BH12	BH12 5.0	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
18 Jun 2023	BH13	BH13 0.5	Area 1e	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	
18 Jun 2023	BH13	BH13																																			



NOTE - "<0.": less than LOR, "-": not analysed

#1 Reported Analyte LOR is higher than Requested Analyte LOR

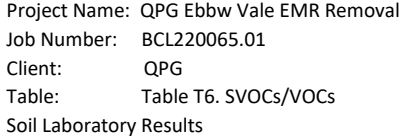
Refer to **Table 20** in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T6. SVOCs/VOCs
Soil Laboratory Results

EQL	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.1	0.5	1	1	0.5	0.5	0.5	0.5	0.5	5	0.5	0.5	0.5	0.5	5	5	5	0.5	0.5	5		
USEPA RSLs Resident Soil THQ=0.1	0.14	1.2	0.12				5.6	19	0.23	7.8			0.081	0.058	0.26	250	0.23	220	1.7	0.36	5.1		0.026	2.7	780	39	290	5,100		630	63	2,700	20	3,300	77	570	91
NEPM 2013 Table 1A(1) HILs Res A Soil																1																					

	Location Code	Field ID	Investigation Area																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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[illegible]

NOTE - "<0.": less than LOR, "-": not analysed

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Refer to **Table 20** in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Field Parameters					Amino Aliphatics				Physico-Chemical										
	pH	Electrical Conductivity	Oxidation Reduction Potential	Dissolved Oxygen	Temperature	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	TOC	TDS	Chloride	Sulfate as SO4 - Turbidimetric (filtered)	Sulphate	Alkalinity (Hydroxide) as CaCO3	Carbonate as CaCO3	Bicarbonate as CaCO3	Alkalinity (total) as CaCO3	Calcium	Calcium (filtered)
EQL	-	µS/cm	mV	%	°C	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bremer River Drinking Water WQO	6.5 - 8.5	450	-	>85		2	2	2	2	1	10	1	1	5	1	1	1	1	0.5	0.5
ADWG 2018 Health criteria x 10											600			250						
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water														500						
NEPM 2013 Table 1C GILs, Fresh Waters																				
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	6.60	1,740	23.0	0.00	23.1	<2	<2	<2	<2	10	1,220	403	53	-	<1	<1	543	543	-	63
01 Aug 2023	GW01 (QC100)	Water	-	-	-	-	-	<2	<2	<2	<2	10	1,200	404	53	-	<1	<1	543	543	-	69
01 Aug 2023	GW01 (QC200)	Water	-	-	-	-	-	-	<5	<5	-	<5	1,200	390	-	60	<20	<20	580	580	65	-
02 Aug 2023	GW02	Water	6.95	4,105	-28.4	0.73	23.1	<2	<2	<2	<2	7	2,830	1,010	239	-	<1	<1	789	789	-	67
01 Aug 2023	GW03	Water	7.08	4,334	-67.0	0.0	22.6	<2	<2	<2	<2	12	2,980	899	51	-	<1	<1	1,370	1,370	-	47
01 Aug 2023	PE01	Water	9.76	6,333	-195.1	0.0	22.6	<2	<2	<2	<2	152	4,270	1,140	<1	-	<1	1,190	1,150	2,340	-	9
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T7. Groundwater Laboratory Results

	al & Major Ions											Amino Aromatics				Inorganics				
	Magnesium	Magnesium (filtered)	Sodium	Sodium (filtered)	Potassium	Potassium (filtered)	Fluoride	Anions Total	Cations Total	Ionic Balance	Hardness as CaCO3	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Cyanide (Free)	Cyanide Total	Cyanide (WAD)	2-nitroaniline	3-nitroaniline
EQL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
Bremer River Drinking Water WQO	0.5	0.5	180	0.5	0.5	0.5	0.5	0.01	0.01	0.01	200	2	5	5	4	0.004	0.004	0.004	4	4
ADWG 2018 Health criteria x 10							15										0.8			
ANZECC 2000 Irrigation Short Term Trigger Values							2													
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water							1.5										0.08			
NEPM 2013 Table 1C GILs, Fresh Waters																	0.007			
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	-	70	-	283	-	9	-	23.3	21.4	4.19	-	<2	-	-	<4	<0.004	<0.004	<0.004	<4	<4
01 Aug 2023	GW01 (QC100)	Water	-	82	-	337	-	10	-	23.3	25.1	3.63	-	<2	-	-	<4	<0.004	<0.004	<0.004	<4	<4
01 Aug 2023	GW01 (QC200)	Water	75	-	310	-	10	-	<0.5	-	-	-	470	<5	<5	<5	-	<0.005	0.015	<0.005	<5	-
02 Aug 2023	GW02	Water	-	107	-	900	-	16	-	49.2	51.7	2.45	-	<2	-	-	<4	<0.004	<0.004	<0.004	<4	<4
01 Aug 2023	GW03	Water	-	96	-	923	-	14	-	53.8	50.8	2.91	-	<2	-	-	<4	<0.004	<0.004	<0.004	<4	<4
01 Aug 2023	PE01	Water	-	25	-	1,680	-	12	-	78.9	75.9	1.95	-	<2	-	-	<4	<0.004	0.184	<0.004	<4	<4
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Comments

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Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Anilines				Metals															
	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Aluminium	Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc	Zinc (filtered)
EQL	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
Bremer River Drinking Water WQO	2	2	2	2	0.1	0.01	1	0.1	1	1	0.05	0.05	1	1	0.001	0.001	0.1	1	5	5
ADWG 2018 Health criteria x 10					0.1		10				0.3	0.03	10		0.1	0.01				
ANZECC 2000 Irrigation Short Term Trigger Values							100	2		20,000			100	100	5	5	10	200		
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay					20	20	2,000	50	1,000	5,000	10	10	5,000	5,000	10	10	2	2,000	5,000	5,000
NEPM 2013 Table 1C GILs, Drinking Water							10	2		2,000			10	10	0.5	0.5	1	20		
NEPM 2013 Table 1C GILs, Fresh Waters				8	0.055	0.055		0.2		1.4			3.4	3.4	1.9	1.9	0.06	11	8	8
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																		
01 Aug 2023	GW01	Water	<2	<2	<2	<2	0.02	<0.01	1	<0.1	<1	<1	0.98	0.93	-	<1	0.777	0.672	<0.1	1
01 Aug 2023	GW01 (QC100)	Water	<2	<2	<2	<2	<0.01	<0.01	<1	<0.1	<1	<1	0.97	<0.05	-	<1	0.722	0.733	<0.1	1
01 Aug 2023	GW01 (QC200)	Water	-	-	-	<5	<0.05	<0.05	-	-	-	-	0.52	0.98	<1	-	0.72	0.73	-	-
02 Aug 2023	GW02	Water	<2	<2	<2	<2	6.86	0.02	2	<0.1	<1	<1	16.6	1.04	-	<1	0.657	0.450	<0.1	12
01 Aug 2023	GW03	Water	<2	<2	<2	<2	0.24	<0.01	<1	<0.1	<1	<1	1.67	1.30	-	<1	0.114	0.138	<0.1	<1
01 Aug 2023	PE01	Water	<2	<2	<2	<2	0.03	0.02	26	<0.1	12	<1	0.15	0.17	-	<1	0.007	0.010	<0.1	6
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Environmental Standards

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	BTEX									TRH										
	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene	Naphthalene (BTEX)	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	Total MAH	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene
EQL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
	1	1	1	2	1	2	1	5	1	20	20	50	50	100	100	100	0.003	1	1	1
Bremer River Drinking Water WQO																				
ADWG 2018 Health criteria x 10	10	8,000	3,000			6,000														
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay	5,000 5,000 5,000																			
NEPM 2013 Table 1C GILs, Drinking Water	1	800	300			600														
NEPM 2013 Table 1C GILs, Fresh Waters	950				350	550	16	16												
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																					
01 Aug 2023	GW01	Water	<1	<2	<2	<2	<2	<2	<2	<5	<1	40	40	<100	<100	<100	<100	<100	<100	-	<5	<5	<5
01 Aug 2023	GW01 (QC100)	Water	<1	<2	<2	<2	<2	<2	<2	<5	<1	<20	<20	<100	<100	<100	<100	<100	<100	-	<5	<5	<5
01 Aug 2023	GW01 (QC200)	Water	<1	<1	<1	<2	<1	<3	<1	<10	-	<20	<20	<50	<50	<100	<100	<100	<100	<0.003	<1	<1	<1
02 Aug 2023	GW02	Water	<1	<2	<2	<2	<2	<2	<2	<5	<1	<20	<20	190	190	330	110	630	-	<5	<5	<5	
01 Aug 2023	GW03	Water	<1	<2	<2	<2	<2	<2	<2	<5	<1	<20	<20	280	280	320	<100	600	-	<5	<5	<5	
01 Aug 2023	PE01	Water	<1	<2	<2	<2	<2	<2	<2	<5	<1	<20	<20	16,200	16,200	580	<100	16,800	-	<5	<5	<5	
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Comments
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Environmental Standards
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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T7. Groundwater Laboratory Results

	MAH						Halogenated Hydrocarbons														
	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic	Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
EQL	5	5	5	5	1	5	1	5	5	1	5	5	5	1	1	1	1	1	1	5	
Bremer River Drinking Water WQO																					
ADWG 2018 Health criteria x 10					300		10	10											300		
ANZECC 2000 Irrigation Short Term Trigger Values																					
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																					
NEPM 2013 Table 1C GILs, Drinking Water					30			1											30		
NEPM 2013 Table 1C GILs, Fresh Waters																	6,500				
PFAS NEMP 2020 Drinking Water																					
PFAS NEMP 2020 Recreational Water																					
PFAS NEMP 2020 Interim Marine 99%																					
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																					

Date	Field ID	Matrix Type																			
01 Aug 2023	GW01	Water	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<50	-	-	<5	<5	<5	<5	<5	<5
01 Aug 2023	GW01 (QC100)	Water	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<50	-	-	<5	<5	<5	<5	<5	<5
01 Aug 2023	GW01 (QC200)	Water	-	-	-	-	<1	-	<1	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1	-	-
02 Aug 2023	GW02	Water	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<50	-	-	<5	<5	<5	<5	<5	<5
01 Aug 2023	GW03	Water	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<50	-	-	<5	<5	<5	<5	<5	<5
01 Aug 2023	PE01	Water	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<50	-	-	<5	<5	<5	<5	<5	<5
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Chlorinated Hydrocarbons																			
	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene
EQL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	1	5	1	1	1	5	0.005	1	1	1	1	1	5	5	5	1	1	1	5	2
Bremer River Drinking Water WQO																				
ADWG 2018 Health criteria x 10			30								3								40	7
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water			3								3								4	0.7
NEPM 2013 Table 1C GILs, Fresh Waters																				
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	-	<2
01 Aug 2023	GW01 (QC100)	Water	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	-	<2
01 Aug 2023	GW01 (QC200)	Water	<1	-	<1	<1	<1	<1	<0.005	<1	<1	<1	<1	<5	<5	<5	<5	<1	<1	<1	<5	<5
02 Aug 2023	GW02	Water	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	-	<2
01 Aug 2023	GW03	Water	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	-	<2
01 Aug 2023	PE01	Water	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	-	<2
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Environmental Standards

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	Halogenated Benzenes												
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	1,2,3,4-tetrachlorobenzene mg/L	1,2,3-trichlorobenzene µg/L	1,2,3,5-Tetrachlorobenzene mg/L	1,2,4,5-tetrachlorobenzene µg/L	1,2,4-trichlorobenzene µg/L	1,2-dichlorobenzene µg/L	1,3,5-Trichlorobenzene µg/L	1,3-dichlorobenzene µg/L	1,4-dichlorobenzene µg/L	2-chlorotoluene µg/L	4-chlorotoluene µg/L	Bromobenzene µg/L	Chlorobenzene µg/L
EQL	5	2	1	1	1	1	5	0.005	5	0.005	5	2	1	5	1	1	5	1	1	1
Bremer River Drinking Water WQO																				
ADWG 2018 Health criteria x 10				500			3						15,000			400				3,000
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water				50			0.3		30			30	1,500	30		40				300
NEPM 2013 Table 1C GILs, Fresh Waters		290							3			85	160		260	60				
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																			
01 Aug 2023	GW01	Water	<10	<2	<5	<5	<5	<5	<50	-	<5	-	-	<2	<2	-	<2	<2	<5	<5	<5
01 Aug 2023	GW01 (QC100)	Water	<10	<2	<5	<5	<5	<5	<50	-	<5	-	-	<2	<2	-	<2	<2	<5	<5	<5
01 Aug 2023	GW01 (QC200)	Water	<5	<5	<1	<1	<1	<5	<0.005	<5	<0.005	<5	<1	<5	<1	<1	<1	<1	-	<1	<1
02 Aug 2023	GW02	Water	<10	<2	<5	<5	<5	<5	<50	-	<5	-	-	<2	<2	-	<2	<2	<5	<5	<5
01 Aug 2023	GW03	Water	<10	<2	<5	<5	<5	<5	<50	-	<5	-	-	<2	<2	-	<2	<2	<5	<5	<5
01 Aug 2023	PE01	Water	<10	<2	<5	<5	<5	<5	<50	-	<5	-	-	<2	<2	-	<2	<2	<5	<5	<5
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

			VOCs				SVOCs													
	Hexachlorobenzene	Pentachlorobenzene	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Dibenz(a,h)acridine	Pentachloroethane	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl) ether	Dibenzofuran	Hexachloropropene	Methapyrene	N-nitrosomorpholine
EQL	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Bremer River Drinking Water WQO	4	2	5	5	0.005	5	2	2	2	2	2	2	2	2	2	5	2	2	2	2
ADWG 2018 Health criteria x 10																				
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water																				
NEPM 2013 Table 1C GILs, Fresh Waters																				
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																			
01 Aug 2023	GW01	Water	<4	<2	<5	<5	-	<5	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2
01 Aug 2023	GW01 (QC100)	Water	<4	<2	<5	<5	-	<5	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2
01 Aug 2023	GW01 (QC200)	Water	<5	<5	-	-	<0.005	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-
02 Aug 2023	GW02	Water	<4	<2	<5	<5	-	<5	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2
01 Aug 2023	GW03	Water	<4	<2	<5	<5	-	<5	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2
01 Aug 2023	PE01	Water	<4	<2	<5	<5	-	<5	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T7. Groundwater Laboratory Results

				TRH - (Silica Gel Cleanup)															PAH			
	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	>C10 - C40 Fraction (sum) (SG)	Benzo(b+h)fluoranthene	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene		
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L		
EQL	2	4	2	100	100	100	100	0.004	5	2	2	2	2	1	1	1	1	1	0.001	1		
Bremer River Drinking Water WQO																						
ADWG 2018 Health criteria x 10																		0.1				
ANZECC 2000 Irrigation Short Term Trigger Values																						
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																						
NEPM 2013 Table 1C GILs, Drinking Water																		0.01				
NEPM 2013 Table 1C GILs, Fresh Waters																						
PFAS NEMP 2020 Drinking Water																						
PFAS NEMP 2020 Recreational Water																						
PFAS NEMP 2020 Interim Marine 99%																						
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																						

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	<2	<4	<2	-	-	-	-	<0.004	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
01 Aug 2023	GW01 (QC100)	Water	<2	<4	<2	-	-	-	-	<0.004	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
01 Aug 2023	GW01 (QC200)	Water	<5	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<0.001	<1
02 Aug 2023	GW02	Water	<2	<4	<2	-	-	-	-	<0.004	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
01 Aug 2023	GW03	Water	<2	<4	<2	-	-	-	-	<0.004	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
01 Aug 2023	PE01	Water	<2	<4	<2	-	-	-	-	<0.004	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
01 Aug 2023	PE01	Water	-	-	-	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	TPH										2,3,4,6-Tetrachlorophenol
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
EQL	1	1	1	1	1	1	1	1	0.002	1	20	50	100	50	50	100	50	50	50	50	10
Bremer River Drinking Water WQO																					
ADWG 2018 Health criteria x 10																					
ANZECC 2000 Irrigation Short Term Trigger Values																					
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																					
NEPM 2013 Table 1C GILs, Drinking Water																					
NEPM 2013 Table 1C GILs, Fresh Waters																					10
PFAS NEMP 2020 Drinking Water																					
PFAS NEMP 2020 Recreational Water																					
PFAS NEMP 2020 Interim Marine 99%																					
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																					

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	-	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	40	<50	<100	<50	-	-	-	-	<50	-
01 Aug 2023	GW01 (QC100)	Water	-	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	<20	<50	<100	<50	-	-	-	-	<50	-
01 Aug 2023	GW01 (QC200)	Water	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<20	<50	<100	<100	-	-	-	-	<100	<10
02 Aug 2023	GW02	Water	-	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	<20	180	200	190	-	-	-	-	570	-
01 Aug 2023	GW03	Water	-	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	<20	260	310	<50	-	-	-	-	570	-
01 Aug 2023	PE01	Water	-	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	<20	15,000	1,810	60	-	-	-	-	16,900	-
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<100	<50	<50	-	-

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Comments

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Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Phenols															Explosives				
	2,4,5-Trichlorophenol	2,4-Dinitrophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4,6-Dinitro-2-methylphenol	4-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol	1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	4,4-DDE
EQL	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
Bremer River Drinking Water WQO	2	0.03	2	2	2	2	2	2	4	2	30	30	2	4	2	0.002	4	4	2	2
ADWG 2018 Health criteria x 10			200	2,000			3,000							100						
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water			20	200			300							10						
NEPM 2013 Table 1C GILs, Fresh Waters		0.045	3	120			340							3.6	320					
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	<2	-	<2	<2	<2	<2	<2	<4	<2	-	-	<2	<4	<2	<0.002	<4	<4	<2	<2	
01 Aug 2023	GW01 (QC100)	Water	<2	-	<2	<2	<2	<2	<2	<4	<2	-	-	<2	<4	<2	<0.002	<4	<4	<2	<2	
01 Aug 2023	GW01 (QC200)	Water	<10	<0.03	<10	<3	<3	<3	<3	<6	<10	<30	<30	<10	<10	<3	-	<5	<5	<50	<5	
02 Aug 2023	GW02	Water	<2	-	<2	<2	<2	<2	<2	<4	<2	-	-	<2	<4	<2	<0.002	<4	<4	<2	<2	
01 Aug 2023	GW03	Water	<2	-	<2	<2	<2	<2	<2	<4	<2	-	-	<2	<4	<2	<0.002	<4	<4	<2	<2	
01 Aug 2023	PE01	Water	<2	-	<2	<2	<2	<2	<2	<4	<2	-	-	<2	<4	<2	<0.002	<4	<4	<2	<2	
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Organochlorine Pesticides																			
	a-BHC	Aldrin + Dieldrin	Aldrin	b-BHC	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Chlorfenvinphos
EQL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Bremer River Drinking Water WQO	2	0.1	2	2	2	2	4	0.1	2	2	2	2	2	5	5	2	2	2	5	2
ADWG 2018 Health criteria x 10		3					90									100	3			20
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water		0.3					9									10		0.3		2
NEPM 2013 Table 1C GILs, Fresh Waters							0.006						0.01			0.2	0.01			
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	<2	<4	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	<2
01 Aug 2023	GW01 (QC100)	Water	<2	<4	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	<2
01 Aug 2023	GW01 (QC200)	Water	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-
02 Aug 2023	GW02	Water	<2	<4	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	<2
01 Aug 2023	GW03	Water	<2	<4	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	<2
01 Aug 2023	PE01	Water	<2	<4	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	<2
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Environmental Standards

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Organophosphorous Pesticides								Pesticides			Herbicides		Perfluoroalkyl Sulfonic Acids						
	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Prothiofos	Chlorobenzilate	Carbazole	Pirimphos-ethyl	Pronamide	Trifluralin	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)
EQL	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	2	0.002	2	2	2	2	2	2	2	2	2	2	2	0.005	0.0005	0.0005	0.0005	0.0005	0.0001	0.0005
Bremer River Drinking Water WQO																				
ADWG 2018 Health criteria x 10	100		40	50	70	4	7	700				5	700	9						
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water	10		4	5	7	4	7	70					70	0.09						
NEPM 2013 Table 1C GILs, Fresh Waters	0.01		0.01		0.15			0.05						0.0026						
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																			0.00023	
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																			0.0091	

Date	Field ID	Matrix Type																			
01 Aug 2023	GW01	Water	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<0.0078 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
01 Aug 2023	GW01 (QC100)	Water	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<0.0016 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
01 Aug 2023	GW01 (QC200)	Water	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001
02 Aug 2023	GW02	Water	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
01 Aug 2023	GW03	Water	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
01 Aug 2023	PE01	Water	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	0.0105	0.0041	0.0148	0.0044	0.0774	<0.0005
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

 Project Name: QPG Ebbw Vale EMR Removal Job Number: BCL220065.01 Client: QPG Table: Table T7. Groundwater Laboratory Results			Perfluoroalkyl Carboxylic Acid													Perfluoroalkyl Sulfonamides						
		Sum of PFHxS and PFOS	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorononanesulfonic acid (PFNS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorooctane sulfonamide (PFOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-Ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	
EQL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
Bremer River Drinking Water WQO	0.0002	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.000001	0.000001	0.0005	0.001	0.001	0.001	0.001	0.0005		
ADWG 2018 Health criteria x 10	0.035					0.28																
ADWG 2018 Health criteria x 10	0.7					5.6																
ANZECC 2000 Irrigation Short Term Trigger Values																						
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																						
NEPM 2013 Table 1C GILs, Drinking Water																						
NEPM 2013 Table 1C GILs, Fresh Waters																						
PFAS NEMP 2020 Drinking Water	0.07					0.56																
PFAS NEMP 2020 Recreational Water	2					10																
PFAS NEMP 2020 Interim Marine 99%						19																
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																						

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	<0.0002	<0.0391 ^{#1}	<0.0078 ^{#1}	<0.0078 ^{#1}	<0.0078 ^{#1}	<0.0078 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0078 ^{#1}	<0.0078 ^{#1}	<0.0196 ^{#1}	-	-	<0.0078 ^{#1}	<0.001	<0.020 ^{#1}	<0.001	<0.020 ^{#1}	<0.0005
01 Aug 2023	GW01 (QC100)	Water	<0.0002	<0.0079 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0039 ^{#1}	-	-	<0.0016 ^{#1}	<0.004 ^{#1}	<0.004 ^{#1}	<0.001	<0.004 ^{#1}	<0.0005
01 Aug 2023	GW01 (QC200)	Water	<0.001	<0.005	0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.000001	<0.000001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
02 Aug 2023	GW02	Water	<0.0002	<0.0078 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0010 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005
01 Aug 2023	GW03	Water	<0.0002	<0.0078 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005
01 Aug 2023	PE01	Water	0.0522	<0.0078 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0005	<0.0039 ^{#1}	-	-	<0.0016 ^{#1}	<0.004 ^{#1}	<0.004 ^{#1}	<0.004 ^{#1}	<0.004 ^{#1}	<0.0005
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

 Project Name: QPG Ebbw Vale EMR Removal Job Number: BCL220065.01 Client: QPG Table: Table T7. Groundwater Laboratory Results		Fluorotelomer Sulfonic Acids					PFAS Totals				Nitroaromatics			Other	Phthalates							
	N-ethyl-perfluorooctanesulfonamidoacetic acid (NETFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS (WA DER List)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Acetophenone	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Methyl Ethyl ketone		
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
	0.0005	0.001	0.001	0.001	0.001	0.0002	0.001	0.001	0.0002	2	2	2	2	5	2	2	2	2	2	5		
	Bremer River Drinking Water WQO																					
	ADWG 2018 Health criteria x 10											300		100								
	ANZECC 2000 Irrigation Short Term Trigger Values																					
	NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																					
	NEPM 2013 Table 1C GILs, Drinking Water											30		10								
	NEPM 2013 Table 1C GILs, Fresh Waters																1,000	3,700	10			
PFAS NEMP 2020 Drinking Water																						
PFAS NEMP 2020 Recreational Water																						
PFAS NEMP 2020 Interim Marine 99%																						
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																						

Date	Field ID	Matrix Type																				
01 Aug 2023	GW01	Water	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0002	-	-	<0.0002	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50
01 Aug 2023	GW01 (QC100)	Water	<0.0016 ^{#1}	<0.001	<0.001	<0.001	<0.001	<0.0016 ^{#1}	-	-	<0.0016 ^{#1}	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50
01 Aug 2023	GW01 (QC200)	Water	<0.005	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
02 Aug 2023	GW02	Water	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0016 ^{#1}	-	-	<0.0016 ^{#1}	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50
01 Aug 2023	GW03	Water	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0016 ^{#1}	-	-	<0.0016 ^{#1}	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50
01 Aug 2023	PE01	Water	<0.0016 ^{#1}	<0.001	<0.001	<0.001	<0.001	0.103	-	-	0.111	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE - "<0.": less than LOR, "-": not analysed

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T7. Groundwater Laboratory Results

	Solvents						
	2-hexanone (MBAK)	4-Methyl-2-pentanone	Acetone	Allyl chloride	Carbon disulfide	Isophorone	Vinyl acetate
EQL	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L
Bremer River Drinking Water WQO	50	5	0.005	0.001	1	2	50
ADWG 2018 Health criteria x 10							
ANZECC 2000 Irrigation Short Term Trigger Values							
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay							
NEPM 2013 Table 1C GILs, Drinking Water							
NEPM 2013 Table 1C GILs, Fresh Waters							
PFAS NEMP 2020 Drinking Water							
PFAS NEMP 2020 Recreational Water							
PFAS NEMP 2020 Interim Marine 99%							
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%							

Date	Field ID	Matrix Type							
01 Aug 2023	GW01	Water	<50	<50	-	-	<5	<2	<50
01 Aug 2023	GW01 (QC100)	Water	<50	<50	-	-	<5	<2	<50
01 Aug 2023	GW01 (QC200)	Water	-	<5	<0.005	<0.001	≤1	-	-
02 Aug 2023	GW02	Water	<50	<50	-	-	<5	<2	<50
01 Aug 2023	GW03	Water	<50	<50	-	-	<5	<2	<50
01 Aug 2023	PE01	Water	<50	<50	-	-	<8 ^{#1}	<2	<50
01 Aug 2023	PE01	Water	-	-	-	-	-	-	-

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Environmental Standards

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results

NA	Metals																		
	Moisture Content	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc	Benzene	Toluene	Ethylbenzene
	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	1	5	10	1	50	1	2	2	5	5	5	0.1	2	5	5	5	0.2	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil		100		60	4,500	20		100	6,000	300	3,800	40	400	200		7,400			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																	0.7	480	
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space		100																	
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																	65	105	125
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																			
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																			
PFAS NEMP 2020 Ecological direct exposure																			
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																			

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Soil	32.4	6	230	4	<50	<1	7	8	37	18	89	<0.1	10	<5	20	70	<0.2	<0.5	<0.5
01 Aug 2023	SW02	Soil	31.3	13	210	<1	<50	<1	8	15	21	14	903	<0.1	10	7	25	64	<0.2	<0.5	<0.5
01 Aug 2023	SW02	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SW03	Soil	25.2	<5	20	<1	<50	<1	<2	2	8	<5	60	<0.1	2	<5	<5	16	<0.2	<0.5	<0.5
02 Aug 2023	SW03	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Aug 2023	SW04	Soil	13.3	5	40	<1	<50	<1	6	12	16	10	177	<0.1	10	<5	22	59	<0.2	<0.5	<0.5

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Environmental Standards
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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T8. Sediment Laboratory Results

	BTEX						TRH							Halogenated Benzenes	TRH - (Silica Gel Cleanup)			
	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene	Naphthalene (BTEX)	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	Hexachlorobenzene	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	>C10 - C40 Fraction (sum) (SG)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	1	0.2	10	10	50	50	100	100	50	0.05	50	100	100	50
NEPM 2013 Table 1A(1) HILs Res A Soil														10				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay			110	5	5			50		280								
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space				170	170													
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil			45					180	120	120	1,300	5,600				1,300	5,600	
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil							800		1,000		3,500	10,000						
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																		
PFAS NEMP 2020 Ecological direct exposure																		
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																		

Date	Field ID	Matrix Type																	
01 Aug 2023	SW01	Soil	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<10	<10	<50	<50	<100	<100	<50	<0.05	-	-	-
01 Aug 2023	SW02	Soil	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<10	<10	160	160	600	190	950	<0.05	-	-	-
01 Aug 2023	SW02	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<100	<100
02 Aug 2023	SW03	Soil	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<10	<10	50	50	200	<100	250	<0.05	-	-	-
02 Aug 2023	SW03	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<100	<100
10 Aug 2023	SW04	Soil	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<10	<10	100	100	380	150	630	<0.05	-	-	-

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Environmental Standards
Refer to Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results

	PAH																		
	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+g)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Haf)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil																3	3	3	300
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil					0.7														
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																			
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																			
PFAS NEMP 2020 Ecological direct exposure																			
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																33	33	33	

Date	Field ID	Matrix Type																	
01 Aug 2023	SW01	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
01 Aug 2023	SW02	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
01 Aug 2023	SW02	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SW03	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
02 Aug 2023	SW03	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Aug 2023	SW04	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T8. Sediment Laboratory Results

	TPH									Phenols									
	C6-C9	C10-C14	C15-C28	C29-C36	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	TRH C10-C36 (Total) (after silica gel clean-up)	C10-C36 (Sum of total)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4-chloro-3-methylphenol
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	10	50	100	100	50	100	100	50	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil																			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																			
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																			
PFAS NEMP 2020 Ecological direct exposure																			
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																			

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Soil	<10	<50	<100	<100	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5
01 Aug 2023	SW02	Soil	<10	110	380	380	-	-	-	-	870	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5
01 Aug 2023	SW02	Soil	-	-	-	-	<50	<100	<100	<50	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SW03	Soil	<10	<50	180	<100	-	-	-	-	180	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5
02 Aug 2023	SW03	Soil	-	-	-	-	<50	<100	<100	<50	-	-	-	-	-	-	-	-	-	-	-
10 Aug 2023	SW04	Soil	<10	<50	270	230	-	-	-	-	500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T8. Sediment Laboratory Results

			PCBs	Organochlorine Pesticides															
	Pentachlorophenol	Phenol	PCBs (Sum of total)	4,4-DDE	a-BHC	Aldrin + Dieldrin	Aldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2	0.5	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HILs Res A Soil	100	3,000	1			6			50						240		270		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space													180						
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																			
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																			
PFAS NEMP 2020 Ecological direct exposure																			
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																			

Date	Field ID	Matrix Type																		
01 Aug 2023	SW01	Soil	<2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05
01 Aug 2023	SW02	Soil	<2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05
01 Aug 2023	SW02	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SW03	Soil	<2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05
02 Aug 2023	SW03	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Aug 2023	SW04	Soil	<2	<0.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results

									Organophosphorous Pesticides										
	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HILs Res A Soil		10				6		300					160						
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																			
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																			
PFAS NEMP 2020 Ecological direct exposure																			
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																			

Date	Field ID	Matrix Type																		
01 Aug 2023	SW01	Soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
01 Aug 2023	SW02	Soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.15 ^{#1}	<0.05
01 Aug 2023	SW02	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SW03	Soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
02 Aug 2023	SW03	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Aug 2023	SW04	Soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results

								Pesticides	Perfluoroalkyl Sulfonic Acids										
	Fenamiphos	Fenthion	Malathion	Methyl parathion	Monocrotophos	Parathion	Prothiofos	Pirimphos-ethyl	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Sum of PFHxS and PFOS	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.2	0.2	0.2	0.05	0.05	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002
NEPM 2013 Table 1A(1) HILs Res A Soil																			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																			
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)											0.007		0.007		0.007				
PFAS NEMP 2020 Ecological direct exposure													1						
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																			

Date	Field ID	Matrix Type																		
01 Aug 2023	SW01	Soil	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002
01 Aug 2023	SW02	Soil	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010 ^{#1}	<0.0002	<0.0005 ^{#1}	<0.001	<0.0005 ^{#1}	<0.0002
01 Aug 2023	SW02	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SW03	Soil	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002
02 Aug 2023	SW03	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Aug 2023	SW04	Soil	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.0002	<0.0002	<0.0002	<0.0004 ^{#1}	0.0006	<0.0002	0.0006	<0.001	<0.0002	<0.0002

NOTE - "<0.": less than LOR, "-": not analysed

Comments
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Environmental Standards
Refer to Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T8. Sediment Laboratory Results

	Perfluoroalkyl Carboxylic Acid							Perfluoroalkyl Sulfonamides								Fluorotelomer Sulfonic Acids				PFAS
	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS (WA DER List)	
EQL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	μg/kg	
	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.2	
NEPM 2013 Table 1A(1) HILs Res A Soil																				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																				
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																				
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																				
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																				
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)	0.1																			
PFAS NEMP 2020 Ecological direct exposure	10																			
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space																				

Date	Field ID	Matrix Type																		
01 Aug 2023	SW01	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.2
01 Aug 2023	SW02	Soil	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0012 ^{#1}	<0.0005 ^{#1}	<0.0012 ^{#1}	<0.0012 ^{#1}	<0.0012 ^{#1}	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0005	<0.5 ^{#1}
01 Aug 2023	SW02	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02 Aug 2023	SW03	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.2
02 Aug 2023	SW03	Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Aug 2023	SW04	Soil	<0.0002	<0.0002	<0.0002	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0005 ^{#1}	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005 ^{#1}	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.6

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Comments
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Environmental Standards
Refer to Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T8. Sediment Laboratory Results

Totals		
Sum of PFAS		
mg/kg		
EQL	0.0002	
NEPM 2013 Table 1A(1) HILs Res A Soil		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay		
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil		
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil		
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)		
PFAS NEMP 2020 Ecological direct exposure		
CRC Care 2017 Derived Ecological Guideline - Urban residential and public open space		

Date	Field ID	Matrix Type	
01 Aug 2023	SW01	Soil	<0.0002
01 Aug 2023	SW02	Soil	<0.0005 ^{#1}
01 Aug 2023	SW02	Soil	-
02 Aug 2023	SW03	Soil	<0.0002
02 Aug 2023	SW03	Soil	-
10 Aug 2023	SW04	Soil	0.0006

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Environmental Standards
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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	Field Parameters					Amino Aliphatics				Physico-Chemical										
	pH	Electrical Conductivity	Oxidation Reduction Potential	Dissolved Oxygen	Temperature	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	TOC	TDS	Chloride	Sulfate as SO4 - Turbidimetric (filtered)	Sulphate	Alkalinity (Hydroxide) as CaCO3	Carbonate as CaCO3	Bicarbonate as CaCO3	Alkalinity (total) as CaCO3	Calcium	Calcium (filtered)
EQL	-	-	-	-	-	2	2	2	2	1	10	1	1	5	1	1	1	1	0.5	0.5
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow	6.5-8.2	540	-	90-110																
ADWG 2018 Health criteria x 10																				
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water														500						
NEPM 2013 Table 1C GILs, Fresh Waters																				
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	SW01	Water	7.29	123.1	41.9	67.78	16.4	<2	<2	<2	<2	7	98	26	4	-	<1	<1	12	12	-	<1
02 Aug 2023	SW03	Water	7.19	754	-0.3	2.42	13.7	<2	<2	<2	<2	27	604	82	17	-	<1	73	341	414	-	20
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Environmental Standards

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	al & Major Ions											Amino Aromatics				Inorganics				
	Magnesium	Magnesium (filtered)	Sodium	Sodium (filtered)	Potassium	Potassium (filtered)	Fluoride	Anions Total	Cations Total	Ionic Balance	Hardness as CaCO3	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Cyanide (Free)	Cyanide Total	Cyanide (WAD)	2-nitroaniline	3-nitroaniline
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.01	0.01	5	2	5	5	4	0.004	0.004	0.004	4	4
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																				
ADWG 2018 Health criteria x 10							15										0.8			
ANZECC 2000 Irrigation Short Term Trigger Values							2													
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water							1.5										0.08			
NEPM 2013 Table 1C GILs, Fresh Waters																	0.007			
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	SW01	Water	-	2	-	25	-	2	-	1.06	1.30	-	-	<2	-	-	<4	<0.004	<0.004	<0.004	<4	<4
02 Aug 2023	SW03	Water	-	38	-	155	-	5	-	10.9	11.0	0.26	-	<2	-	-	<4	-	-	-	<4	<4
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.004	<0.004	<0.004	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	Anilines				Metals															
	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Aluminium	Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc	Zinc (filtered)
EQL	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
	2	2	2	2	0.01	0.01	1	0.1	1	1	0.05	0.05	1	1	0.001	0.001	0.1	1	5	5
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																				
ADWG 2018 Health criteria x 10							100	2		20,000			100	100	5	5	10	200		
ANZECC 2000 Irrigation Short Term Trigger Values					20	20	2,000	50	1,000	5,000	10	10	5,000	5,000	10	10	2	2,000	5,000	5,000
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water							10	2		2,000			10	10	0.5	0.5	1	20		
NEPM 2013 Table 1C GILs, Fresh Waters				8	0.055	0.055		0.2		1.4			3.4	3.4	1.9	1.9	0.06	11	8	8
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	SW01	Water	<2	<2	<2	<2	11.1	0.26	<1	<0.1	<1	1	2.08	0.28	-	<1	0.022	0.021	<0.1	1	14	7
02 Aug 2023	SW03	Water	<2	<2	<2	<2	0.35	0.03	3	<0.1	<1	2	0.18	0.07	-	<1	0.166	0.130	<0.1	3	6	5
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Environmental Standards
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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	BTEX									TRH										
	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene	Naphthalene (BTEX)	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	Total MAH	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene
EQL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow	1	1	1	2	1	2	1	5	1	20	20	50	50	100	100	100	0.003	1	1	1
ADWG 2018 Health criteria x 10	10	8,000	3,000			6,000														
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay	5,000																			
NEPM 2013 Table 1C GILs, Drinking Water	1	800	300			600														
NEPM 2013 Table 1C GILs, Fresh Waters	950				350	550	16	16												
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<1	<2	<2	<2	<2	<2	<2	<2	<5	<1	<20	<20	<100	<100	150	<100	150	-	<5
02 Aug 2023	SW03	Water	<1	<2	<2	<2	<2	<2	<2	<2	<5	<1	<20	<20	<100	<100	<100	<100	<100	-	<5
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T9. Surface Water Laboratory Results

	MAH						Halogenated Hydrocarbons													
	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic	Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	5	5	5	5	1	5	1	5	5	1	5	5	5	1	1	1	1	1	1	5
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																				
ADWG 2018 Health criteria x 10					300		10	10											300	
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water					30			1											30	
NEPM 2013 Table 1C GILs, Fresh Waters																	6,500			
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<50	-	-	<5	<5	<5	<5	<5	<5
02 Aug 2023	SW03	Water	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<50	-	-	<5	<5	<5	<5	<5	<5
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T9. Surface Water Laboratory Results

	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQI	1	5	1	1	1	5	0.005	1	1	1	1	1	5	5	5	1	1	1	5	2
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																				
ADWG 2018 Health criteria x 10			30								3								40	7
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water			3								3								4	0.7
NEPM 2013 Table 1C GILs, Fresh Waters																				
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	SW01	Water	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	-	<2
02 Aug 2023	SW03	Water	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	-	<2
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T9. Surface Water Laboratory Results

	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	Halogenated Benzenes													
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	1,2,3,4-tetrachlorobenzene	1,2,3-trichlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3,5-Trichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	
EQL	5	2	1	1	1	1	5	0.005	5	0.005	5	2	1	5	1	1	5	1	1	1	
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																					
ADWG 2018 Health criteria x 10				500			3						15,000			400				3,000	
ANZECC 2000 Irrigation Short Term Trigger Values																					
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																					
NEPM 2013 Table 1C GILs, Drinking Water				50			0.3		30			30	1,500	30		40				300	
NEPM 2013 Table 1C GILs, Fresh Waters		290							3			85	160		260	60					
PFAS NEMP 2020 Drinking Water																					
PFAS NEMP 2020 Recreational Water																					
PFAS NEMP 2020 Interim Marine 99%																					
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																					

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<10	<2	<5	<5	<5	<5	<50	-	<5	-	-	<2	<2	-	<2	<2	<5	<5	<5
02 Aug 2023	SW03	Water	<10	<2	<5	<5	<5	<5	<50	-	<5	-	-	<2	<2	-	<2	<2	<5	<5	<5
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE - "<0.": less than LOR, "-": not analysed

Comments
#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards
Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

			VOCs				SVOCs													
	Hexachlorobenzene	Pentachlorobenzene	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Dibenz(a,h)acridine	Pentachloroethane	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl) ether	Dibenzofuran	Hexachloropropene	Methapyrene	N-nitrosomorpholine
EQL	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	4	2	5	5	0.005	5	2	2	2	2	2	2	2	2	2	5	2	2	2	2
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																				
ADWG 2018 Health criteria x 10																				
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water																				
NEPM 2013 Table 1C GILs, Fresh Waters																				
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<4	<2	<5	<5	-	<5	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2
02 Aug 2023	SW03	Water	<4	<2	<5	<5	-	<5	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T9. Surface Water Laboratory Results

				TRH - (Silica Gel Cleanup)				PAH													
	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	>C10 - C40 Fraction (sum) (SG)	Benzo(b+h)fluoranthene	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+h)fluoranthene	Benzo(g,h,i)perylene	
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	
EQL	2	4	2	100	100	100	100	0.004	5	2	2	2	2	1	1	1	1	1	0.001	1	
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																					
ADWG 2018 Health criteria x 10																		0.1			
ANZECC 2000 Irrigation Short Term Trigger Values																					
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																					
NEPM 2013 Table 1C GILs, Drinking Water																		0.01			
NEPM 2013 Table 1C GILs, Fresh Waters																					
PFAS NEMP 2020 Drinking Water																					
PFAS NEMP 2020 Recreational Water																					
PFAS NEMP 2020 Interim Marine 99%																					
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																					

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<2	<4	<2	-	-	-	-	<0.004	-	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
02 Aug 2023	SW03	Water	<2	<4	<2	-	-	-	-	<0.004	-	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Comments

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Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T9. Surface Water Laboratory Results

	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	C6-C9	C10-C14	C15-C28	C29-C36	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	TRH C10-C36 (Total) (after silica gel clean-up)	C10-C36 (Sum of total)	2,3,4,6-Tetrachlorophenol
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1	1	1	1	1	1	1	1	0.002	1	20	50	100	50	50	100	50	50	50	10
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																				
ADWG 2018 Health criteria x 10																				
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water																				
NEPM 2013 Table 1C GILs, Fresh Waters																				10
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	SW01	Water	-	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	<20	<50	120	<50	-	-	-	-	120	-
02 Aug 2023	SW03	Water	-	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	<20	<50	<100	<50	-	-	-	-	<50	-
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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#1 Reported Analyte LOR is higher than Requested Analyte LOR

Environmental Standards
Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	Phenols															Explosives				
	2,4,5-Trichlorophenol	2,4-Dinitrophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4,6-Dinitro-2-methylphenol	4-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol	1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	4,4-DDE
EQL	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow	2	0.03	2	2	2	2	2	2	4	2	30	30	2	4	2	0.002	4	4	2	2
ADWG 2018 Health criteria x 10			200	2,000			3,000							100						
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water			20	200			300							10						
NEPM 2013 Table 1C GILs, Fresh Waters		0.045	3	120			340							3.6	320					
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	SW01	Water	<2	-	<2	<2	<2	<2	<2	<2	<4	<2	-	-	<2	<4	<2	<0.002	<4	<4	<2	<2
02 Aug 2023	SW03	Water	<2	-	<2	<2	<2	<2	<2	<2	<4	<2	-	-	<2	<4	<2	<0.002	<4	<4	<2	<2
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Comments

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Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	Organochlorine Pesticides																			
	a-BHC	Aldrin + Dieldrin	Aldrin	b-BHC	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Chlorfenvinphos
EQL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow	2	0.1	2	2	2	2	4	0.1	2	2	2	2	2	5	5	2	2	2	5	2
ADWG 2018 Health criteria x 10		3					90									100	3			20
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water		0.3					9									10		0.3		2
NEPM 2013 Table 1C GILs, Fresh Waters							0.006						0.01			0.2	0.01			
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																				
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																				

Date	Field ID	Matrix Type																				
01 Aug 2023	SW01	Water	<2	<4	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	<2
02 Aug 2023	SW03	Water	<2	<4	<2	<2	<2	<2	<4	<4	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	<2
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Comments
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Environmental Standards
Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	Organophosphorous Pesticides								Pesticides			Herbicides		Perfluoroalkyl Sulfonic Acids						
	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Prothiofos	Chlorobenzilate	Carbazole	Pirimphos-ethyl	Pronamide	Trifluralin	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)
EQL	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow	2	0.002	2	2	2	2	2	2	2	2	2	2	2	0.005	0.0005	0.0005	0.0005	0.0005	0.0001	0.0005
ADWG 2018 Health criteria x 10	100		40	50	70	4	7	700				5	700	9						
ANZECC 2000 Irrigation Short Term Trigger Values																				
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																				
NEPM 2013 Table 1C GILs, Drinking Water	10		4	5	7	4	7	70					70	0.09						
NEPM 2013 Table 1C GILs, Fresh Waters	0.01		0.01		0.15			0.05						0.0026						
PFAS NEMP 2020 Drinking Water																				
PFAS NEMP 2020 Recreational Water																				
PFAS NEMP 2020 Interim Marine 99%																			0.00023	
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																			0.0091	

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010 ^{†1}	<0.0005
02 Aug 2023	SW03	Water	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<0.0016 ^{†1}	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Comments

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Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T9. Surface Water Laboratory Results

		Perfluoroalkyl Carboxylic Acid													Perfluoroalkyl Sulfonamides						
	Sum of PFHxS and PFOS	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorononanesulfonic acid (PFNS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorooctane sulfonamide (PFOSA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	N-Ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	
EQL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
	0.0002	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.000001	0.000001	0.0005	0.001	0.001	0.001	0.001	0.0005	
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																					
ADWG 2018 Health criteria x 10	0.7					5.6															
ANZECC 2000 Irrigation Short Term Trigger Values																					
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																					
NEPM 2013 Table 1C GILs, Drinking Water																					
NEPM 2013 Table 1C GILs, Fresh Waters																					
PFAS NEMP 2020 Drinking Water	0.07					0.56															
PFAS NEMP 2020 Recreational Water	2					10															
PFAS NEMP 2020 Interim Marine 99%						19															
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																					

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<0.0002	<0.0079 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0015 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0039 ^{#1}	-	-	<0.0016 ^{#1}	<0.004 ^{#1}	<0.004 ^{#1}	<0.004 ^{#1}	<0.0005
02 Aug 2023	SW03	Water	<0.0002	<0.0078 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0016 ^{#1}	<0.0005	<0.0005	<0.0005	<0.0005	<0.0039 ^{#1}	-	-	<0.0016 ^{#1}	<0.001	<0.004 ^{#1}	<0.001	<0.004 ^{#1}
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Environmental Standards
Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

 Project Name: QPG Ebbw Vale EMR Removal Job Number: BCL220065.01 Client: QPG Table: Table T9. Surface Water Laboratory Results		Fluorotelomer Sulfonic Acids					PFAS Totals				Nitroaromatics			Other	Phthalates							
	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFAS (WA DER List)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Acetophenone	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Methyl Ethyl ketone		
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
	EQL	0.0005	0.001	0.001	0.001	0.001	0.0002	0.001	0.001	0.0002	2	2	2	2	5	2	2	2	2	2	5	
	Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow																					
	ADWG 2018 Health criteria x 10												300	100								
	ANZECC 2000 Irrigation Short Term Trigger Values																					
	NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay																					
	NEPM 2013 Table 1C GILs, Drinking Water												30	10								
	NEPM 2013 Table 1C GILs, Fresh Waters																1,000	3,700	10			
PFAS NEMP 2020 Drinking Water																						
PFAS NEMP 2020 Recreational Water																						
PFAS NEMP 2020 Interim Marine 99%																						
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%																						

Date	Field ID	Matrix Type																			
01 Aug 2023	SW01	Water	<0.0016 ^{#1}	<0.001	<0.001	<0.001	<0.001	<0.0016 ^{#1}	-	-	<0.0016 ^{#1}	<2	<2	<2	<2	<10	<2	<2	<2	<2	<50
02 Aug 2023	SW03	Water	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0016 ^{#1}	-	-	<0.0016 ^{#1}	<2	<2	<2	<2	<10	<2	<2	<2	<2	<50
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Environmental Standards

Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T9. Surface Water Laboratory Results

	Solvents						
	2-hexanone (M8K)	4-Methyl-2-pentanone	Acetone	Allyl chloride	Carbon disulfide	Isophorone	Vinyl acetate
EQL	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L
Bremer River WQO Upland Fresh Waters, Moderately Disturbed - High Flow	50	5	0.005	0.001	1	2	50
ADWG 2018 Health criteria x 10							
ANZECC 2000 Irrigation Short Term Trigger Values							
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay							
NEPM 2013 Table 1C GILs, Drinking Water							
NEPM 2013 Table 1C GILs, Fresh Waters							
PFAS NEMP 2020 Drinking Water							
PFAS NEMP 2020 Recreational Water							
PFAS NEMP 2020 Interim Marine 99%							
ANZG Draft Toxicant Guideline Values 2023 Freshwater 99%							

Date	Field ID	Matrix Type							
01 Aug 2023	SW01	Water	<50	<50	-	-	<5	<2	<50
02 Aug 2023	SW03	Water	<50	<50	-	-	<5	<2	<50
10 Aug 2023	SW03	Water	-	-	-	-	-	-	-

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Environmental Standards
Refer Table 20 in body of report



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T10. RPDs - Heavy Metals (Soils)

	Metals																
	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc		
	LOR	1	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.005	0.5	0.5	1	0.5		
	5 x LOR	2.5	2.5	5	2.5	2.5	2.5	2.5	2.5	2.5	0.024999999	2.5	2.5	5	2.5		
	10 x LOR	25	50	25	50	25	25	25	25	25	0.25	25	25	50	25		

Date	Sample Code	Field ID	Matrix Type	Sample Type															
30 Jun 2023	B23-JI0004431	QC221	Soil	Interlab Dup	<2	-	<2	<10	<0.5	-	<5	9.7	<5	<5	<0.1	<5	<2	-	<5
Blind Duplicate				15%	25%	N/C	N/C	N/C	N/C	33%	40%	6%	7%	35%	0%	40%	N/C	0%	40%
Blind Split				N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	19%	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria				No Limit	No Limit	N/C	N/C	N/C	N/C	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	N/C	No Limit	No Limit

30 Jun 2023	9_28621A	GW04_3.0	Soil	Primary	2.5	12	<0.5	2	<0.5	7.5	1	4	9	13	0.015	1.5	<0.5	51	5.5
30 Jun 2023	13_28621A	QC122	Soil	Field_Dup	3.5	11	<0.5	2	<0.5	7.5	1.5	4.5	6.0	10	0.010	2.0	<0.5	54	4.0
30 Jun 2023	B23-JI0004432	QC222	Soil	Interlab_Dup	6.0	-	<2	<10	<0.5	-	<5	<5	6.0	6.4	<0.1	<5	<2	-	<5
Blind Duplicate					33%	9%	N/C	0%	N/C	0%	40%	12%	40%	26%	40%	29%	N/C	6%	32%
Blind Split					82%	N/C	N/C	N/C	N/C	N/C	N/C	N/C	40%	68%	N/C	N/C	N/C	N/C	N/C
Criteria					No Limit	No Limit	N/C	No Limit	N/C	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	N/C	<50%	No Limit

03 Jul 2023	2_28621B	GW05_0.5	Soil	Primary	2	59	<0.5	<1	<0.5	10	4	22	13	10	0.045	6.5	<0.5	29	34
03 Jul 2023	32_28621B	QC123	Soil	Field_Dup	2.0	68	<0.5	<1	<0.5	9.0	2.5	23	10	8.5	0.060	4.5	<0.5	25	28
03 Jul 2023	B23-JI0022939	QC223	Soil	Interlab_Dup	<2	-	<2	<10	<0.5	-	<5	22	9.9	7.7	<0.1	<5	<2	-	39
Blind Duplicate					0%	14%	N/C	N/C	N/C	11%	33%	4%	26%	16%	29%	36%	N/C	15%	19%
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	0%	27%	26%	N/C	N/C	N/C	N/C	14%
Criteria					No Limit	<50%	N/C	N/C	N/C	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	N/C	No Limit	<50%	No Limit

03 Jul 2023	13_28621B	GW05_8.5	Soil	Primary	4	23	<0.5	2	<0.5	1.5	9	17	10	80	0.055	6.5	<0.5	22	31
03 Jul 2023	33_28621B	QC124	Soil	Field_Dup	2.5	21	<0.5	1	<0.5	4.5	4.5	10	6.5	44	0.040	4.0	<0.5	16	21
03 Jul 2023	EB2320847028	QC124	Soil	Interlab_Dup	<5	30	<1	<50	<1	<2	3	12	6	51	<0.1	<2	<5	7	30
Blind Duplicate					46%	9%	N/C	67%	N/C	100%	67%	52%	42%	58%	32%	48%	N/C	32%	38%
Blind Split					N/C	26%	N/C	N/C	N/C	N/C	100%	34%	50%	44%	N/C	N/C	N/C	103%	3%
Criteria					No Limit	No Limit	N/C	No Limit	N/C	No Limit	No Limit	No Limit	No Limit	<50%	No Limit	No Limit	N/C	No Limit	<50%

06 Jul 2023	26_28621B	BH15_32.0	Soil	Primary	4.5	54	<0.5	6	<0.5	2.5	8.5	28	17	400	0.085	8.5	<0.5	9	74
06 Jul 2023	35_28621B	QC126	Soil	Field_Dup	5.5	43	<0.5	8	<0.5	3.0	9.0	28	17	860	0.080	9.5	<0.5	13	98
06 Jul 2023	B23-JI0022942	QC226	Soil	Interlab_Dup	12	-	2.6	<10	<0.5	-	25	46	19	1,200	0.2	20	<2	-	130
Blind Duplicate					20%	23%	N/C	29%	N/C	18%	6%	0%	0%	73%	6%	11%	N/C	36%	28%
Blind Split					91%	N/C	N/C	N/C	N/C	N/C	99%	49%	11%	100%	81%	81%	N/C	N/C	55%
Criteria					No Limit	<50%	N/C	No Limit	N/C	No Limit	No Limit	<50%	No Limit	<50%	No Limit	No Limit	N/C	No Limit	<50%

07 Jul 2023	29_28621B	GW06_1.0	Soil	Primary	2.5	16	<0.5	3	<0.5	4	2	5	7	7	0.01	1.5	<0.5	9	16
07 Jul 2023	36_28621B	QC127	Soil	Field_Dup	3.0	90	<0.5	4	<0.5	2.0	1.0	6.0	7.5	11	0.020	2.0	<0.5	9	17
07 Jul 2023	B23-JI0022943	QC227	Soil	Interlab_Dup	14	-	<2	<10	<0.5	-	<5	7.7	7.8	16	<0.1	<5	<2	-	27
Blind Duplicate					18%	140%	N/C	29%	N/C	67%	40%	18%	7%	44%	67%	29%	N/C	0%	6%
Blind Split					139%	N/C	N/C	N/C	N/C	N/C	N/C	43%	11%	78%	N/C	N/C	N/C	N/C	51%
Criteria					No Limit	No Limit	N/C	No Limit	N/C	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	N/C	No Limit	No Limit	No Limit

07 Jul 2023	27_28621B	GW06_0.0	Soil	Primary	3.5	110	<0.5	4	<0.5	2.5	11	12	12	180	0.01	6.5	<0.5	11	44
07 Jul 2023	37_28621B	QC128	Soil	Field_Dup	4.0	230	<0.5	4	<0.5	3.5	13	14	13	320	0.015	8.5	<0.5	13	54
07 Jul 2023	EB2320847068	QC128	Soil	Interlab_Dup	<5	110	<1	<50	<1	4	14	15	9	414	<0.1	13	<5	24	47
Blind Duplicate					13%	71%	N/C	0%	N/C	33%	17%	15%	8%	56%	40%	27%	N/C	17%	20%
Blind Split					N/C	0%	N/C	N/C	N/C	46%	24%	22%	29%	79%	N/C	67%	N/C	74%	7%
Criteria					No Limit	<50%	N/C	No Limit	N/C	No Limit	No Limit	No Limit	No Limit	<50%	No Limit	No Limit	N/C	No Limit	<50%

01 Aug 2023	EB2323839001	GW01	Water	Primary															
01 Aug 2023	EB2323839020	QC100	Water	Field_Dup															
01 Aug 2023	B23-Au0016689	QC200	Water	Interlab_Dup															
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit	No Limit

Comments	
-	Not analysed
N/C	Not Calculated
No Limit	<10 x LOR
<50%	Criteria
	RPD >50%
	RPD < 50%
Field_Dup	Field Duplicate
Interlab_D	Interlaboratory Duplicate

Comments	
-	Not analysed
N/C	Not Calculated
No Limit	<10 x LOR
<50%	Criteria
	RPD >50%
	RPD < 50%
Field_Dup	Field Duplicate
Interlab_D	Interlaboratory Duplicate

-	Not analysed
N/C	Not Calculated
No Limit	<10 x LOR
<50%	Criteria
	RPD >50%
	RPD < 50%
Field_Dup	Field Duplicate
Interlab_D	Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T12. RPDs - Cyanide, PAH and Phenols (Soils)

Project Name: QPG Ebbw Vale EMR Removal Job Number: BCL220065.01 Client: QPG Table: Table T12. RPDs - Cyanide, PAH and Phenols (Soils)					Phenols											
					2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	3&4-Methylphenol (m&p-cresol)	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
LOR					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	
5 x LOR					2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5	2.5	
10 x LOR					25	25	25	25	25	25	25	25	25	50	25	
Date	Sample Code	Field ID	Matrix Type	Sample Type												
26 Apr 2023	EB2312888035	TP073_1.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	
26 Apr 2023	EB2312888037	QC101	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	
26 Apr 2023	B23-My0032182	QC201	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<0.5	
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
26 Apr 2023	EB2312888097	TP141_1.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	
26 Apr 2023	EB2312888099	QC100	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	
26 Apr 2023	B23-My0032185	QC200	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<0.5	
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
27 Apr 2023	EB2312888027	TP070_1.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	EB2312888029	QC102	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
27 Apr 2023	B23-My0032181	QC202	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
28 Apr 2023	EB2312888102	TP149_0.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	EB2312888105	QC103	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
28 Apr 2023	B23-My0032186	QC203	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
04 May 2023	EB2313452062	TP096_2.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
04 May 2023	EB2313452063	QC105	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
04 May 2023	B23-My0032184	QC205	Soil	Interlab_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
05 May 2023	EB2313452056	TP093_2.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	EB2313452057	QC106	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
05 May 2023	B23-My0032183	QC206	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
08 May 2023	EB2314372004	TP003_0.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	EB2314372005	QC107	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
08 May 2023	B23-My0060420	QC207	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
10 May 2023	EB2314372063	TP146_0.2	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	EB2314372064	QC108	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
10 May 2023	B23-My0060421	QC208	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
17 May 2023	EB2314886022	TP130_2.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
17 May 2023	EB2314886023	QC111	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2	<0.5
17 May 2023	B23-My0073934	QC211	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
20 Jun 2023	EB2318742066	GW01_8.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
20 Jun 2023	EB2318742069	QC119	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
20 Jun 2023	B23-Jl0054347	QC219	Soil	Interlab_Dup	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.2	<0.4	<1	<1	<1	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
30 Jun 2023	EB2320031003	GW04_0.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
30 Jun 2023	EB2320031014	QC120	Soil	Field_Dup	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	B23-Jl0004430	QC220	Soil	Interlab_Dup	-	-	-	-	-	-	-	-	-	-	-	-
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
30 Jun 2023	EB2320031005	GW04_1.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
30 Jun 2023	EB2320031015	QC121	Soil	Field_Dup	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	B23-Jl0004431	QC221	Soil	Interlab_Dup	-	-	-	-	-	-	-	-	-	-	-	-
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
30 Jun 2023	EB2320031007	GW04_3.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
30 Jun 2023	EB2320031016	QC122	Soil	Field_Dup	-	-	-	-	-	-	-	-	-	-	-	-
30 Jun 2023	B23-Jl0004432	QC222	Soil	Interlab_Dup	-	-	-	-	-	-	-	-	-	-	-	-
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

Comments



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T13. RPDs - Pesticides (Soils)

	Organochlorine Pesticides																						
	4,4-DDE	α-BHC	Aldrin + Dieldrin	Aldrin	β-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	δ-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide
LOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
5 x LOR	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
10 x LOR	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

Date	Sample Code	Field ID	Matrix Type	Sample Type																				
26 Apr 2023	EB2312888035	TP073_1.0	Soil	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
26 Apr 2023	EB2312888037	QC101	Soil	Field_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
26 Apr 2023	B23-My0032182	QC201	Soil	Interlab_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
26 Apr 2023	EB2312888097	TP141_1.0	Soil	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
26 Apr 2023	EB2312888099	QC100	Soil	Field_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
26 Apr 2023	B23-My0032185	QC200	Soil	Interlab_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
28 Apr 2023	EB2312888102	TP149_0.5	Soil	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28 Apr 2023	EB2312888105	QC103	Soil	Field_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28 Apr 2023	B23-My0032186	QC203	Soil	Interlab_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

20 Jun 2023	EB2318742066	GW01_8.0	Soil	Primary	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20 Jun 2023	EB2318742069	QC119	Soil	Field_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20 Jun 2023	B23-Jn0054347	QC219	Soil	Interlab_Dup	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

Comments

-

Not analysed

N/C

Not Calculated

No Limit

<10 x LOR

<50%

Criteria

RPD >50%

RPD < 50%

Field_Dup

Field Duplicate

Interlab_D

Interlaboratory Duplicate



Project Name:

QPG Ebbw Vale EMR Removal

Job Number:

BCL220065.01

Client:

QPG

Table:

Table T13. RPDs - Pesticides (Soils)

	Organophosphorous Pesticides																		Pesticides			
	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Malathion	Methyl parathion	Monocrotophos	Parathion	Prothiofos	Chlorobenzilate	Carbazole	Primphos-ethyl
LOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.05	0.5	0.5	0.05
5 x LOR	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	1	1	1	0.25	2.5	2.5	0.25
10 x LOR	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	10	10	10	2.5	25	25	2.5

Date	Sample Code	Field ID	Matrix Type	Sample Type																							
26 Apr 2023	EB2312888035	TP073_1.0	Soil	Primary	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.09#1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05		
26 Apr 2023	EB2312888037	QC101	Soil	Field_Dup	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05		
26 Apr 2023	B23-My0032182	QC201	Soil	Interlab_Dup	<0.05	<0.2	-	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	-	-	-	-		
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
26 Apr 2023	EB2312888097	TP141_1.0	Soil	Primary	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05		
26 Apr 2023	EB2312888099	QC100	Soil	Field_Dup	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05		
26 Apr 2023	B23-My0032185	QC200	Soil	Interlab_Dup	<0.05	<0.2	-	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	-	-	-	-		
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
28 Apr 2023	EB2312888102	TP149_0.5	Soil	Primary	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05		
28 Apr 2023	EB2312888105	QC103	Soil	Field_Dup	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05		
28 Apr 2023	B23-My0032186	QC203	Soil	Interlab_Dup	<0.05	<0.2	-	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	-	-	-	-		
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C		

20 Jun 2023	EB2318742066	GW01_8.0	Soil	Primary	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05
20 Jun 2023	EB2318742069	QC119	Soil	Field_Dup	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.5	<0.5	<0.05
20 Jun 2023	B23-Jn0054347	QC219	Soil	Interlab_Dup	<0.05	<0.2	-	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	-	-	-	-
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

Comments

-

Not analysed

N/C

Not Calculated

No Limit

<10 x LOR

<50%

Criteria

RPD >50%

RPD < 50%

Field_Dup

Field Duplicate

Interlab_D

Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T13. RPDs - Pesticides (Soils)



Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T13. RPDs - Pesticides (Soils)

		Herbicides
		Pronamide
LOR		
5 x LOR		
10 x LOR		

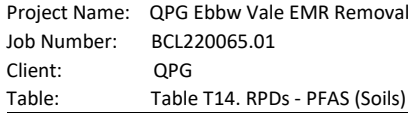
Date	Sample Code	Field ID	Matrix Type	Sample Type	
26 Apr 2023	EB2312888035	TP073_1.0	Soil	Primary	<0.5
26 Apr 2023	EB2312888037	QC101	Soil	Field_Dup	<0.5
26 Apr 2023	B23-My0032182	QC201	Soil	Interlab_Dup	<0.5
Blind Duplicate					N/C
Blind Split					N/C
Criteria					N/C

26 Apr 2023	EB2312888097	TP141_1.0	Soil	Primary	<0.5
26 Apr 2023	EB2312888099	QC100	Soil	Field_Dup	<0.5
26 Apr 2023	B23-My0032185	QC200	Soil	Interlab_Dup	<0.5
Blind Duplicate					N/C
Blind Split					N/C
Criteria					N/C

28 Apr 2023	EB2312888102	TP149_0.5	Soil	Primary	<0.5
28 Apr 2023	EB2312888105	QC103	Soil	Field_Dup	<0.5
28 Apr 2023	B23-My0032186	QC203	Soil	Interlab_Dup	<0.5
Blind Duplicate					N/C
Blind Split					N/C
Criteria					N/C

20 Jun 2023	EB2318742066	GW01_8.0	Soil	Primary	<0.5
20 Jun 2023	EB2318742069	QC119	Soil	Field_Dup	<0.5
20 Jun 2023	B23-Jn0054347	QC219	Soil	Interlab_Dup	<0.5
Blind Duplicate					N/C
Blind Split					N/C
Criteria					N/C

Comments	
-	Not analysed
N/C	Not Calculated
No Limit	<10 x LOR
<50%	Criteria
	RPD >50%
	RPD < 50%
Field_Dup	Field Duplicate
Interlab_D	Interlaboratory Duplicate



Date	Sample Code	Field ID	Matrix Type	Sample Type
------	-------------	----------	-------------	-------------

[illegible][illegible][illegible]

-	Not analysed
N/C	Not Calculated
No Limit	<10 x LOR
<50%	Criteria
	RPD >50%
	RPD < 50%
Field_Dup	Field Duplicate
Interlab_D	Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T15. RPDs - VOCs and SVOCs (Soil)

ENVIRONMENTAL

Project Name: QPG Ebbw Vale EMR Removal

Job Number: BCL220065.01

Client: QPG

Table: Table T15. RPDs - VOCs and SVOCs (Soil)

				Amino Aliphatics				Amino Aromatics		Anilines						MAH										Halogenated Hydrocarbons												
				N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	N-Nitrosodiphenyl & Diphenylamine	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,2-trichloropropane	1,2-dibromo-3-chloropropane
LOR				0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5 x LOR				2.5	2.5	2.5	2.5	2.5	5	2.5	5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10 x LOR				25	25	25	25	25	50	25	50	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25

Date	Sample Code	Field ID	Matrix Type	Sample Type																																			
26 Apr 2023	EB2312888035	TP073_1.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	EB2312888037	QC101	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	B23-My0032182	QC201	Soil	Interlab_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

26 Apr 2023	EB2312888097	TP141_1.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	EB2312888099	QC100	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
26 Apr 2023	B23-My0032185	QC200	Soil	Interlab_Dup	-	<0.5	<0.5	-	<0.5	-	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

28 Apr 2023	EB2312888102	TP149_0.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	EB2312888105	QC103	Soil	Field_Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
28 Apr 2023	B23-My0032186	QC203	Soil	Interlab_Dup	-	<0.5	<0.5	-	<0.5	-	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

30 Jun 2023	EB2320031003	GW04_0.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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30 Jun 2023	EB2320031005	GW04_1.5	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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30 Jun 2023	EB2320031007	GW04_3.0	Soil	Primary	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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[illegible][illegible][illegible][illegible][illegible][illegible]

Comments	
-	Not analysed
N/C	Not Calculated
No Limit	<10 x LOR
<50%	Criteria
	RPD >50%
	RPD < 50%
Field_Dup	Field Duplicate
Interlab_D	Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T16. RPDs - Groundwater (All Analytes)



Project Name:

QPG Ebbw Vale EMR Removal

Job Number:

BCL220065.01

Client:

QPG

Table:

Table T16. RPDs - Groundwater (All Analytes)

	Amino Aliphatics				Physico-Chemical & Major Ions																			
	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	TDS	Chloride	Sulfate as SO4 - Turbidimetric (filtered)	Sulphate	Alkalinity (Hydroxide) as CaCO3	Carbonate as CaCO3	Bicarbonate as CaCO3	Alkalinity (total) as CaCO3	Calcium	Calcium (filtered)	Magnesium	Magnesium (filtered)	Sodium	Sodium (filtered)	Potassium	Potassium (filtered)	Fluoride	Anions Total	Cations Total	Ionic Balance
LOR	0.1	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	1	1	0.5	1	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	0.5
5 x LOR	0.5	0.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5	5	5	2.5	5	2.5	2.5	2.5	2.5	2.5	5	2.5	5	2.5	2.5
10 x LOR	5	5	25	25	25	25	25	25	25	50	50	50	25	50	25	25	25	25	25	50	25	50	25	25

Date	Sample Code	Field ID	Matrix Type	Sample Type																								
01 Aug 2023	EB2323839001	GW01	Water	Primary	<2	<2	<2	<2	1,220	403	53	-	<1	<1	543	543	-	63	-	70	-	283	-	9	-	23.3	21.4	4.19
01 Aug 2023	EB2323839020	QC100	Water	Field_Dup	<2	<2	<2	<2	1,200	404	53	-	<1	<1	543	543	-	69	-	82	-	337	-	10	-	23.3	25.1	3.63
01 Aug 2023	B23-Au0016689	QC200	Water	Interlab_Dup	-	<5	<5	-	1,200	390	-	60	<20	<20	580	580	65	-	75	-	310	-	10	-	<0.5	-	-	-
Blind Duplicate					N/C	N/C	N/C	N/C	2%	0%	0%	N/C	N/C	N/C	0%	0%	N/C	9%	N/C	16%	N/C	17%	N/C	11%	N/C	0%	16%	14%
Blind Split					N/C	N/C	N/C	N/C	2%	3%	N/C	N/C	N/C	N/C	7%	7%	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	<50%	<50%	<50%	<50%	N/C	N/C	<50%	<50%	<50%	<50%	<50%	<50%	<50%	<50%	<50%	<50%	<50%	<50%	<50%	<50%

Comments

-

Not analysed

N/C

Not Calculated

No Limit

<10 x LOR

<50%

Criteria

RPD >50%

RPD < 50%

Field_Dup

Field Duplicate

Interlab_D

Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T16. RPDs - Groundwater (All Analytes)



Project Name: QPG Ebbw Vale EMR Removal

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Table: Table T16. RPDs - Groundwater (All Analytes)

		Amino Aromatics		Inorganics		Anilines						Metals												
	Hardness as CaCO3	1-naphthylamine	N-Nitrosodiphenyl & Diphenylamine	Cyanide (Free)	Cyanide (WAD)	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Aluminium	Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Copper (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc
LOR	0.5	0.5	0.5	0.5	0.005	0.5	0.5	1	0.5	0.1	1	0.1	2	0.1	2	0.2	2	0.1	2	0.3	2	0.5	0.5	5
5 x LOR	2.5	2.5	2.5	2.5	0.024999999	2.5	2.5	5	2.5	0.5	5	0.5	10	0.5	10	1	10	0.5	10	1.5	10	2.5	2.5	25
10 x LOR	25	25	25	25	0.25	25	25	50	25	5	50	5	100	5	100	10	100	5	100	15	100	25	25	250

Date	Sample Code	Field ID	Matrix Type	Sample Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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Comments

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Not analysed

N/C

Not Calculated

No Limit

<10 x LOR

<50%

Criteria

RPD >50%

RPD < 50%

Field_Dup

Field Duplicate

Interlab_D

Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T16. RPDs - Groundwater (All Analytes)

	BTEX										TRH							MAH						
	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene	Naphthalene (BTEX)	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	Total MAH	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene
LOR	0.2	1	10	20	10	20	50	50	100	100	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5 x LOR	1	5	50	100	50	100	250	250	500	500	250	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10 x LOR	10	50	500	1000	500	1000	2500	2500	5000	5000	2500	25	25	25	25	25	25	25	25	25	25	25	25	25

Date	Sample Code	Field ID	Matrix Type	Sample Type																					
01 Aug 2023	EB2323839001	GW01	Water	Primary	<5	<1	<2	<2	<2	<2	<2	<2	<5	<1	40	40	<100	<100	<100	<100	<100	-	<5	<5	<5
01 Aug 2023	EB2323839020	QC100	Water	Field_Dup	<5	<1	<2	<2	<2	<2	<2	<2	<5	<1	<20	<20	<100	<100	<100	<100	<100	-	<5	<5	<5
01 Aug 2023	B23-Au0016689	QC200	Water	Interlab_Dup	<5	<1	<1	<1	<2	<1	<3	<1	<10	-	<20	<20	<50	<50	<100	<100	<100	<0.003	<1	<1	<1
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

Comments

-

Not analysed

N/C

Not Calculated

No Limit

<10 x LOR

<50%

Criteria

RPD >50%

RPD < 50%

Field_Dup

Field Duplicate

Interlab_D

Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
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Table: Table T16. RPDs - Groundwater (All Analytes)



Project Name:

QPG Ebbw Vale EMR Removal

Job Number:

BCL220065.01

Client:

QPG

Table:

Table T16. RPDs - Groundwater (All Analytes)

				Halogenated Hydrocarbons							Chlorinated Hydrocarbons														
	sec-butylbenzene	Styrene	tert-butylbenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromodichloromethane	Bromoform	Carbon tetrachloride	
LOR	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
5 x LOR	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
10 x LOR	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	

Date	Sample Code	Field ID	Matrix Type	Sample Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Comments

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Not analysed

N/C

Not Calculated

No Limit

<10 x LOR

<50%

Criteria

RPD >50%

RPD < 50%

Field_Dup

Field Duplicate

Interlab_D

Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T16. RPDs - Groundwater (All Analytes)



Project Name:

QPG Ebbw Vale EMR Removal

Job Number:

BCL220065.01

Client:

QPG

Table:

Table T16. RPDs - Groundwater (All Analytes)

	arbons																Halogenated Benzenes									
	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene		
LOR	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
5 x LOR	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
10 x LOR	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25		

Date	Sample Code	Field ID	Matrix Type	Sample Type																					
01 Aug 2023	EB2323839001	GW01	Water	Primary	<5	<50	<5	<50	<5	<5	<5	<2	<10	<2	<5	<5	<5	<50	<5	<2	<2	<2	<2	<5	<5
01 Aug 2023	EB2323839020	QC100	Water	Field_Dup	<5	<50	<5	<50	<5	<5	<5	<2	<10	<2	<5	<5	<5	<50	<5	<2	<2	<2	<2	<5	<5
01 Aug 2023	B23-Au0016689	QC200	Water	Interlab_Dup	<1	<5	<5	<5	<1	<1	<1	<5	<5	<1	<1	<1	<5	<5	<5	<1	<1	-	<1	<1	<1
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

Comments

-

Not analysed

N/C

Not Calculated

No Limit

<10 x LOR

<50%

Criteria

RPD >50%

RPD < 50%

Field_Dup

Field Duplicate

Interlab_D

Interlaboratory Duplicate



Project Name: QPG Ebbw Vale EMR Removal
Job Number: BCL220065.01
Client: QPG
Table: Table T16. RPDs - Groundwater (All Analytes)

			VOCs				
	Hexachlorobenzene	Pentachlorobenzene	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane	2-(acetylamino) fluorene	3,3-Dichlorobenzidine
LOR	0.5	0.5	0.5	0.05	0.5	0.5	0.5
5 x LOR	2.5	2.5	2.5	0.25	2.5	2.5	2.5
10 x LOR	25	25	25	2.5	25	25	25

Date	Sample Code	Field ID	Matrix Type	Sample Type							
01 Aug 2023	EB2323839001	GW01	Water	Primary	<4	<2	<5	<5	<5	<2	<2
01 Aug 2023	EB2323839020	QC100	Water	Field_Dup	<4	<2	<5	<5	<5	<2	<2
01 Aug 2023	B23-Au0016689	QC200	Water	Interlab_Dup	<5	<5	-	-	-	-	<5
Blind Duplicate					N/C	N/C	N/C	N/C	N/C	N/C	N/C
Blind Split					N/C	N/C	N/C	N/C	N/C	N/C	N/C
Criteria					N/C	N/C	N/C	N/C	N/C	N/C	N/C

Comments

- Not analysed
- N/CNot Calculated
- No Limit<10 x LOR
- <50%Criteria
- RPD >50%
- RPD < 50%
- Field_DupField Duplicate
- Interlab_DInterlaboratory Duplicate